CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

BALKRISHNA BOOK Co.
Hazratganj, Lucknow.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ENCYCLOPEDIA OF WORLD ART

Vol. XIV
TEXTILES, EMBROIDERY, AND LACE – ZURBARÁN

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

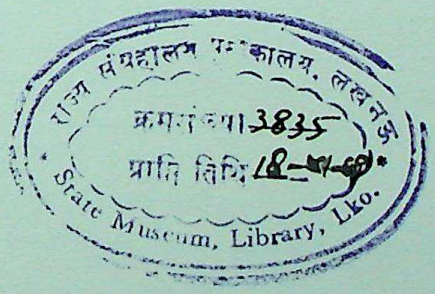
ENCICLOPEDIA UNIVERSALE DELL'ARTE

Sotto gli auspici della Fondazione Giorgio Cini

ISTITUTO PER LA COLLABORAZIONE CULTURALE
VENEZIA-ROMA

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ENCYCLOPEDIA OF WORLD ART



McGRAW-HILL BOOK COMPANY
NEW YORK, TORONTO, LONDON

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ENCYCLOPEDIA OF WORLD ART: VOLUME XIV

Copyright © 1967 in England by McGraw-Hill Publishing Company Limited, London. All rights reserved. Italian language edition, including all texts and plates, copyrighted © 1958 by the Istituto per la Collaborazione Culturale, Rome, under the Universal Copyright Convention. All plates herein are the property of the Istituto per la Collaborazione Culturale. Except for brief quotations in reviews no part of this book may be reproduced without permission in writing from the publishers.

3835
18.XI.69

Paper for plates and text supplied by Cartiere Burgo, Turin — Engraving by Zincotipia Altimani, Milan — Black-and-white and color plates printed by Tipocolor, Florence — Text printed by "L'Impronta," Florence — Binding by Stabilimento Stianti, San Casciano Val di Pesa, Florence — Book cloth supplied by G. Pasini e C., Milan

Printed in Italy

Library of Congress Catalog Card Number 59-13433
19471

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

INTERNATIONAL COUNCIL OF SCHOLARS

Mario SALMI, University of Rome; President

† Marcel AUBERT, Institut de France; Société Française d'Archéologie, Paris; Vice President
† Ernst KÜHNEL, Staatliche Museen, Berlin; Vice President
† Amedeo MAIURI, Accademia dei Lincei, Naples; Vice President
Gisela M. A. RICHTER, Metropolitan Museum of Art, New York City; Vice President
Giuseppe TUCCI, Istituto Italiano per il Medio ed Estremo Oriente, Rome; Vice President

Alvar AALTO, Helsinki
Jean ALAZARD, University of Algiers
Andrew ALFÖLDI, University of Basel; Institute for Advanced Study, Princeton, N.J.
† Carlo ANTI, University of Padua
Sir Gilbert ARCHEY, Auckland, New Zealand
A. S. ARDOJO, Jakarta, Indonesia
Bernard ASHMOLE, Oxford University
Jeannine AUBOYER, Musée Guimet, Paris
† Ludwig BALDASS, Kunsthistorisches Museum, Vienna
Sir John Davidson BEAZLEY, Oxford University
† Bernard BERENSON
W. BLAWATSKY, Institute of Archaeology, Academy of Sciences of the U.S.S.R., Moscow
† Albert BOECKLER, Staatsbibliothekar, Munich
Axel BOËTHIUS, formerly, University of Göteborg; Swedish Institute, Rome
† Helmut T. BOSSERT, University of Istanbul
Cesare BRANDI, University of Palermo
† Henri BREUIL, Institut de France; Collège de France, Paris
Peter H. BRIEGER, University of Toronto
Joseph BURKE, University of Melbourne
A. W. BYVANCK, University of Leiden
Guido CALOGERO, University of Rome
Alfonso CASO, Tlacopac, Mexico
† Carlo CECCHELLI, University of Rome
Enrico CERULLI, Accademia dei Lincei, Rome
Jean CHARBONNEAUX, Inspecteur général honoraire des Musées de France, Paris
† Gino CHIERICI, Soprintendente ai Monumenti, Pavia
Fernando CHUECA Y GOITIA, Museum of Contemporary Art, Madrid; University of Madrid
Giuseppe COCCHIARA, University of Palermo
George CŒDÈS, Institut de France; Ecole Française d'Extrême-Orient, Paris
Paul COLLART, Swiss Institute, Rome
W. G. CONSTABLE, formerly, Museum of Fine Arts, Boston
Paolo D'ANCONA, University of Milan
† Sir Percival DAVID, London
Guglielmo DE ANGELIS D'OSSAT, University of Rome
Otto DEMUS, University of Vienna
Paul DESCHAMPS, Institut de France; Musée National des Monuments Français, Paris
Prince DHANINIVAT, Siam Society, Bangkok
Adrian DIGBY, British Museum, London
† Einar DYGGVE, Ny Carlsberg Foundation, Copenhagen
Gustav ECKE, Honolulu Academy of Arts; University of Hawaii, Honolulu
Vadime ELISSEEFF, Musée Cernuschi, Paris; Ecole Pratique des Hautes Etudes, University of Paris
A. P. ELKIN, University of Sydney
Richard ETTINGHAUSEN, Freer Gallery of Art, Washington, D.C.
Bishr FARÈS, Institut d'Egypte, Cairo
† Paul FIERENS, Musées Royaux des Beaux-Arts, Brussels
Giuseppe FIOCCO, Istituto di Storia dell'Arte, Fondazione Giorgio Cini, Venice; University of Padua
Pierre FRANCASTEL, Ecole Pratique des Hautes Etudes, University of Paris
† Giuseppe FURLANI, University of Rome
Albert GABRIEL, formerly, Institut Français d'Archéologie, Istanbul
O. C. GANGOLY, Calcutta
Antonio GARCÍA Y BELLIDO, University of Madrid
Alberto GIUGANINO, Istituto Italiano per il Medio ed Estremo Oriente, Rome
Albert Rex GONZALES, Museo de La Plata, Argentina
L. Carrington GOODRICH, Columbia University, New York City
Lloyd GOODRICH, Whitney Museum of American Art, New York City
André GRABAR, Institut de France; Collège de France; Ecole Pratique des Hautes Etudes, University of Paris

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Basil Gray, British Museum, London
Paolo Graziosi, University of Florence
† Albert Grenier, Institut de France; Collège de France, Paris
Will Grohmann, Berlin
Walter Gropius, The Architects Collaborative Inc., Cambridge, Mass.
José Gudiol, Instituto Amatller de Arte Hispánico, Barcelona; University of Barcelona
† Robert H. van Gulik, Netherlands Ambassador to Japan, Tokyo
Hans R. Hahnloser, Bern
Charles Hentze, Darmstadt, Germany
† Reinhard Herbig, German Archaeological Institute, Rome
† Melville J. Herskovits, Northwestern University, Evanston, Ill.
L. H. Heydenreich, Zentralinstitut für Kunstgeschichte, Munich; University of Munich
Henry-Russell Hitchcock, Smith College, Northampton, Mass.
Jean Hubert, Institut de France; Ecole National des Chartes, University of Paris
René Huyghe, Académie Française; Collège de France, Paris
José Imbelloni, University of Buenos Aires
† Guido von Kaschnitz-Weinberg, University of Frankfort on the Main
Ahmed Ali Khozad Khan, Archaeological Museum, Kabul
† Carl Kjersmeier
† Elie Lambert, Institut de France; University of Paris
Ernst Langlotz, University of Bonn
Raymond Lantier, Institut de France; Musée des Antiquités Nationales, Saint-Germain-en-Laye
Oliver W. Larkin, Smith College, Northampton, Mass.
Sherman E. Lee, Cleveland Museum of Art, Ohio
† Paul Lemerle, Ecole Pratique des Hautes Etudes, University of Paris
Doro Levi, Scuola Archeologica Italiana, Athens
Roberto Longhi, University of Florence
Hans Peter L'Orange, Norwegian Archaeological Institute, Rome; University of Oslo
Stanislaw Lorentz, National Museum, Warsaw
Otto J. Maenchen-Helfen, University of California, Berkeley
Arif Müfid Mansel, University of Istanbul
Millard Meiss, Institute for Advanced Study, Princeton, N.J.
Osvaldo F. A. Menghin, Universities of Buenos Aires and La Plata
† Alfred Merlin, Institut de France
Bruno Molajoli, Direttore Generale delle Antichità e Belle Arti, Rome
Théodore Monod, Institut de France; Muséum National d'Histoire Naturelle, Paris
Bernard S. Myers, formerly, The City College, New York City
Pier Luigi Nervi, Rome
† Frans M. Olbrechts, Musée Royal de L'Afrique Centrale, Tervueren, Belgium; University of Ghent
Rodolfo Pallucchini, University of Padua
† Erwin Panofsky, Institute for Advanced Study, Princeton, N.J.
Senarat Paranavitana, University of Ceylon, Paradeniya
Luciano Petech, University of Rome
Helmut Petri, University of Cologne
† Carlo Alberto Petrucci, Accademia di San Luca, Rome
† Sir Herbert Read, Institute of Contemporary Arts, London
† D. C. Röell, Rijksmuseum, Amsterdam
Jorge Romero Brest, Centro des Artes Visuales del Instituto Di Tella, Buenos Aires; formerly, Museo Nacional de Bellas Artes, Buenos Aires; formerly, Universities of Buenos Aires, La Plata, and Montevideo
Andreas Rumpf, University of Cologne
Edouard Salin, Institut de France; Société d'Archéologie Lorraine and Musée Historique Lorrain, Nancy; Centre de Recherches de l'Histoire de la Sidérugie and Musée de l'Histoire du Fer
† Alfred Salmony, Institute of Fine Arts, New York University
Daniel Schlumberger, Institut de France; University of Strasbourg; formerly, Délégation Archéologique Francaise en Afghanistan
Antonio Serrano, formerly, University of Córdoba, Argentina
Meyer Shapiro, Columbia University, New York City
Osvald Sirén, formerly, Nationalmuseum, Stockholm
Calambur Śivaramamurti, National Museum, New Delhi
† Werner Speiser, Museum für Ostasiatische Kunst, Cologne; University of Cologne
Ugo Spirito, University of Rome
Alfred Steinmann, Sammlung für Völkerkunde, University of Zurich
Philippe Stern, formerly, Musée Guimet, Paris
† William Suida, Samuel H. Kress Foundation, New York City
Charles de Tolnay, Casa Buonarroti, Florence
Paolo Toschi, University of Rome
Arthur D. Trendall, Australian National University, Canberra
Naoteru Uyeno, Tokyo Bijutsu Daigaku; University of Arts, Tokyo
Luís E. Valcárcel, Museo Nacional de Historia, Lima
Roland de Vaux, Ecole Biblique et Archéologique Française, Jerusalem
† Lionello Venturi, University of Rome
Ernst Waldschmidt, University of Göttingen
Kurt Weitzmann, Princeton University, N.J.
Sir Mortimer Wheeler, The British Academy, London
Paul S. Wingert, Columbia University, New York City
Rudolf Wittkower, Columbia University, New York City
Yuko Yashiro, Tokyo Bijutsu Daigaku; National Commission for the Protection of Cultural Properties, Tokyo
Paola Zancani Montuoro, Accademia dei Lincei, Rome

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ITALIAN EDITORIAL BOARD

Editor in Chief, Massimo PALLOTTINO, University of Rome. Section Directors: *Modern Art*, Giulio Carlo ARGAN, University of Rome; *Oriental Art*, Mario BUSSAGLI, University of Rome; *Ancient Art*, Michelangelo CAGIANO DE AZEVEDO, Università Cattolica del S. Cuore, Milan; *Medieval Art*, Géza DE' FRANCOVICH, University of Rome; *Primitive Art*, Vinigi L. GROTTANELLI, Pontificium Athenaeum Urbanianum de Propaganda Fide, Rome. Consulting Director, Sabatino MOSCATI, University of Rome. Coordinating Committee: Mario SALMI, President of the International Council of Scholars; Giuseppe TUCCI, Vice President of the International Council of Scholars; Massimo PALLOTTINO; Giulio Carlo ARGAN.

AMERICAN EDITORIAL ADVISORY COMMITTEE

W. G. CONSTABLE, formerly, Boston Museum of Fine Arts; Lloyd GOODRICH, Director, Whitney Museum of American Art; Henry-Russell HITCHCOCK, Smith College; Oliver W. LARKIN, Smith College; Bernard S. MYERS, formerly, The City College, New York; Gisela M. A. RICHTER, Honorary Curator, Metropolitan Museum of Art; Paul S. WINGERT, Columbia University.

EDITORIAL STAFF FOR THE ISTITUTO

Secretary General: Prof. Alberto Mario CIRESE. *Section Editors*: Dr. Catia CAPRINO; Dr. Ernesta CERULLI; Dr. Paolo DAFFINÀ; Dr. Luciana FERRARA; Dr. Fernanda de' MAFFEI; Prof. Luigi SALERNO. *Consulting Editor*: Prof. Eugenio BATTISTI. *Editorial Assistants*: Dr. Margherita ABBRUZZESE; Dr. Margherita ALOSI CATELLI; Dr. Tea MARTINELLI COCO; Dr. Anna Maria ROVERI; Dr. Italo SIGNORINI.

Illustrations. Editor: Prof. Alessandro MARABOTTINI MARABOTTI. *Consultants*: Maria CALANDRA, Architect; Dr. Enzo CREA. *Assistants*: Dr. Assunta BOSCHETTI ALBANESI; Dr. Gemma CORTESE DI DOMENICO; Prof. Raniero GNOLI; Dr. Romolo STACCIOLI; Dr. Anna Maria TAMASSIA; Paola VERGARA CAFFARELLI.

Copy Editing and Index. Editor: Dr. Nicola TERRANOVA. *Assistants*: Dr. Gigliola BONUCCI CAPORALI; Dr. Maria BORSELLINO DE LORENZO; Dr. Emilia BOSCHERINI GIANCOTTI; Adriana CARINI; Dr. Marco CHIARINI; Dr. Giovanni CRAPULLI; Dr. Elsa FUBINI; Prof. Alberto GIANQUINTO; Elena GRILLO; Dr. Elena OTTOLENGHI; Dr. Giorgio STACUL; Dr. Mario TRONTI; Dr. Franco VOLTAGGIO. *Secretary*: Dr. Bianca Laura DE VITA FASANI.

STAFF FOR THE McGRAW-HILL EDITION

Managing Editor: Beatrice CARSON.
Associate Managing Editor: Robert BRAINERD.
Administrative Assistant: Sally Cook PERRA.
Senior Editor: Dorothy CODDINGTON.
Translation Editor: Lucille P. KERR.
Translation Assistant: Fernanda de' MAFFEI.
Research Editor: Lideke HOFFSCHOLTE.
Researchers: Julia BALLERINI; Barbara BRYANT; Franca CAMIZ; Judith EASTMAN; Marcia RACKOW; Nicole RZEWSKI; Judith TEMESY-ARMOS.
Illustrations: Erika BIZZARRI; Françoise CHIARINI.
Bibliography: Neil THOMPSON.
Copy Editors: Barbara ANGELILLO; Nora BEESON; Iris BLUMENTHAL; Patrick J. BURY; Florence DANKO; Ruth EISENSTEIN; Cecily R. FORTESCUE; Carlos MÉNDEZ.
Proof Editor: Gordon GIDLEY.
Proof Assistants: Clodagh M. FLAHERTY; Pamela JONES; Raymond C. PHILLIPS, JR.
Consulting Editor: Bernard S. MYERS.
Index Editor: Delight ANSLEY.
Executive Editor: David EGGENBERGER.
Administrative Editor: M. Barat Kerr SPARKS.
Coordinating Editor: Edmée BUSCH.

TECHNICAL STAFF

Technical Director: Dr. Matilde GIACHETTI, Casa Editrice G. C. Sansoni. *Technical Assistants*: Dr. Catervo BLASI FOGLIETTI; Giulio GIUFFRIDA RUGGERI. *Photographic Archives. Director*: Dr. Enzo CREA. *Assistant*: Dr. Paola DE GASPERI. *Maps*: Prof. Mario RICCARDI; Giuliana CAPORALI. *Drawings*: Bruno BARINCI, Architect. *Plate layout*: Piero BERTA; Paolo BUDASSI.

Production and Technical Direction, English and Italian Editions

CASA EDITRICE G. C. SANSONI

Florence

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ABBREVIATIONS

Museums, Galleries, Libraries, and Other Institutions

Antikensamml.	— Antikensammlungen
Antiq.	— Antiquarium
Bib. Nat.	— Bibliothèque Nationale
Bib. Naz.	— Biblioteca Nazionale
Brera	— Pinacoteca di Brera
Br. Mus.	— British Museum
Cab. Méd.	— Cabinet des Médailles (Paris, Bibliothèque Nationale)
Cleve. Mus.	— Cleveland Museum
Conserv.	— Palazzo dei Conservatori
Gall. Arte Mod.	— Galleria d'Arte Moderna
IsMEO	— Istituto Italiano per il Medio ed Estremo Oriente
Kunstgewerbemus.	— Kunstgewerbemuseum
Kunsthist. Mus.	— Kunsthistorisches Museum
Louvre	— Musée du Louvre
Medagl.	— Medagliere
Met. Mus.	— Metropolitan Museum
Mus. Ant.	— Museo di Antichità
Mus. Arch.	— Museo Archeologico
Mus. B. A.	— Musée des Beaux-Arts
Mus. Cap.	— Musei Capitolini, Capitoline Museums
Mus. Civ.	— Museo Civico
Mus. Com.	— Museo Comunale
Mus. Etn.	— Museo Etnologico
Mus. Naz.	— Museo Nazionale
Nat. Gall.	— National Gallery
Öst. Gal.	— Österreichische Galerie
Pin. Naz.	— Pinacoteca Nazionale
Prado	— Museo del Prado
Rijksmus.	— Rijksmuseum
Samml.	— Sammlung
Staat. Mus.	— Staatliche Museen
Staatsbib.	— Staatsbibliothek
Städt. Mus.	— Städtisches Museum
Tate Gall.	— Tate Gallery
Uffizi	— Uffizi Gallery
Vat. Mus.	— Vatican Museums
Vict. and Alb.	— Victoria and Albert Museum
Villa Giulia	— Museo di Villa Giulia

Reviews and Miscellanies

AAE	— Archivio per la Antropologia e la Etnologia, Florence
AAnz	— Archäologischer Anzeiger, Berlin
AAs	— Artibus Asiae, Ascona, Switzerland
AAV	— Archivo de Arte Valenciano, Valencia
AB	— Art Bulletin, New York
AbhAkMünchen	— Abhandlungen der Bayerischen Akademie der Wissenschaften, Munich
AbhPreussAk	— Abhandlungen der preussischen Akademie der Wissenschaften, Berlin; after 1945, Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin, Berlin
ABIA	— Annual Bibliography of Indian Archaeology, Leiden
ABMAB	— Anales y Boletín de los Museos de Arte de Barcelona
ABME	— Ἀρχεῖον τῶν Βυζαντινῶν Μνημείων τῆς Ἑλλάδος, Athens
AC	— Archeologia Classica, Rome
ACCV	— Anales del Centro de Cultura Valenciana, Valencia
ActaA	— Acta Archaeologica, Copenhagen
ActaO	— Acta Orientalia, Leiden, The Hague
AD	— Antike Denkmäler, Deutsches Archäologisches Institut, Berlin, Leipzig
AE	— Arte Español, Madrid
AEA	— Archivo Español de Arqueología, Madrid
AEAA	— Archivo Español de Arte y Arqueología, Madrid
AEArte	— Archivio Español de Arte, Madrid
AErt	— Archaeologiai Értesitö, Budapest
AfA	— Archiv für Anthropologie, Brunswick
AfO	— Archiv für Orientforschung, Berlin
AfrIt	— Africa Italiana, Bergamo
AGS	— American Guide Series, U.S. Federal Writers' Project, Works Progress Administration, Washington, D.C., 1935–41
AIEC	— Anuari de l'Institut d'Estudies Catalans, Barcelona
AIEG	— Anales del Instituto de Estudios Gerundenses, Gerona
AJA	— American Journal of Archaeology, Baltimore
AM	— Mitteilungen des deutschen archäologischen Instituts, Athenische Abteilung, Athens, Stuttgart
AmA	— American Anthropologist, Menasha, Wis.
AmAnt	— American Antiquity, Menasha, Wis.
AN	— Art News, New York
AnnInst	— Annali dell'Instituto di Corrispondenza Archeologica, Rome
AnnSAntEg	— Annales du Service des Antiquités de l'Egypte, Cairo
AntC	— L'Antiquité Classique, Louvain
AntJ	— The Antiquaries Journal, London
AnzAlt	— Anzeiger für die Altertumswissenschaft, Innsbruck, Vienna
AnzÖAk	— Anzeiger der Österreichischen Akademie der Wissenschaften, Vienna
APAmM	— Anthropological Papers of the American Museum of Natural History, New York
AQ	— Art Quarterly, Detroit
ArndtBr	— P. Arndt, F. Bruckmann, Griechische und römische Porträts, Munich, 1891 ff.
ARSI	— Annual Report of the Smithsonian Institution, Bureau of Ethnology, Washington, D.C.
ArtiFig	— Arti Figurative, Rome
ASAtene	— Annuario della Scuola Archeologica Italiana di Atene, Bergamo
ASI	— Archivio Storico Italiano, Florence
ASWI	— Archaeological Survey of Western India, Hyderabad
AttiCongrStAMed	— Atti dei Congressi di Studi dell'Arte dell'Alto Medioevo
AttiDeSPa	— Atti e Memorie della Deputazione di Storia Patria
AttiPontAcc	— Atti della Pontificia Accademia Romana di Archeologia, Rome
Atti3StArch	— Atti del III Convegno Nazionale di Storia dell'Architettura, Rome, 1938
Atti5StArch	— Atti del V Convegno Nazionale di Storia dell'Architettura, Florence, 1957

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

AZ — Archäologische Zeitung, Berlin
BA — Baessler Archiv, Leipzig, Berlin
BABsch — Bulletin van de Vereeniging tot bevordering der kennis van de antieke Beschaving, The Hague
BAC — Bulletin du Comité des Travaux Historiques et Scientifiques, Section d'Archéologie, Paris
BAcBelg — Bulletin de l'Académie Royale de Belgique, Cl. des Lettres, Brussels
BACr — Bollettino di Archeologia Cristiana, Rome
BAEB — Bureau of American Ethnology, Bulletins, Washington, D.C.
BAER — Bureau of American Ethnology, Reports, Washington, D.C.
BAFr — Bulletin de la Société Nationale des Antiquaires de France, Paris
BAmSOR — Bulletin of the American Schools of Oriental Research, South Hadley, Mass.
BArte — Bollettino d'Arte del Ministero della Pubblica Istruzione, Rome
BAT — Boletín Arqueológico Tarragona
BBMP — Boletín de la Biblioteca Menéndez Pelayo, Santander
BByzI — The Bulletin of the Byzantine Institute, Paris
BCH — Bulletin de Correspondance Hellénique, Paris
BCom — Bullettino della Commissione Archeologica Comunale, Rome
BCPMB — Boletín de la Comision Provincial de Monumentos de Burgos
BCPML — Boletín de la Comision Provincial de Monumentos de Lugo
BCPMO — Boletín de la Comision Provincial de Monumentos de Orense
Beazley, ABV — J. D. Beazley, Attic Black-figure Vase-painters, Oxford, 1956
Beazley, ARV — J. D. Beazley, Attic Red-figure Vase-painters, Oxford, 1942
Beazley, EVP — J. D. Beazley, Etruscan Vase-painting, Oxford, 1947
Beazley, VA — J. D. Beazley, Attic Red-figured Vases in American Museums, Cambridge, 1918
Beazley, VRS — J. D. Beazley, Attische Vasenmaler des rotfigurigen Stils, Tübingen, 1925
BEFEO — Bulletin de l'Ecole Française d'Extrême-Orient, Hanoi, Saigon, Paris
BerlNZ — Berliner Numismatische Zeitschrift, Berlin
Bernoulli, GI — J. J. Bernoulli, Griechische Ikonographie, Munich, 1901
Bernoulli, RI — J. J. Bernoulli, Römische Ikonographie, I, Stuttgart, 1882; II, 1, Berlin, Stuttgart, 1886; II, 2, Stuttgart, Berlin, Leipzig, 1891; II, 3, Stuttgart, Berlin, Leipzig, 1894
BHAcRoum — Bulletin Historique, Académie Roumaine, Bucharest
BICR — Bollettino dell'Istituto Centrale del Restauro, Rome
BIE — Bulletin de l'Institut de l'Egypte, Cairo
BIFAN — Bulletin de l'Institut Français d'Afrique Noire, Dakar
BIFAO — Bulletin de l'Institut Français d'Archéologie Orientale, Cairo
BIFG — Boletín de la Institución Fernán González, Burgos
BInst — Bullettino dell'Instituto di Corrispondenza Archeologica, Rome
BJ — Bonner Jahrbücher, Bonn, Darmstadt
BM — Burlington Magazine, London
BMBeyrouth — Bulletin du Musée de Beyrouth, Beirut
BMC — British Museum, Catalogue of Greek Coins, London
BMCEmp — H. Mattingly, Coins of the Roman Empire in the British Museum, London
BMFA — Museum of Fine Arts, Bulletin, Boston
BMFEA — Museum of Far-Eastern Antiquities, Bulletin, Stockholm
BMImp — Bullettino del Museo dell'Impero, Rome
BMMA — Bulletin of the Metropolitan Museum of Art, New York
BMN — Boletín Monumentos Navarra
BMQ — The British Museum Quarterly, London
BNedOud — Bulletin van de Koninklijke Nederlandse Oudheidkundige Bond, Leiden
BPI — Bullettino di Paletnologia Italiana, Rome
BRA — Boletín de la Real Academia de Ciencias, Bellas Letras y Nobles Artes de Córdoba, Córdoba
BRABASF — Boletín de la Real Academia de Bellas Artes de San Fernando, Madrid
BRABLB — Boletín de la Real Academia de Buenas Letras de Barcelona
BRAH — Boletín de la Real Academia de la Historia, Madrid
BrBr — H. Brunn, F. Bruckmann, Denkmäler griechischer und römischer Skulptur, Munich
Brunn, GGK — H. Brunn, Geschichte der griechischen Künstler, 2d ed., Stuttgart, 1889
Brunn, GK — H. Brunn, Griechische Kunstgeschichte, Munich, I, 1893; II, 1897
BSA — Annual of the British School at Athens, London
BSCC — Boletín de la Sociedad Castellonense de Cultura, Castellón de la Plana
BSCE — Boletín de la Sociedad Castellana de Excursiones, Valladolid
BSEAAV — Boletín del Seminario de Estudios de Arte y Arqueología, Universidad de Valladolid
BSEE — Boletín de la Sociedad Española de Excursiones, Madrid
BSEI — Bulletin de la Société des Etudes Indochinoises, Saigon
BSOAS — Bulletin of the School of Oriental and African Studies, London
BSPF — Bulletin de la Société Préhistorique Française, Paris
BSR — Papers of the British School at Rome, London
Cabrol-Leclercq — F. Cabrol, H. Leclercq, Dictionnaire d'archéologie chrétienne et de liturgie, Paris, 1907
CAF — Congrès Archéologique de France, Paris, 1841–1935
CahA — Cahiers Archéologiques, Fin de l'Antiquité et Moyen-Age, Paris
CahArt — Cahiers d'art, Paris
CAJ — Central Asiatic Journal, Wiesbaden
CAUG — Cuadernos de Arte de la Universidad de Granada
CEFEO — Cahiers de l'Ecole Française d'Extrême-Orient, Paris
CEG — Cuadernos de Estudios Gallegos, Santiago de Compostela
CIE — Corpus Inscriptionum Etruscaru, Lipsiae
CIG — Corpus Inscriptionum Graecarum, Berolini
CIL — Corpus Inscriptionum Latinarum, Berolini
CIS — Corpus Inscriptionum Semiticarum, Parisiis
Coh — H. Cohen, Description historique des Monnaies frappées sous l'Empire Romain, Paris
Collignon, SG — M. Collignon, Histoire de la sculpture grecque, Paris, I, 1892; II, 1897
Comm — Commentari, Florence, Rome
Cr — La Critica, Bari
CRAI — Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres, Paris
CrArte — La Critica d'Arte, Florence
CVA — Corpus Vasorum Antiquorum
DA — N. Daremberg, N. Saglio, Dictionnaire des antiquités grecques et romaines, Paris, 1877–1912
Dehio, I–V — G. Dehio, Handbuch der deutschen Kunstdenkmäler, Berlin, I, Mitteldeutschland, 1927; II, Nordostdeutschland, 1926; III, Süddeutschland, 1933; IV, Südwestdeutschland, 1933; V, Nordwestdeutschland, 1928
Dehio, DtK — G. Dehio, Geschichte der deutschen Kunst, 8 vols., Berlin, 1930–34
Dehio-VonBezold — G. Dehio, G. von Bezold, Die kirchliche Baukunst des Abendlandes, Stuttgart, 1892–1901
DissPontAcc — Dissertazioni della Pontificia Accademia Romana di Archeologia, Rome
EA — Photographische Einzelaufnahmen, Munich, 1893 ff.
EAA — Enciclopedia dell'Arte Antica, Rome, I, 1958; II, 1959; III, 1960; IV, 1961
EArt — Eastern Art, London
EB — Encyclopaedia Britannica
'EEBΣ — 'Επετερίς 'Εταιρεία Βυζαντινῶν Σπουδῶν Athens
'Εφημ — 'Αρχαιολογική 'Εφημερίς, Athens

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

EI — Enciclopedia Italiana, Rome, 1929 ff.
EphDR — Ephemeris Dacoromana, Rome
'Εργον — Τὸ 'έργον τῆς ἀρχαιολογικῆς ἑταιρείας, ed. A. K. Orlandos, Athens
ES — Estudios Segovianos, Segovia
ESA — Eurasia Septentrionalis Antiqua, Helsinki
Espér — E. Espérandieu, R. Lantier, Recueil général des Bas-Reliefs de la Gaule Romaine, Paris
EUC — Estudis Universitaris Catalans, Barcelona
FA — Fasti Archaeologici, Florence
FD — Fouilles de Delphes, Paris
FGrHist — F. Jacoby, Die Fragmente der Griechischen Historiker, II-III, Berlin, 1826, 1955
FGH — Fragmenta Historicorum Graecorum, ed. C. Mueller, II-IV, Parisiis, 1868
Friedländer — Max Friedländer, Altniederländische Malerei, Berlin, 1924–37
Furtwängler, AG — A. Furtwängler, Antiken Gemmen, Leipzig, Berlin, 1900
Furtwängler, BG — A. Furtwängler, Beschreibung der Glyptothek König Ludwig I zu München, Munich, 1900
Furtwängler, KlSchr — A. Furtwängler, Kleine Schriften, Munich, 1912
Furtwängler, MP — A. Furtwängler, Masterpieces of Greek Sculpture, London, 1895
Furtwängler, MW — A. Furtwängler, Meisterwerke der griechischen Plastik, Leipzig, Berlin, 1893
Furtwängler Reichhold — A. Furtwängler, K. Reichhold, Griechische Vasenmalerei, Munich
FWP — U.S. Federal Writers' Project, Works Progress Administration, Washington, D.C., 1935–1941
GBA — Gazette des Beaux-Arts, Paris
GJ — The Geographical Journal, London
HA — Handbuch der Archäologie im Rahmen des Handbuchs der Altertumswissenschaft . . . , herausgegeben von Walter Otto, Munich, 1939–53
HABS — Historic American Buildings Survey, U.S. Library of Congress, Washington, D.C.
HBr — P. Herrmann, F. Bruckmann, Denkmäler der Malerei des Altertums, Munich, 1907
Helbig-Amelung — W. Helbig, W. Amelung, E. Reisch, F. Weege, Führer durch die öffentlichen Sammlungen klassischer Altertümer in Rom, Leipzig, 1912–13
HIPBC — A Handbook for Travellers in India, Pakistan, Burma and Ceylon, London, 1955
HJAS — Harvard Journal of Asiatic Studies, Cambridge, Mass.
Hoppin, Bf — J. C. Hoppin, A Handbook of Greek Black-figured Vases with a Chapter on the Red-figured Southern Italian Vases, Paris, 1924
Hoppin, Rf — J. C. Hoppin, A Handbook of Attic Red-figured Vases Signed by or Attributed to the Various Masters of the Sixth and Fifth Centuries B.C., Cambridge, 1919
IAE — Internationales Archiv für Ethnographie, Leiden
IBAI — Bulletin de l'Institut Archéologique Bulgare, Sofia
IFAN — Institut Français Afrique Noire, Dakar
IG — Inscriptiones Graecae, Berolini
ILN — Illustrated London News, London
IPEK — Ipek, Jahrbuch für prähistorische und ethnographische Kunst, Berlin
ITTM — Instituto Tello Tellez de Meneses, Palencia
JA — Journal Asiatique, Paris
JAF — Journal of American Folklore, Lancaster, Pa.
JAOS — Journal of the American Oriental Society, Baltimore
JAS — Journal of the African Society, London
JBORS — Journal of the Bihar and Orissa Research Society, Patna, India
JdI — Jahrbuch des deutschen archäologischen Instituts, Berlin
JEA — Journal of Egyptian Archaeology, London
JhbKhSammlWien — Jahrbuch der kunsthistorischen Sammlungen in Wien, Vienna
JhbPreussKSamml — Jahrbuch der preussischen Kunstsammlungen, Berlin
JHS — Journal of Hellenic Studies, London
JIAI — Journal of Indian Art and Industry, London
JIAN — Journal International d'Archéologie Numismatique, Athens
JISOA — Journal of the India Society of Oriental Art, Calcutta
JNES — Journal of Near Eastern Studies, Chicago
JPS — Journal of the Polynesian Society, Wellington, New Zealand
JRAI — Journal of the Royal Anthropological Institute of Great Britain and Ireland, London
JRAS — Journal of the Royal Asiatic Society, London
JRS — Journal of Roman Studies, London
JS — Journal des Savants, Paris
JSA — Journal de la Société des Africanistes, Paris
JSAH — Journal of the Society of Architectural Historians, Charlottesville, Va.
JSAm — Journal de la Société des Américanistes, Paris
JSO — Journal de la Société des Océanistes, Paris
KbNed — Kunstreisboek voor Nederland, Amsterdam, 1960
Klein, GrK — W. Klein, Geschichte der griechischen Kunst, Leipzig, 1904–07
KS — Communications on the Reports and Field Research of the Institute of Material Culture, Moscow, Leningrad
Lippold, GP — G. Lippold, Die griechische Plastik (W. Otto, Handbuch der Archäologie, II, 1), Munich, 1950
Löwy, IGB — E. Löwy, Inschriften griechischer Bildhauer, Leipzig, 1885
MAAccIt — Monumenti Antichi dell'Accademia d'Italia, Milan
MAARome — Memoirs of the American Academy in Rome, Rome, New York
MAF — Mémoires de la Société Nationale des Antiquaires de France, Paris
MAGWien — Mitteilungen der anthropologischen Gesellschaft in Wien, Vienna
Mâle, I — E. Mâle, L'art religieux du XIIe siècle en France, Paris, 1928
Mâle, II — E. Mâle, L'art religieux du XIIIe siècle en France, Paris, 1925
Mâle, III — E. Mâle, L'art religieux de la fin du moyen-âge en France, Paris, 1925
Mâle, IV — E. Mâle, L'art religieux après le Concile de Trente, Paris, 1932
MALinc — Monumenti Antichi dell'Accademia dei Lincei, Milan, Rome
Mattingly-Sydenham — H. Mattingly, E. Sydenham, C. H. V. Sutherland, The Roman Imperial Coinage, London
MdI — Mitteilungen des deutschen archäologischen Instituts, Munich
MdIK — Mitteilungen des deutschen Instituts für ägyptische Altertumskunde in Kairo, Wiesbaden
Mél — Mélanges d'Archéologie et d'Histoire (Ecole Française de Rome), Paris
Mem. Junta Sup. Exc. — Memoria de la Junta Superior de Excavaciones y Antigüedades, Madrid
MemLinc — Memorie dell'Accademia dei Lincei, Rome
MGH — Monumenta Germaniae Historica, Berlin
MIA — Material and Research in Archaeology of the U.S.S.R., Moscow, Leningrad
Michel — A. Michel, Histoire de l'art depuis les premiers temps chrétiens jusqu'à nos jours, Paris, 1905–29
MInst — Monumenti dell'Instituto di Corrispondenza Archeologica, Rome
MLJ — Modern Language Journal, St. Louis, Mo.
MnbKw — Monatsberichte über Kunstwissenschaft
MPA — Monumenti della pittura antica scoperti in Italia, Rome
MPiot — Fondation Eugène Piot, Monuments et Mémoires, Paris
MPontAcc — Memorie della Pontificia Accademia Romana di Archeologia, Rome
NBACr — Nuovo Bullettino di Archeologia Cristiana, Rome
NChr — Numismatic Chronicle and Journal of the Royal Numismatic Society, London
NedKhJb — Nederlandsch Kunsthistorisch Jaarboek, 1945ff.
NedMon — De Nederlandse Monumenten van Geschiedenis en Kunst, 1911 ff.
NIFAN — Notes de l'Institut Français d'Afrique Noire, Dakar

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

NSc — Notizie degli Scavi di Antichità, Rome
OAZ — Ostasiatische Zeitschrift, Vienna
OIP — Oriental Institute Publications, Chicago
ÖJh — Jahreshefte des Österreichischen archäologischen Instituts, Vienna
ÖKT — Österreichische Kunsttopographie, Vienna
OMLeiden — Oudheidkundige Mededeelingen van het Rijksmuseum van Oudheten te Leiden, Leiden
OpA — Opuscola Archaeologica, Lund
OTNE — Old Time New England; the Bulletin of the Society for the Preservation of New England Antiquities, Boston, Massachusetts, I, 1910
OudJb — Oudheidkundig Jaarboek, Leiden
Overbeck, SQ — J. Overbeck, Die antiken Schriftquellen zur Geschichte der bildenden Künste bei den Griechen, Leipzig, 1868; reprint, Hildesheim, 1958
Oxy. Pap. — The Oxyrhynchus Papyri, by B. P. Grenfell, A. S. Hunt, H. I. Bell, et al., eds., London, 1898 ff.
ΠΑΕ — Πρακτικά τῆς ἐν Αθήναις Ἀρχαιολογικῆς Ἑταιρίας, Athens
PEQ — Palestine Exploration Quarterly, London
Perrot-Chipiez — G. Perrot, C. Chipiez, Histoire de l'art dans l'Antiquité, Paris, I, 1882; II, 1884; III, 1885; IV, 1887; V, 1890; VI, 1894; VII, 1898; VIII, 1903; IX, 1911
Pfuhl — E. Pfuhl, Malerei und Zeichnung der Griechen, Munich, 1923
PG — J. P. Migne, Patrologiae cursus completus, Series Graeca, 162 vols., with Latin trans., Paris, 1857–66.
Picard — C. Picard, Manuel d'Archéologie, La Sculpture, Paris, I, 1935; II, 1939; III, 1948; IV, 1, 1954
PL — J. P. Migne, Patrologiae cursus completus, Series Latina, 221 vols., Paris, 1844–64
PM — B. Porter and R. L. B. Moss, Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings, 7 vols., Oxford, 1927–51, 2d ed., 1960 ff.
Porter — A. Kingsley Porter, Romanesque Sculpture of the Pilgrimage Roads, Boston, 1923
Post — Charles Post, A History of Spanish Painting, 10 vols., Cambridge, Mass., 1930 ff.
ProcPrSoc — Proceedings of the Prehistoric Society, Cambridge
PSI — Pubblicazioni della Società Italiana per la ricerca dei papiri greci e latini in Egitto, Florence, 1912 ff.
RA — Revue Archéologique, Paris
RAA — Revue des Arts Asiatiques, Paris
RAAB — Revista de la Asociacion Artístico-Arqueológica Barcelonesa, Barcelona
RABM — Revista de Archivos, Bibliotecas y Museos, Madrid
RACr — Rivista di Archeologia Cristiana, Rome
RArte — Rivista d'Arte, Florence
RArts — Revue des arts, Paris
RBib — Revue Biblique, Paris
RCHS — Records of the Columbia Historical Society, Washington, D.C., I, 1897
RE — A. Pauly, G. Wissowa, Real-Encyclopädie der classischen Altertumswissenschaft, Stuttgart, 1894 ff.
REA — Revue des Etudes Anciennes, Bordeaux
REByz — Revue des Etudes Byzantines, Paris
REE — Revista des Estudios Extremesios, Badajoz
REG — Revue des Etudes Grecques, Paris
Reinach, RP — S. Reinach, Répertoire des Peintures Grecques et Romaines, Paris, 1922
Reinach, RR — S. Reinach, Répertoire des Reliefs Grecs et Romains, Paris, I, 1909; II and III, 1912
Reinach, RS — S. Reinach, Répertoire de la Statuaire Grecque et Romaine, Paris, I, 1897; II, 1, 1897; II, 2, 1898; III, 1904; IV, 1910
Reinach, RV — S. Reinach, Répertoire des Vases peints, grecs et étrusques, Paris, I, 1899; II, 1900
REL — Revue des Etudes Latines, Paris
RendAccIt — Rendiconti della R. Accademia d'Italia, Rome
RendLinc — Rendiconti dell'Accademia dei Lincei, Rome
RendNapoli — Rendiconti dell'Accademia di Archeologia di Napoli, Naples
RendPontAcc — Rendiconti della Pontificia Accademia Romana di Archeologia, Rome
RepfKw — Repertorium für Kunstwissenschaft, Berlin, Stuttgart
REthn — Revue d'Ethnographie, Paris
RhMus — Rheinisches Museum für Philologie, Frankfort on the Main
RIASA — Rivista dell'Istituto Nazionale d'Archeologia e Storia dell'Arte, Rome
RIE — Revista de Ideas Estéticas, Madrid
RIN — Rivista Italiana di Numismatica, Rome
RlDKg — Reallexicon zur deutschen Kunstgeschichte, Stuttgart, 1937 ff.
RLV — M. Ebert, Real-Lexicon der Vorgeschichte, Berlin, 1924–32
RM — Mitteilungen des deutschen archäologischen Instituts, Römische Abteilung, Berlin
RN — Revue Numismatique, Paris
RNA — Revista Nacional de Arquitectura, Madrid
Robert, SR — C. Robert, Die antiken Sarkophag-Reliefs, Berlin, 1890 ff.
Roscher — W. H. Roscher, Ausführliches Lexikon der griechischen und römischen Mythologie, Leipzig, 1884–86; 1924–37
RQ — Römische Quartalschrift, Freiburg
RScPr — Rivista di Scienze Preistoriche, Florence
RSLig — Rivista di Studi Liguri, Bordighera, Italy
RSO — Rivista degli Studi Orientali, Rome
Rumpf, MZ — A. Rumpf, Malerei und Zeichnung (W. Otto, Handbuch der Archäologie, IV, 1), Munich, 1953
RUO — Revista de la Universidad de Oviedo
SA — Soviet Archaeology, Moscow, Leningrad
SAA — Seminario de Arte Aragonés, Zaragoza
SbBerlin — Sitzungsberichte der preussischen Akademie der Wissenschaften, Berlin
SbHeidelberg — Sitzungsberichte der Akademie der Wissenschaften zu Heidelberg, Heidelberg
SbMünchen — Sitzungsberichte der bayerischen Akademie der Wissenschaften zu München, Munich
SbWien — Sitzungsberichte der Akademie der Wissenschaften in Wien, Vienna
Schlosser — J. Schlosser, La letteratura artistica, Florence, 1956
Scranton, Greek Walls — R. L. Scranton, Greek Walls, Cambridge, Mass., 1941
SEtr — Studi Etruschi, Florence
SNR — Sudan Notes and Records, Khartoum
SPA — A Survey of Persian Art, ed. A. U. Pope and P. Ackerman, Oxford, 1938
SymbOsl — Symbolae Osloenses, Oslo
Tebtunis — The Tebtunis Papyri, B. P. Grenfell, A. S. Hunt, et al., eds., London, 1902 ff.
ThB — U. Thieme, F. Becker, Künstler Lexikon, Leipzig, 1907–50
TitAM — Tituli Asiae Minoris, Vindobonae, 1901–44
TNR — Tanganyika Notes and Records, Dar-es-Salaam
Toesca, Md — P. Toesca, Il Medioevo, 2 vols., Turin, 1927
Toesca, Tr — P. Toesca, Il Trecento, Turin, 1951
TP — T'oung Pao, Leiden
UCalPAAE — University of California, Publications in American Archaeology and Ethnology, Berkeley
USMB — United States National Museum, Bulletin, Washington, D.C.
Van Marle — R. van Marle, The Development of the Italian Schools of Painting, The Hague, 1923–38
Vasari — G. Vasari, Vite, ed. Milanesi, Florence, 1878 ff. (Am. ed., trans. E. H. and E. W. Blashfield and A. A. Hopkins, 4 vols., New York, 1913)
Venturi — A. Venturi, Storia dell'Arte Italiana, Milan, 1901 ff.
VFPA — Viking Fund Publications in Anthropology, New York
Vollmer — H. Vollmer, Allgemeines Lexikon der bildenden Künstler des XX. Jahrhunderts, Leipzig, 1953
Warburg — Journal of the Warburg and Courtauld Institutes, London
Weickert, Archaische Architektur — C. Weickert, Typen der archaischen Architektur in Griechenland und Kleinasien, Augsburg, 1929
Wpr — Winckelmannsprogramm, Berlin
WürzbJ — Würzburger Jahrbücher für die Altertumswissenschaft, Würzburg
WVDOG — Wissenschaftliche Veröffentlichungen der Deutschen Orient-Gesellschaft, Leipzig, Berlin

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ZäS — Zeitschrift für ägyptische Sprache und Altertumskunde, Berlin, Leipzig
ZfAssyr — Zeitschrift für Assyriologie, Strasbourg
ZfbK — Zeitschrift für bildende Kunst, Leipzig
ZfE — Zeitschrift für Ethnologie, Berlin
ZfKg — Zeitschrift für Kunstgeschichte, Munich
ZfKw — Zeitschrift für Kunstwissenschaft, Munich
ZfN — Zeitschrift für Numismatik, Berlin
ZMG — Zeitschrift der deutschen morgenländischen Gesellschaft, Leipzig
ZSAKg — Zeitschrift für schweizerische Archäologie und Kunstgeschichte, Basel

Languages and Ethnological Descriptions

Alb. — Albanian
Am. — American
Ang. — Anglice, Anglicized
Ar. — Arabic
Arm. — Armenian
AS. — Anglo-Saxon
Bab. — Babylonian
Br. — British
Bulg. — Bulgarian
Chin. — Chinese
D. — Dutch
Dan. — Danish
Eg. — Egyptian
Eng. — English
Finn. — Finnish
Fr. — French
Ger. — German
Gr. — Greek
Heb. — Hebrew
Hung. — Hungarian
It. — Italian
Jap. — Japanese
Jav. — Javanese
Lat. — Latin
Mod. Gr. — Modern Greek
Nor. — Norwegian
Per. — Persian
Pol. — Polish
Port. — Portuguese
Rum. — Rumanian
Rus. — Russian
Skr. — Sanskrit
Sp. — Spanish
Swed. — Swedish
Yugo. — Yugoslav

Other Abbreviations (*Standard abbreviations in common usage are omitted.*)

Abh. — Abhandlungen
Acad. — Academy, Académie
Acc. — Accademia
Adm. — Administration
Ak. — Akademie
Allg. — Allgemein
Alm. — Almanacco
Amm. — Amministrazione
Ann. — Annals, Annali, Annuario, Annual, etc.
Ant. — Antiquity, Antico, Antiquaire, etc.
Anthr. — Anthropology, etc.
Antr. — Antropologia, etc.
Anz. — Anzeiger
Arch. — Architecture, Architettura, Architettonico, etc.
Archaeol. — Archaeology, etc.
Archeol. — Archeologia, Archéologie
Arqueol. — Arqueología, etc.
attrib. — attributed
Aufl. — Auflage
Aufn. — Aufnahme
B. — Bulletin, Bollettino, etc.
b. — born
Belg. — Belgian, Belga, etc.
Berl. — Berlin, Berliner
Bern. — Berner
Bib. — Bible, Biblical, Bibliothèque, etc.
Bibliog. — Bibliography, etc.
Bur. — Bureau
Byz. — Byzantine
C. — Corpus
ca. — circa
Cah. — Cahiers
Cal. — Calendar
Cap. — Capital, Capitolium
Cat. — Catalogue, Catalogo, etc.
Cath. — Cathedral
Chr. — Chronicle, Chronik
Civ. — Civiltà, Civilization, etc.
cod. — codex
col., cols. — column, columns
Coll. — Collection, Collana, Collationes, Collectanea, Collezione, etc.
Com. — Comunale
Comm. — Commentaries, Commentari, Communications, etc.
Cong. — Congress, Congresso, etc.
Cr. — Critica
Cron. — Cronaca
Cuad. — Cuadernos
Cult. — Culture, Cultura, etc.
D. — Deutsch
d. — died
Diss. — Dissertation, Dissertazione
Doc. — Documents, etc.
E. — Encyclopedia, etc.
Eccl. — Ecclesiastic, Ecclesia, etc.
Ep. — Epigraphy
Esp. — España, Español
Est. — Estudios
Et. — Etudes
Ethn. — Ethnology, Ethnography, Ethnographie, etc.
Etn. — Etnico, Etnografia, etc.
Etnol. — Etnologia
Eur. — Europe, Europa, etc.
ext. — extract
f. — für
fasc. — fascicle
Fil. — Filologia
Filos. — Filosofia, Filosofico
fol. — folio
Forsch. — Forschung, Forschungen
Gal. — Galerie
Gall. — Gallery, Galleria
Geog. — Geography, Geografia, Geographical, etc.
Giorn. — Giornale
H. — History, Histoire, etc.
hl. — heilig, heilige
Holl. — Hollandisch, etc.
Hum. — Humanity, Humana, etc.
Ill. — Illustration, Illustrato, Illustrazione, etc.
Ind. — Index, Indice, Indicatore, etc.
Inf. — Information, Informazione, etc.
Inst. — Institute, Institut, Instituto, etc.
Int. — International, etc.
Ist. — Istituto
J. — Journal
Jb. — Jaarboek
Jhb. — Jahrbuch
Jhrh. — Jahreshefte
K. — Kunst
Kat. — Katalog
Kchr. — Kunstchronik
Kg. — Kunstgeschichte
K.K. — Kaiserlich und Königlich
Kunsthist — Kunsthistorische
Kw. — Kunstwissenschaft
Lett. — Letteratura, Lettere
Lib. — Library
ling. — linguistica, lingua, etc.
Lit. — Literary, Literarische, Littéraire, etc.
Mag. — Magazine
Med. — Medieval, Medievale, etc.
Meded. — Mededeelingen
Mél. — Mélanges
Mém. — Mémoire
Mem. — Memorie, Memoirs
Min. — Minerva
Misc. — Miscellany, Miscellanea, etc.
Mit. — Mitteilungen
Mnb. — Monatsberichte
Mnbl. — Monatsblätter
Mnh. — Monatshefte

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Mod. — Modern, Moderno, etc.
Mon. — Monuments, Monumento
Münch. — München, Münchner
Mus. — Museum, Museo, Musée, Museen, etc.
Muz. — Muzeum
N. — New, Notizia, etc.
Nac. — Nacional
Nachr. — Nachrichten
Nat. — National, etc.
Naz. — Nazionale
Notit. dign. — Notitia Dignitatum
N.S. — new series
O. — Oriental, Orient, etc.
Ö. — Österreichische
obv. — obverse
öffentl. — öffentlich
Op. — Opuscolo
Pap. — Papers, Papyrus
Per. — Periodical, Periodico
Pin. — Pinacoteca, Pinakothek
Pr. — Prehistory, Preistoria, Preystori, Préhistoire
Proc. — Proceedings
Pub. — Publication, Publicación
Pubbl. — Pubblicazione
Q. — Quarterly, Quaderno
Quel. — Quellen
R. — Rivista
r — recto
r. — reigned
Racc. — Raccolta
Rass. — Rassegna
Rec. — Recueil
Recens. — Recensione
Rech. — Recherches
Rel. — Relazione
Rend. — Rendiconti
Rép. — Répertoire
Rep. — Report, Repertorio, Repertorium
Rev. — Review, Revue, etc.
Riv. — Rivista
Rl. — Reallexikon
Rom. — Roman, Romano, Romanico, etc.
rv. — reverse
S. — San, Santo, Santa (saint)
S. — Studi, Studies, etc.
Samml. — Sammlung, Sammlungen
Sc. — Science, Scienza, Scientific, etc.
Schr. — Schriften
Schw. — Schweitzer
Script. — Scriptorium
Sitzb. — Sitzungsberichte
Soc. — Social, Society, Società, Sociale, etc.
Spec. — Speculum
SS. — Saints, Sante, Santi, Santissima
St. — Saint
Sta — Santa (holy)
Ste — Sainte
Sto — Santo (holy)
Sup. — Supplement, Supplemento
s.v. — under the word
Tech. — Technical, Technology, etc.
Tecn. — Tecnica, Tecnico
Tr. — Transactions
trans. — translator, translated, etc.
Trav. — Travaux
Treas. — Treasury
u. — und
Um. — Umanesimo
Univ. — University, Università, Université, etc.
Urb. — Urban, Urbanistica
v — verso
Vat. — Vatican
Verh. — Verhandlungen, Verhandelingen
Verz. — Verzeichnis
Vf. — Verfasser
Wien. — Wiener
Yb. — Yearbook
Z. — Zeitschrift, Zeitung, etc.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

NOTES ON THE ENGLISH EDITION

Standards of Translation. Contributors to the Encyclopedia, drawn from the outstanding authorities of over 35 different countries, have written in many languages — Italian, Spanish, French, German, Russian, etc. To ensure faithful translation of the author's thought, all articles have been translated into English from the original language, checked for the accuracy of technical terms and accepted English forms of nomenclature by English and American art historians, and correlated with the final editorial work of the Italian edition for uniformity and coherence of the over-all presentation. Naturally the McGraw-Hill Book Company assumes full responsibility for the accuracy and completeness of all translations. Those articles written in English appear in the words and style of the authors, within the bounds of editorial attention to consistency and stylistic and organizational unity of the work as a whole. Article titles are in most cases parallel to those in the Italian edition, though occasionally they have been simplified, as *Dravidian Art* for *Dravidiche Correnti e Tradizioni.*

New Features. Although generally the English-language edition corresponds to the Italian version, a small number of purely editorial changes have been made in the interest of clear English-language alphabetization and occasional deletions or amplifications solely in the interest of clarity. Three major differences between the two editions do exist, however:

A considerable number of cross-references have been added in many places where it was felt that relating the subject under consideration to other pertinent articles would be of value to the reader.

A more extensive article on the Art of the Americas was projected for Volume One of the English edition with an entirely new text and many plates in black and white and color. This article was designed to give the completest possible coverage within the existing space of some 100,000 words to a subject which, because of its interest to the English-speaking public, was entrusted to a group of well-known American scholars, each expert in his respective area.

Some 300 separate short biographies have been added to the English edition to provide ready access to data on the lives, works, and critical acceptance of certain artists identified with schools, movements, and broad categories of historical development that are treated in the longer monographic articles. These articles are unillustrated, but works of the artists are represented in the plates accompanying the longer articles.

Bibliographies. The bibliographies of the original Italian edition have been amplified at times to include titles of special interest to the English-speaking world and English-language editions of works originally published in other languages.

In undertaking these adaptations of the Italian text and preparing original material for the English edition, the publisher has been aided by the generous advice and, in many cases, collaboration of the members of the Editorial Advisory Committee.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CONTRIBUTORS TO VOLUME XIV

Hélène Adhémar, Louvre, Paris
Ekrem Akurgal, University of Ankara
Elena Aladova, Director, Art Museum of the Byelorussian S.S.R., Minsk
Margherita Alosi Catelli, University of Rome
Giovanna Alvisi, Scuola Archeologica, Rome
Babken Arakelian, Director, Institute of Archaeology, Academy of Sciences of the Armenian S.S.R., Erevan
Edoardo Arslan, University of Pavia
Leopoldo Carlos Artucio, Montevideo
Yuri Aseev, Art Institute, Kiev
Rosario Assunto, University of Urbino
Giovanni Astengo, University of Turin
Levon Babaian, Armenian Art Institute, Erevan
Iozas Baršauskas, Academy of Sciences of the Lithuanian S.S.R., Kaunas
Eugenio Battisti, University of Genoa
Platon Beletski, Art Institute, Kiev
Vakhtang Beridze, Academy of Sciences of the Georgian S.S.R., Tbilisi
Aldo Bertini, University of Rome
† Louis Bezacier, Director of Studies, Ecole Française d'Extrême-Orient, Paris
H. Allen Brooks, University of Toronto
Mario Bussagli, University of Rome
Michelangelo Cagiano de Azevedo, Università Cattolica del Sacro Cuore, Milan
Ernesta Cerulli, University of Rome
Mary Chamot, Tate Gallery, London
Marco Chiarini, Florence
Victoria Contag, University of Mainz
Nydia Conti de Queiruga, University of Montevideo
Piero Corradini, University of Rome
Keppel Archibald Cameron Creswell, American University, Cairo
Valentin Denis, University of Louvain
Ruben Drampian, Armenian Art Institute, Erevan
Lidiya Durnovo, Moscow
Lorenz Eitner, University of Minnesota, Minneapolis
S. Lane Faison, Jr., Williams College, Williamstown, Mass.
Oreste Ferrari, Rome
Fernando García Esteban, University of Montevideo
Juan Antonio Gaya Nuño, Madrid
Horst Gerson, Institut voor Kunstgeschiedenis, Rijksuniversiteit, Groningen
Lloyd Goodrich, Advisory Director, Whitney Museum of American Art, New York City
A. D. Grach, Academy of Sciences of the U.S.S.R., Leningrad
Milton N. Grass, New York City
Alexander B. Griswold, Breezewood Foundation, Monkton, Md.
Vinigi L. Grottanelli, Pontificium Athenaeum Urbanianum de Propaganda Fide, Rome
Ernst J. Grube, Metropolitan Museum of Art, New York City
José Gudiol, Director, Instituto Amatller de Arte Hispánico, Barcelona; University of Barcelona
Marijana Gušic, Etnografiski Muzej, Zagreb
Madeleine Hallade, Musée Guimet, Paris
Louis Hambis, Ecole Pratique des Hautes Etudes, University of Paris
John Hayes, The London Museum, London
Wai-kam Ho, Cleveland Museum of Art, Ohio
Sergei Ivanov, Leningrad
Hans L. C. Jaffé, Amsterdam
Anatoli Kantor, Soviet Encyclopedia, Moscow
Elena Kostina, U.S.S.R. Academy of Fine Arts, Moscow
Aina Kusurgasheva, Museum of Oriental Art, Moscow
Elena Kvitnitskaya, Institute of Theory and History of Architecture, Moscow
Oliver W. Larkin, Emeritus Professor of Art, Smith College, Northampton, Mass.
Monique Lavallée, Musée du Louvre, Paris
Sherman E. Lee, Director, Cleveland Museum of Art, Ohio
Max Loehr, Harvard University, Cambridge, Mass.
Aurelio Lucchini, University of Montevideo
Arthur McComb, Boston, Mass.
Fernanda de' Maffei, Rome
Pëtr Maksimov, Institute of Theory and History of Architecture, Moscow
Roland Martin, University of Dijon
Emil Maurer, Basel
Malbagar Mendikulov, Institute of Scienfic Research on Construction Materials, Alma-Ata, Kazakh S.S.R.
Robin Middleton, Technical Editor, Architectural Design Magazine, London
Maja Miletic, Rome
Stephan Mnatsakanian, Academy of Sciences of the Armenian S.S.R., Erevan
Antonio Morassi, University of Milan
Ottavio Morisani, University of Catania
Miyeko Murase, Colombia University, New York City
German Nedoshivin, Institute of History of Art, Ministry of Culture of the U.S.S.R., Moscow
Francesco Negri Arnoldi, Rome
Grga Novak, Jugoslavenske Akademije, Zagreb
Konstantin Oganesian, Director, Office for the Preservation of Works of Art, Erevan, Armenian S.S.R.
Elizaveta Orlova, Leningrad
Rodolfo Pallucchini, University of Padua
John Pearce, Curator, Department of Properties, National Trust for Historic Preservation, Washington, D.C.
Paolo Emilio Pecorella, Florence
Gennaro Pesce, Soprintendente alla Antichità, Cagliari
Luciano Petech, University of Rome
Helmut Petri, University of Cologne
Nello Ponente, Rome
Anna Pribytkova, Institute of Theory and History of Architecture, Moscow
Antonio Priori, Rome
Galina Pugachenkova, Tashkent, Uzbek S.S.R.
Svetozar Radojčić, University of Belgrade
Robert R. Reiff, Middlebury College, Vt.
Irving Rouse, Yale University, New Haven, Conn.
Benjamin Rowland, Harvard University, Cambridge, Mass.
Eberhard Ruhmer, Munich
Aleksandr Sainian, Armenian Art Institute, Erevan
Abdul Salamzade, Academy of Sciences of the Azerbaijan S.S.R., Baku
Luigi Salerno, Calcografia Nazionale, Rome
Margaretta M. Salinger, Metropolitan Museum of Art, New York City
Roberto Salvini, University of Trieste
Heinrich J. Schmidt, Dusseldorf
Eduard F. Sekler, Vienna
Antonio Serrano, University of Córdoba, Argentina
Elizaveta Silversvan, Soviet Encyclopedia, Moscow
Shin'ichi Tani, Tokyo Geijutsu Daigaku, Tokyo

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Libby TANNENBAUM, Queens College, Flushing, N.Y.
Rita TATICCHI, Rome
Prokopi TELTEVSKI, Institute of Theory and History of Architecture, Moscow
Yu-ho TSÊNG, Honolulu
Giuseppe TUCCI, President, Istituto Italiano per il Medio ed Estremo Oriente, Rome; University of Rome
Mikael' USEINOV, Academy of Sciences of the Azerbaijan S.S.R., Baku
Vol'demar VAGA, University of Tartu, Estonian S.S.R.
Yuri VASILEV, Academy of Sciences of the Latvian S.S.R., Riga
Paolo VERZONE, Politecnico, Turin
Pëtr VOLODIN, Ministry of Culture of the U.S.S.R., Moscow
Veronica VORONINA, Institute of Theory and History of Architecture, Moscow
† Martin WEINBERGER, Institute of Fine Arts, New York University, New York City
Marcus WHIFFEN, Arizona State University, Tempe
Margaret WHINNEY, formerly, Courtauld Institute of Art, University of London
Geo WIDENGREN, University of Uppsala, Sweden
Nelson I. WU, Washington University, St. Louis, Mo.
Heinrich Wilhelm WURM, Göttingen, Germany

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ACKNOWLEDGMENTS

The Institute for Cultural Collaboration and the publishers express their thanks to the collectors and to the directors of the museums and galleries listed below for permission to reproduce works in their collections and for photographs supplied.

The Institute also acknowledges the kind permission of H. M. Queen Elizabeth II to reproduce works belonging to the Crown.

ALBI, France, Musée Toulouse-Lautrec
AMSTERDAM, V. W. van Gogh Coll.
AMSTERDAM, Rijksmuseum
AMSTERDAM, Stedelijk Museum
ANKARA, Archaeological Museum
ANTWERP, Musée Royal des Beaux-Arts
AQUILEIA, Italy, Museo Archeologico
ATAMI, Japan, Art Museum
ATHENS, Acropolis, Museum
ATHENS, Benaki Museum
ATHENS, Byzantine Museum
ATHENS, National Museum
AUGSBURG, Germany, Kunstsammlungen

BASEL, Kunstmuseum
BASEL, Museum für Völkerkunde
BAYEUX, France, Musée de la Reine Mathilde
BERLIN, Kunstgewerbemuseum
BERLIN, Kupferstichkabinett
BERLIN, Staatliche Museen
BESANÇON, France, Musée des Beaux-Arts
BIRMINGHAM, England, City Museum and Art Gallery
BOLOGNA, Galleria Davia Bargellini
BOLOGNA, Museo Civico
BOLOGNA, Museo di S. Petronio
BOLOGNA, Pinacoteca
BOSTON, Isabella Stewart Gardner Museum
BOSTON, Museum of Fine Arts
BRNO, Czechoslovakia, Moravian Museum
BRUSSELS, Musées Royaux d'Art et d'Histoire
BRUSSELS, Musée Royaux des Beaux-Arts
BUCHAREST, National Museum
BUDAPEST, Museum of Fine Arts

CÁDIZ, Spain, Museo Provincial de Bellas Artes
CAIRO, Museum of Islamic Art
CAMBRIDGE, England, Fitzwilliam Museum
CAMBRIDGE, England, University Museum of Archaeology and Ethnology
CAMBRIDGE, Mass., Peabody Museum of Archaeology and Ethnology
CHICAGO, Art Institute
CINCINNATI, Art Museum
COLOGNE, Rautenstrauch-Joest-Museum für Völkerkunde
COLOGNE, Wallraf-Richartz-Museum
COMO, Italy, Museo Civico
COPENHAGEN, Nationalmuseet

DEARBORN, Mich., Henry Ford Museum
DRESDEN, Gemäldegalerie

EDINBURGH, National Gallery of Scotland
EL ESCORIAL, near Madrid, Spain
EREVAN, Armenian S.S.R., Museum

FERRARA, Italy, Museo dell'Opera del Duomo
FERRARA, Italy, Pinacoteca
FLORENCE, Biblioteca Nazionale
FLORENCE, Coll. Contini Bonacossi
FLORENCE, Museo Archeologico
FLORENCE, Museo Bardini
FLORENCE, Museo Nazionale
FLORENCE, Museo dell'Opera del Duomo
FLORENCE, Pitti
FLORENCE, Pitti, Museo delle Carrozze
FLORENCE, Uffizi
FLORENCE, Uffizi, Gabinetto dei Disegni e Stampe
FRANKFORT ON THE MAIN, Städelsches Kunstinstitut

GENEVA, Musée d'Art et d'Histoire
GLASGOW, Art Gallery and Museum
GRANADA, Nicaragua, Colegio de Centroamérica
GRAZ, Austria, Landesmuseum Joanneum
GREENVILLE, S.C., Bob Jones University Art Gallery and Museum
GRENOBLE, France, Musée de Peinture et Sculpture

THE HAGUE, Mauritshuis
HAMBURG, Museum für Völkerkunde
HAMPTON COURT, England, Royal Colls.
HANNOVER, Germany, Landesmuseum
HANOI, Musée d'Histoire du Viet Nam
HARTFORD, Conn., Wadsworth Atheneum
HELSINKI, Kansallismuseo
HONOLULU, Hawaii, Academy of Arts

ISTANBUL, Archaeological Museums

JAPAN, Hiyoshi Coll.

KANSAS CITY, Mo., Nelson Gallery of Art and Atkins Museum
KASSEL, Germany, Staatliche Kunstsammlungen
KYOTO, National Museum
KYOTO, H. Ogawa Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

LEEUWARDEN, Netherlands, Fries Museum
LEIDEN, Rijkmuseum
LENINGRAD, Ethnographical Museum of the Peoples of the U.S.S.R.
LENINGRAD, The Hermitage
LIMA, Peru, Museo Nacional de Antropología y Arqueología
LISBON, Museum Nacional de Arte Antiga
LISBON, Museu Nacional dos Côches
LONDON, Assheton-Bennett Coll.
LONDON, British Museum
LONDON, Cunliffe Coll.
LONDON, India Office Library
LONDON, National Gallery
LONDON, Tate Gallery
LONDON, Victoria and Albert Museum
LONDON, Wallace Coll.
LYONS, Musée des Beaux-Arts
LYONS, Musée Historique des Tissus

MADRID, Instituto de Valencia de Don Juan
MADRID, Museo Arqueológico Nacional
MADRID, Prado
MEXICO CITY, Museo Nacional de Antropología
MILAN, Brera
MILAN, Castello Sforzesco
MILAN, Museo Poldi Pezzoli
MODENA, Italy, Galleria Estense
MODENA, Italy, Museo Estense
MORAVSKÁ TŘEBOVÁ, Czechoslovakia, Museum
MOSCOW, the Kremlin, Hall of Arms
MOSCOW, Scientific Research Museum of Architecture
MOSCOW, Tretyakov Gallery
MUNICH, Alte Pinakothek
MUNICH, Bayerische Staatsgemäldesammlungen
MUNICH, Bayerisches Nationalmuseum
MUNICH, Deutsches Museum
MUNICH, Schloss Nymphenburg, Marstallmuseum
MUNICH, Staatliche Antikensammlungen

NAPLES, Museo di Capodimonte
NAPLES, Museo Nazionale
NAPLES, Museo Nazionale di S. Martino
NEWCASTLE UPON TYNE, England, Laing Art Gallery
NEW DELHI, National Museum
NEW YORK, Frick Coll.
NEW YORK, Metropolitan Museum
NEW YORK, New-York Historical Society
NEW YORK, D. Selikowitz Coll.
NEW YORK, C. C. Wang Coll.
NEW YORK, H. C. Weng Coll.

OLYMPIA, Greece, Archaeological Museum
ORVIETO, Italy, Museo dell'Opera del Duomo
OSAKA, Municipal Museum, Abe Coll.
OSLO, Universitetets Oldsaksamling
OTTERLO, Netherlands, Rijksmuseum Kröller-Müller

PALERMO, Museo Nazionale Archeologico
PARIS, Coll. Densmore
PARIS, Galerie Leiris
PARIS, Institut de France
PARIS, C. T. Loo & Cie
PARIS, Louvre
PARIS, Musée des Arts Décoratifs
PARIS, Musée Cernuschi
PARIS, Musée de Cluny
PARIS, Musée de l'Ecole des Beaux-Arts
PARIS, Musée Guimet
PARIS, Musée de l'Homme
PARIS, Musée du Petit Palais
PEKING, Hui-hua-kuan
PEKING, Palace Museum
PERUGIA, Galleria Nazionale dell'Umbria
PESHAWAR, Pakistan, Museum
PHILADELPHIA, Museum of Art, Johnson Coll.
PHILADELPHIA, University Museum
PIENZA, Italy, Museo Diocesano di Arte Sacra
PRAGUE, W. Forman Coll.
PRAGUE, Kuba Coll.
PRAGUE, Náprestek Museum
PRAGUE, National Gallery

REIMS, Musée Historique et Lapidaire
RIGA, State Museum of Art of the Latvian S.S.R.
ROME, Biblioteca Casanatense
ROME, Galleria Borghese
ROME, Galleria Colonna
ROME, Galleria Doria Pamphili
ROME, Lateran Museums
ROME, Museo delle Arti e delle Tradizioni Popolari
ROME, Museo della Civiltà Romana
ROME, Museo Nazionale d'Arte Orientale
ROME, Museo Pigorini
ROME, Museo di Roma
ROME, Museo di Villa Giulia
ROME, Torlonia Coll.
ROME, Vatican Museums

SCHLESWIG, Germany, Schleswig-Holsteinisches Landesmuseum
SEATTLE, Art Museum
SETTIGNANO, Italy, Berenson Foundation
SOFIA, Bulgaria, Archaeological Museum
SPRING GREEN, Wis., Frank Lloyd Wright Foundation
STOCKHOLM, Konsthistoriska Institutionen, Stockholms Universitet
STOCKHOLM, Nordiska Museet
STOCKHOLM, Statens Etnografiska Museum
STOCKHOLM, Statens Historiska Museum

TAICHUNG, Formosa, National Palace Museum
TEHERAN, Archaeological Museum
TEHERAN, Foroughi Coll.
TERVUEREN, Belgium, Musée Royal de l'Afrique Centrale
TOKYO, Gotō Art Museum
TOKYO, M. Hinohara Coll.
TOKYO, National Commission for the Protection of Cultural Properties
TOKYO, National Museum
TOKYO, Sakai Coll.
TOKYO, Yamamoto Coll.
TREVISO, Italy, Museo Civico
TRIESTE, Italy, Museo Civico di Storia ed Arte
TURIN, Museo dell'Automobile Carlo Biscaretti di Ruffia
TURIN, Museo Civico
TURIN, Museo Egizio

UPPSALA, Sweden, University Museum

VENICE, Accademia
VENICE, Doges' Palace
VENICE, Scuola di S. Rocco
VERONA, Italy, Museo di Castelvecchio
VICENZA, Italy, Museo Civico
VICH, Spain, Museo Episcopal
VIENNA, Akademie der Bildenden Künste
VIENNA, Albertina
VIENNA, Kunsthistorisches Museum
VIENNA, Museum für Völkerkunde
VIENNA, Österreichisches Museums für Angewandte Kunst
VIENNA, Schatzkammer der Wiener Hofburg

WASHINGTON, D.C., Freer Gallery of Art
WASHINGTON, D.C., National Gallery
WINDSOR, England, Royal Colls.
WINDSOR, England, Royal Library
WOODSIDE, N.Y., H. H. Wang Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

PHOTOGRAPHIC CREDITS

The numbers refer to the plates. Those within parentheses indicate the sequence of subjects in composite plate pages. Italic numbers refer to photographs owned by the Institute for Cultural Collaboration.

Ace Photos, Sidcup, Kent, England: 317 (1)
A.C.L., Brussels: 23 (3); 27 (4); 29; 415 (2, 4)
Aereo Films and Pictorial Ltd., London: 135 (2)
Alinari, Florence: 7 (3); 13 (1); 18 (2); 20 (1); 27 (4); 28 (4); 57 (1, 2); 59 (1, 2); 60 (1, 2); 61 (2); 73; 74 (1, 2); 75; 76; 81 (2); 82; 88 (2); 89 (2); 90 (1); 94 (2); 95; 96; *97*; 99 (1); 101 (3); 107 (2); 132 (3); 182 (1, 3, 4); 273 (2); 277; 278 (2); 294 (1); 296 (2); 300 (4); 302 (1); 303 (3); 304; 311 (4); 314; 327 (2); 344 (1, 3); 345 (1); 348; 350 (2); *353*; *356*; 357; 358; 359; 370; 371 (2); 372 (1); 422 (1); 453; 458 (7); 461 (2, 7); 464 (7); 466 (2); 468 (3); *470* (3); 471 (1, 2)
Anderson, Rome: 58 (2); 80 (1); 85 (2); 86; 87 (1, 2); 88 (1); 181; 204 (2, 3); 205; 308 (2); 331; 341; 372 (2)
Annan, Glasgow: 93 (1); 188 (1); 334 (1); 399
Antikvarisk Topografiska Arkivet, Stockholm: 275 (3); 276 (1, 2)
Associazione Italia-USSR, Rome: 243 (2); 249 (1, 2); 251 (2); 253 (3); 254 (1, 2)

Balzarini, Milan: *21*; *55* (1); *77*; *83*
Basset, René, Lyons: *25* (2); *26* (1, 2)
Bayerische Staatsgemäldesammlungen, Munich: 101 (1)
Bea Photo Unit, London: 318 (2)
Bergstrom, Stockholm: *55* (2)
Biblioteca Apostolica Vaticana, Rome: *11*
Bildarchiv Foto Marburg, Marburg, Germany: 60 (1)
Binelli, E.: 317 (2)
Brisighelli, Attilio, Udine, Italy: 373 (2)
British Museum, London: 260 (1)
Brogi, Florence: 18 (1); 352 (1, 2); 354 (1); 355; 368 (2)
Busch-Hauck, Frankfort on the Main: 339 (1)

Caisse Nationale des Monuments Historiques, Paris: 99 (2); 119 (1); 130 (4); 294 (2); 344 (2); 414 (2); 459 (5)
Čestmír Síla, Prague: 106 (2)
Chicago Architectural Photographing Co., Chicago: 435
Chuzeville, M., Paris: 311 (3)
Cleveland Museum of Art, Cleveland: 397 (1)
Cohn-Wiener, New York City: 69 (2)
Cooper, A. C., London: 315; 388 (3)
Courtauld Institute, London: 465 (5)
Crea, Rome: 210; 211
Crimella, Milan: 34 (3)
Crossley, F. H., Chester, England: 465 (5)

Dandelet Photographs, San Anselmo, Calif.: 438 (1)
De Antonis, Rome: *116*; *117* (3); *221* (2); 281 (3); *286*; *291*; *320*; *324*; *336*; *340*; *459* (2); *461* (3, 8)
Department of Archaeology, Government of India, New Delhi: 461 (1); 465 (*1*, 2)
Deutsche Fotothek, Dresden: 85 (1); 345 (3)
Deutsches Archäologische Institut, Athens: 458 (4); 464 (3, 4)

Ecole Française d'Extreme-Orient, Paris: 361 (1–3); 362 (1, 2); 363 (1, 2); 364 (1, 2); 365 (1, 2); 366 (1–3); 367 (1, 2)

Fiorentini, Venice: 79 (1); 350 (1, 3)

Fleming, R. B., & Co., London: *72*; *98*; *103*; *207*; 221 (1); 222; *329*
Fotocielo, Rome: 144 (5)
Fotofast, Bologna: 460 (3)
Freeman, London: *482*
Fürbock, Graz, Austria: 299 (1)

Gabinetto Fotografico Nazionale, Rome: 129 (4); 144 (3); 335 (2); 387 (2); 464 (6)
Giraudon, Paris: 6 (2); 28 (2); 91; 119 (2); 120; 121; 122; 123; 124; 204 (1); 273 (3); 279 (1); 305 (2); 354 (2); 385; 386; 387 (1); 388 (1, 2); 400 (1); 405; 406; 407; 412; 456 (3); 457 (2); 469 (3); 470 (2); 475; 478; 479; 484 (3)
Guillen, Lima: 2 (1, 2)

Hedrich-Blessing, Chicago: 436
Hewicker, Friederich, Kaltenkirchen, Germany: 455 (6)
Hinz, Basel: 427; *428*
Hirmer Verlag, Munich: 458 (2, 5); 459 (3); 460 (4); 461 (4); 465 (3); 466 (1); 467

I.G.D.A., Novara, Italy: *330*; *413*

Johnson Wax Co., Racine, Wis.: 437 (2)

Kempter, Munich: *84*; *417*
Kersting, A. F., London: 432 (1, 2); 433 (1)
Kreyenkamp, August, Cologne: 287
Kunsthistorisches Museum, Vienna: 7 (1)

Lehnert & Landrock, Cairo: 311 (2)

MAS, Barcelona: 7 (1); 9 (3); 79 (2); 81 (1); 89 (1); 93 (2); 94 (1); 100 (1); 130 (5); 182 (2); 303 (2); 321 (2); 322 (1, 2); *323*; 325; 326 (1, 2); 327 (1); 332; 349 (2); 455 (3); 463 (4); 465 (4); 483; 484 (1)
Metropolitan Museum of Art, New York City: 69 (3); 70
Meyer, Vienna: *78* (1, 2)
Musée Guimet, Paris: 196 (2); 216
Musei Civici, Venice: 461 (6)
Museum of Modern Art, New York City: 434 (2); 436; 447 (1)

National Buildings Record, London: 431; 432 (3, 4)
Novosti Press Agency, Moscow: 217 (1–3); 218 (1–3); 219 (1–3); 220 (1, 2); 237; 238 (1, 2); 239; 240 (1, 2); 241 (1, 2); 242; 243 (1); 244 (1, 2); *245*; *246*; 247 (1–3); 248 (1, 2); 250; 251 (1); 252; 253 (1, 2); 254 (3)

Öffentliche Kunstsammlung, Basel: 188 (2); 430 (2, 3)
Orlandini, Modena, Italy: 426 (3)

Publifoto, Naples: 305 (1)

Rampazzi, Turin: *22*; *25* (1); 27 (1); 271 (1, 3)
Rossi, Venice: *66*
Royal Commission on Historical Monuments, England: 433 (2)

Sakamoto, M., Tokyo: 255; 256

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

SALCHOW, Cologne: 261 (3); 455 (1)
SAVIO, Oscar: *1* (2); *9* (1); *12*; *15*; *16*; *17* (1, 2); *35*; 36; *37*; *38* (1, 2); *39* (1, 2); *40*; *41*; *42* (1, 2); *43* (1, 2); *44*; *45*; *46*; *47*; *49* (1, 2); *64* (3); *92*; *104*; *105* (1–3); *107* (1); *202* (1, 2); *203* (1, 2); *208*; *226* (1, 2); *227* (1, 2); *269* (1, 2, 4, 5); *270* (1–3); *282* (2, 3); *283*; 284 (4); *285*; *297* (1–3); *309*; *310*; *319*; *342*; *343*; *346*; *347* (1, 2); *369* (1, 2); 371 (1, 3); *422* (2); *423*; *424*; *425* (1, 2); *426* (1, 2); *455* (5); *457* (3–5); *458* (3); 459 (4); 461 (5); 468 (1)
SCARCIA, Rome: 67 (1); 68 (1, 2); 69 (1)
SCICHILONE, Giovanni, Rome: 466 (3)
SOPRINTENDENZA ALLE ANTICHITÀ, Rome: 269 (6, 7)
SOPRINTENDENZA ALLE ANTICHITÀ DELLA CAMPANIA, Naples: 274 (1, 2); 275 (1)
SOPRINTENDENZA ALLE ANTICHITÀ-EGITTOLOGIA, Turin: 271 (1, 2); 464 (1)
SOPRINTENDENZA ALLE ANTICHITÀ D'ETRURIA, Florence: 271 (3–5)
SOPRINTENDENZA ALLE GALLERIE, Florence: 300 (1); 351; 354 (3)
SOPRINTENDENZA ALLE GALLERIE, Venice: 61 (1)
STAATLICHE KUNSTSAMMLUNGEN, Dresden: 334 (2)
STAATLICHE MUSEEN, Berlin: 10 (1); 260 (2)
STAATLICHE SCHLÖSSER UND GARTEN, Berlin: 403
STEARN'S, Cambridge, England: 186
STEDELIJK MUSEUM, Amsterdam: 288 (1)
STEINKOPF, Walter, Berlin (Dahlem): 360; 401; 404 (1)

TALIESIN ASSOCIATED ARCHITECTS, Scottsdale, Ariz.: 437 (3)
TATE GALLERY, London: 183 (2)

VIGNEAU, André, Paris: 456 (1, 2); 458 (1); 459 (1)
VILLANI, A., & FIGLI, Bologna: 368 (1); 372 (3); 373 (1); *374*; *375*; 376 (1, 2)

WEHRHEIM, G., Munich: 458 (6)
WU, Nelson, Cheshire, Conn.: 184 (1, 2)

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CONTENTS - VOLUME XIV

	Col.	Pls.
Textiles, Embroidery, and Lace	1	1–34
Thailand	37	—
Thorvaldsen, Bertel	56	—
Tibet	57	—
Tibetan Art	67	35–54
Tiepolo, Giovanni Battista, Giovanni Domenico, Lorenzo Baldissera	82	55–66
Timurid Art	97	67–72
Tino di Camaino	109	73–76
Tintoretto	112	77–88
Titian	133	89–103
Tommaso da Modena	157	104–107
Tosa School	159	108–113
Totemism	162	114–118
Toulouse-Lautrec, Henri de	168	119–124
Town Planning	172	125–180
Tragedy and the Sublime	264	181–188
Treatises	277	—
Tulunid Art	319	189–192
Tung Ch'i-ch'ang	326	193–194
Tun-huang	328	195–200
Tura, Cosmè	337	201–208
Turfan	344	209–216
Turkey	354	—
Turkic Art	438	217–220
Turner, Joseph Mallord William	452	221–225
Ugolino di Vieri	456	226–227
Ukiyo-e	458	228–236
Union of Soviet Socialist Republics	465	—
Union of Soviet Socialist Republics: Modern Movements	569	237–254
United States of America	584	—
Unkei	662	255–256
Urartu	664	257–262
Uruguay	674	—
Utamaro	680	263–268
Utensils and Tools	682	269–285
Utrillo, Maurice	692	—
Vanbrugh, Sir John	693	—
Van Gogh, Vincent	694	286–292
Vasari, Giorgio	700	—
Vehicles	701	293–319
Velázquez, Diego Rodríguez de Silva y	715	320–332
Velde, Henry van de	729	—
Venezuela	732	—
Vermeer, Jan	739	333–340
Veronese, Paolo	745	341–350
Verrocchio, Andrea del	757	351–360
Vietnam	766	—
Vietnamese Art	777	361–367
Vignola, Giacomo da	791	368–372
Viollet-le-Duc, Eugène Emmanuel	799	—
Vischer	800	—
Vitale da Bologna	802	373–376
Vitruvius	805	377–384
Vivarini	811	—
Vouet, Simon	812	385–388
Vuillard, J. Edouard	816	—
Wagner, Otto	817	—
Walpole, Horace	819	—
Wang Mêng	820	389–390
Wang Shih-min, Chien, Hui, and Yüan-ch'i	822	391–396
Wang Wei	825	397–398
Watteau, Jean Antoine	828	399–407
Weber, Max	832	—
Wêng Chêng-ming	833	408–410
West, Benjamin	835	—
Weyden, Rogier van der	836	411–417
Whistler, James Abbott McNeill	842	418–421
Wiligelmo da Modena	845	422–426
Wilson, Richard	848	—
Witte, Emanuel de	849	—
Witz, Konrad	849	427–430
Wren, Sir Christopher	853	431–433
Wright, Frank Lloyd	857	434–438
Wu Li	869	439–441
Wu Tao-tzŭ	871	442–443
Yamato-e	874	444–450
Yen Li-pên	880	451–452
Yugoslavia	882	—
Zeuxis	934	453
Zimmermann, Dominikus	936	—
Zoomorphic and Plant Representations	936	454–475
Zoroastrianism	965	476–477
Zurbarán, Francisco de	969	478–484

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

TEXTILES, EMBROIDERY, AND LACE. The art of weaving is among the most ancient of man's crafts. It passed from a strictly utilitarian phase, concerned primarily with supplying protection from the elements, to subsequent phases in which esthetic considerations conditioned the forms of production, making them parallel to those of the art activity of a given period.

The history of textiles is closely tied to that of embroidery and lace, since the latter represent, in spite of their autonomy of forms and of development, a decorative complement of textile production. The origins of embroidery are also ancient; this art, however, appears in the more developed phases of the various cultures because of its decorative character. Lace, generally representing a particularly refined esthetic expression, is a relatively modern development, having been a creation of the Italian Renaissance.

Certain specialized products of the textile arts such as tapestry and carpets (q.v.) are treated in separate articles.

SUMMARY. Introduction (col. 1). Techniques and materials (col. 5). The ethnological world (col. 6). Textiles (col. 10): *Alexandria and Byzantium; Italy; Spain; France; Germany and northern Europe; Contemporary European production; China; Japan; India; Iran; Egypt, Syria, and Asia Minor.* Embroidery (col. 25). Lace (col. 31). Folk textile arts (col. 33).

INTRODUCTION. Although early man undoubtedly possessed some knowledge of the textile art, which includes netting, wattling, basketry, the spinning of yarn, and the weaving of cloth, the major development of the art came at a fairly late date in his cultural development.

In the tropical regions where he most probably originated, the sun and the air refined the coat of coarse hair covering early man's body from head to foot and finally caused it to disappear. He later acquired the desire for artificial body covering; many reasons have been suggested for this, the major ones being the need for protection against the natural elements, the craving for adornment, and the impulse toward modesty. Animal skins served for clothing at first, but in his evolution from food gatherer to food producer with permanency of abode, man learned to cultivate grain for food and to domesticate the sheep, the goat, and the camel. Eons elapsed before he learned to spin the short fibers from the coats of these animals into a crude yarn, and contemporaneously with the use of animal fibers he learned to domesticate the wild flax grasses which he twisted into linen yarn; it is not known, however, whether animal or vegetable fibers were used first.

Flax was the most widely used vegetable fiber, but ramie, hemp, and other bast fibers were twisted into yarn and woven into fabric at a relatively early period in the history of textiles. Hemp was the most important fiber used in the northern part of the European continent; flax was the most widely used fiber in the southern part and in Egypt.

Wool was the principal fiber used for textiles in the pre-Christian era in Palestine, Syria, Babylon, Greece, and Italy. The Babylonians and Assyrians, as well as the Phoenicians, developed a comprehensive knowledge of the textile arts at the same time as the Hebrews and Egyptians, wool being their most important fiber.

The wealth of nomadic peoples was measured by the size of their flocks of sheep and goats, but sheep- and goat-herds belonged to the fifth, or lowest, order of the Egyptian people and were looked upon with contempt by the aristocracy. When the brothers of Joseph and their families went to settle in Egypt, Joseph took special care to warn them of the attitude of the Egyptians toward shepherds: "For every shepherd is an abomination to the Egyptians" (Gen. 46:34).

Cotton, called both "karpas" and "koton," was mentioned in Palestine at least as early as the time of King Solomon as being imported mainly from Egypt. In India the first mention of cotton, referred to as *karpassi*, is in the ancient Hindu Laws, or Code, of Manu (ca. 400 B.C.–A.D. 200), although archaeological findings at Mohenjo-daro indicate that cotton was known and used in that country as early as 3000 B.C.

The cotton plant has an interesting legendary history, having been variously called the "wool-bearing cotton plant," the "Scythian lamb," and the "vegetable lamb of Tartary." The ancient Chinese called it the "lamb plant," it being said the "cotton lambs" grew on shrubs, each cradled in its own downy pad. The stem of the plant was supposed to be flexible, permitting the bolls to bend down and graze on the adjacent herbiage. When all the grass within this narrow orbit had been eaten, the lambs disappeared, leaving their coats behind.

The early Greeks referred to cotton as the "fiber of wool-bearing trees." In 425 Herodotus (Book III, 106) wrote, "The wild trees in India bear for their fruit a fleece surpassing that of sheep in beauty and quality, and the natives clothe themselves in cloth made therefrom." Alexander the Great brought back from India cotton cultivators and craftsmen and settled them in Asia Minor. Pliny (*Historia naturalis*, XIX, ii, 14) wrote that Semiramis, legendary Queen of Assyria who later conquered Egypt, was the founder of many manufactories along the banks of the Nile that specialized in producing fine cotton cloths.

The antiquity of the textile art is evidenced by spindle whorls, the small, perforated, disk-shaped weights of stone or other material used as balance wheels on the spindle shafts. Spindle whorls discovered in Asian Turkistan have been dated to the era 10,000–7000 B.C. In pictorial representations of various phases of the textile art in Egypt (at Beni Hassan and at other sites) the spindle and the distaff are shown being used in spinning yarn at the time of the Middle Kingdom.

In the early spinning process the raw fiber was placed on a stick or reed (the distaff) held lightly under the left arm or thrust into a belt at the waist. A loose end of the fiber on the distaff was placed between the fingers and then rolled against the thigh until a thread was started. The spindle, to which the thread from the distaff was attached, was 1–3 ft. long and either was notched or had a small hook at one end and, for good balance, a spindle whorl at the other end. To spin yarn the spindle was twirled between the hip and the palm of the hand, during which process the thread became twisted. After the thread was sufficiently twisted the yarn was wound about the other end and the process repeated.

There are no records of the steps that occurred in the evolution of the weaving loom. However, it may be hypothesized that, having learned to make fishweirs and to wattle huts and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

baskets by interweaving vines and rushes, man adapted this process to the making of textile fabrics by similarly interweaving rows of yarn laid out on the ground in one direction with rows of yarn laid out at right angles in the other direction. Someone then realized that if he hung a log or a beam from the branches of a tree and tied the end of the yarn to this beam, he would be able to produce a much stronger fabric. Later a second, or bottom, beam was added, to which rows of warp yarn, which hung from the top beam to the bottom, were tied. Again after much time had elapsed, upright logs were added to the two sides of the beams of this crude machine and the weaving frame was the result. It was impossible, however, to weave a web larger than the frame; the last important step in the development of the loom, therefore, was the replacement of the two rigid end beams with rollers, thus making it possible, theoretically, for the weaver to weave a web of any length he wished.

No remnants of the cloth made by Neolithic man have survived; but remnants of textile fabrics dating from about 5000 B.C. have been found in Egypt in the Nile Valley areas of Fayum and Badari. These bits of fabric are of linen and are of plain weave, as were all the linens of Egypt and the East until about 2500 B.C.

Loom weights, spindle whorls, and pieces of woven linen cloth made by the people known as the lake dwellers and authenticated as dating from 4500–2500 B.C. have been found in the Swiss mountains, in the village of Robenhausen (canton of Zurich). Pieces of woolen cloth, loom weights, and a corded garment have been found in graves characteristic of the period 3500–1100 B.C. These evidences of man's skill in the textile arts during the Bronze Age have been found in England, in Jutland, in Sweden, and in the other Scandinavian countries.

In Palestine fragments of wool and linen textiles of 3000–1000 B.C. have been found at Ghassel, and needle shuttles from the same period have been found in a cave at Megidd. In Sumeria clay tablets have been found which served as account books for weavers, who seem to have been working at their trade as early as 2200 B.C.

Laws, called "sumptuary laws" and based primarily upon religious grounds, were aimed at controlling the dress of many ancient peoples, especially the Hebrews and the Egyptians. Egyptian priests were forbidden to wear a garment made of wool next to the body; no priest could enter a temple without removing any part of his attire made of wool, and wool was not used in burial garments or mummy wrappings, which were made of linen.

In the Old Testament (Deut. 22:11) "garments of mingled stuff, of woolen and cotton together" are prohibited. The garments worn by the high priest in the holy of holies were prescribed to be made of pure linen. According to Herodotus (I, 195), both the Babylonians and the Assyrians had sumptuary laws similar to those of the Hebrews and Egyptians. These also forbade the use of woolen cloth next to the body. "For their dress," he wrote, "the Assyrians wear a linen tunic. Over this they put a garment of wool."

From Babylon and Phrygia, both ancient seats of weaving, the art of embroidery spread throughout the Western world. So-called "Phrygian dresses" were made with gold fringes and sumptuous embroideries of palm leaves. The whole chiton was sometimes covered with embroidered stars or disks. Women did the embroidery as well as the weaving.

In the Mycenaean age Grecian women wore sewed and fitted dresses adorned with interwoven patterns or attached embroidered borders. From the 12th to the 10th century B.C. the Ionians used principally linen and the Dorians wool as the raw materials for their textiles. In the course of time wool became the rule for male garments throughout Greece. The maidens of Attica were obliged to weave a peplos as an offering for Athena Parthenos at the Panathenaia, which occurred every four years. To the Greeks this peplos was a symbol of the universe, hence every goddess who was credited with creative talents received a similar offering.

Byssus was commonly used for women's dresses (wool, linen, silk, and cotton were all called "byssus," but the term was properly applied only to a fine fabric made from flax). This was the material from which the famous "transparent" dresses of Amorogos were made (see COSTUME).

In the island of Britain, which stood at the limits of Western civilization before the decline of the Roman Empire, the inhabitants, having emigrated from the shores of the Thracian Bosporus, had in the course of their wanderings lost their knowledge of weaving. They covered their bodies with animal skins. The Phoenician traders and merchants who went to Britain for the tin which was so abundant on the coast of Cornwall, taught the inhabitants the technique of dressing wool and flax and the spinning of yarn for weaving coarse cloth. The Britons came to excel in the dyeing of cloth, especially in various shades of blue, for which they used a vegetable dye extracted from woad leaves. The Greek geographer Strabo (63 B.C.?–A.D. 24?) reports that the natives of what is now known as Ireland had long been acquainted with the arts of spinning yarn and weaving cloth and had probably brought this skill with them when they migrated from Gaul.

In Rome, during the period of the Republic, every wealthy household counted among its slaves weavers and tailors who made garments for their masters. The toga was made of various grades of wool and women's undergarments were made of linen, with yarns from Spain, Syria, and Egypt being preferred to those of domestic origin. Just before the beginning of the Christian Era the Romans discarded wool and linen garments in favor of imported silks. Tacitus (*Annals*, II, xxxiii, 1) records the edict of the Roman Senate, in A.D. 16, prohibiting the wearing of silk robes by men in Rome; at that time a pound of silk was sold in Rome for 12 ounces of gold, but the supply increased with the demand and the price diminished accordingly. The emperor Heliogabalus (A.D. 118–222), who came from Syria, was said to have been the first to wear garments of pure silk, for previously silk had been mixed with threads of linen or cotton. In the Edict of Diocletian, issued in Rome in A.D. 301, maximum prices were fixed throughout the Empire for all the necessities and commodities of life. The price of "genuine purple silk" was established at "about ten times that of white silk." A silk weaver received half the pay of a linen weaver, and a tailor received about 50 denarii (half the linen weaver's pay) for cutting and finishing overgarments of the finest quality.

Silk was first introduced into Greece and Rome from the interior of China almost a thousand years before the Christian Era; it had been first cultivated in China during the reign of the emperor Huang-ti (ca. 2640 B.C.). The secrets of sericulture were closely guarded, and the exportation of either silkworms or the mulberry leaves upon which they fed was strictly prohibited and punishable by death. Two Nestorian monks concealed some silkworm eggs in a hollow cane and brought them to Constantinople in A.D. 552. They gave the eggs to the emperor Justinian, who appointed a caretaker for the precious gift; in due time the eggs were hatched and the larvae were fed mulberry leaves, which had also been secretly brought from China. Thus began the history of sericulture in Byzantium and Europe.

Long before color was used in textiles Neolithic man had used color for adornment in tattooing his body. The art of dyeing textiles was well known to the ancient Egyptians, the Hebrews, and other Semitic peoples. The Egyptians used acids and salts in their dyeing processes. The threads were often dyed before they were woven into cloth; many of the Egyptian cloths were made in various patterns worked in colors on the loom. These patterns were so clear and distinct that Martial (*Epigrams*, VII, LVI) said, "They vie with the Babylonian cloths embroidered with the needle." The Phoenicians, however, were considered the most expert dyers of all the ancient peoples and were credited with having discovered the art of making purple dyes from certain mollusks found in the Mediterranean on the coast of Tyre and other nearby areas of the Phoenician shore. The word "purple" at that time described a whole series of colors in the red-blue range.

Double-dyed purple silk or woolen dresses were considered a luxury. In Rome cloth of Tyrian or Laconian origin fetched the highest prices, a pound of Tyrian-dyed wool being sold at

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1,000 denarii, while a pound of ordinary purple-dyed wool sold for much less. In Rome the wearing of the true double-dyed purple cloth remained the exclusive privilege of emperors. Women were punished for wearing double-dyed purple clothing, as was any merchant who trafficked in it.

Democritus of Ephesus (460?–362 B.C.?), in the first of his two books on the Temple of Ephesus, wrote: "And as for the violet and purple robes of the Ionais, and their saffron garments embroidered with round figures, these are known to everyone. The caps they wear on their heads are embroidered with animals. The long robe they wear, called an 'actmea,' is the most costly of all the Persian articles of dress. It is woven for the sake of firmness and strength, and is ornamented all over with golden millet grains, all the grains having knots of purple thread to fasten them in the middle" (Athenaeus, *Deipnosophistae*, XII, 525c). Pliny mentions cloth interwoven with gold thread and cloth woven entirely of gold thread, without any woolen or linen ground. The garments of Agrippa, the tunic of Heliogabalus, and those worn by Tarquinius Priscus are supposed to have been made in this manner.

According to the notions of aristocratic Romans, the plying of trades and handicrafts was beneath the dignity of the free citizen. Rome largely subsisted on the industry of thousands of slaves and freedmen who were the chief tradesmen and mechanics; the former supplied the various requirements of the households, the latter worked for payment and sold their wares in shops. Freedmen practicing the arts of spinning, weaving, and dyeing were organized and had their headquarters in the so-called "Temple of Minerva Medica" on the Aventine. They ultimately acquired great power and are considered to have been the forerunners of modern trade unions. They had statutes, rules of membership, collective and individual privileges, and widows' funds. The origins of these guilds of artisans have been traced back to the time of Numa Pompilius, second of the legendary kings of Rome, who reigned about 700 B.C.

During the late-antique period and the early Middle Ages skill in creating textiles continued to grow in what had been the Roman Empire; sericulture in particular was highly developed, and the Italian products soon surpassed those of Byzantium in excellence of manufacture. Italian looms, and especially the silk-spinning machines, were of the greatest importance in fostering the economic development of Italy during the Middle Ages.

Milton N. Grass

Techniques and materials. Structurally, textiles are plaited threads. Cloth is an interlacing of one series of threads, the warp, at right angles with another series, the weft. The weft always runs under one thread and over one or more, depending on the kind of weave, and always crosses from one selvage to the other. Depending upon weave and pattern, the warp threads are lifted by strings so that the shuttle can pass between them, and then lowered again, always in continuous alternation. The simplest weave is the plain (linen) weave, in which the weft passes over one warp thread and then under the next. In the twill weave the first weft passes over the first and second, then fifth and sixth, warp threads, and the second weft passes over the second and third, then sixth and seventh, warp threads, so that diagonal lines or ribs appear in the woven material. In the satin weave the wefts are passed over several warp threads while those passed back under are so distributed that the surface of the cloth is very tight in texture. This weave is particularly adapted for bringing out the luster of silk.

In tapestry the wefts are drawn through the warp threads with a needle, under one thread and over one or more others. But they are drawn through only in accordance with the pattern requirements, the thread then being left loose and fastened on the back. Embroidery requires a foundation weave in linen, cotton, wool, or silk into which the threads are let in various stitches (cross-stitch and stem, chain, braid, feather, and darning stitches), usually following a drawing, with a needle. The embroidery may be enriched by the application of colored cloth, metal paillettes, sequins, or beads.

Lace is an artistic plaiting of freely moving threads on one surface. Lacemaking is a relatively modern (late Renaissance) technique, but the other textile techniques are very old.

Linen seems to have been the preferred material along the Nile, cotton along the Indus; wool was used at an early date, first in a tuft-weaving, later in a loop-weaving technique, similar in effect to the pelt of an animal. Silk filaments, the noblest raw material for textiles, surpasses in length, fineness, and the ability to take dye all other textile materials. Silk thread comes from the cocoon of the larva of the bombycid moth (*Bombyx mori*). From two glands the silkworm secretes a soft substance (which hardens on contact with the air), the innumerable windings of which form a cocoon in which the caterpillar changes into a chrysalis. Reversing the process, the cocoon can be unwound like a spool into silk threads over 2000 yd. long.

An important material in textile art, the gold thread used in brocading and embroidery consisted in antiquity of a linen core wrapped with thin strips of pure gold; in the Middle Ages beaten gold leaf on gut was cut into thin strips and wrapped around a linen or silk core. In the papal inventories these gold threads were listed as *aurum battutum* or *aurum de opere cyprense*, the latter probably because the main center of production was on Cyprus. In later times the thread was gilded silver lamé with a certain percentage of copper added.

The oldest examples of textiles with an artistic intent were found in Egypt. These include a linen textile with tapestry-woven lotus flowers, a garment of Amenhotep II (18th dynasty, 1555–1350 B.C.; Cairo, Egyptian Mus.); the girdle of Ramses II (19th dynasty, 1292–1225 B.C.; Liverpool, Walker Art Gall.); and a rug from the tomb of Kha (18th dynasty; PL. 3). Paintings also testify to ancient weaving activity, as seen in the clothing of Jewish women on the walls of grave 3 in Beni Hassan (12th dynasty, 2000–1790 B.C.) as well as in textile patterns in frescoes in Crete and Tiryns (middle of the 2d millennium B.C.). The tufted kilts of the Sumerian kings (ca. 3000 B.C.) and the garments decorated with embroidery and tapestry work, such as that of King Marduk-nadinakhe of Babylon represented on a boundary stone or that of the dress of Ashurnasirpal II on the reliefs from Nimrud (both, Br. Mus.), can also be taken as documents for an ancient tradition.

Heinrich J. Schmidt

The ethnological world. While the prehistoric civilizations of Eurasia were acquainted with weaving as early as the neolithic age, as is documented by finds of spindles and spindle whorls, in ethnological cultures the agricultural peoples do not always practice this art. On the other hand, it is found in some genuine pastoral or hunting and gathering cultures, as well as in preagricultural levels of the Basket Makers (southwest North America) and the Huaca Prieta (Peru).

It seems difficult to document the diffusion of weaving from a single center of origin. An origin independent of the Old World must be postulated at least for the pre-Columbian American civilizations, while for Oceania a derivation from the cultures of southeastern and insular Asia is a highly probable hypothesis.

Unlike other techniques present in ethnological cultures, such as the preparation of tapa (q.v.) or the confection of mats and baskets (see BASKETRY), which require no special equipment, weaving requires tools which, even in their most simple and rudimentary form, are highly specialized and limited to this technique: spindles, spindle whorls, and looms — the latter with the relative equipment. Moreover, while the diffusion of plants, leaves, and cane suitable for the manufacture of plaitwork is almost universal (with the exception of arctic and desert areas), the presence of the cultivated or wild fibers and of the fleece or animal hair suitable for weaving is much more limited and, at least in a few cases, has determined the presence or absence of weaving in a given area. There are also other factors, such as climate, which in certain cases permits complete nudity or very light covering and in others, such as the Arctic, demands heavy clothing. Also determinant is the prevalent form of economy, which defines the nature of the group, and, finally and above all, there is tradition, which requires a specific type

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

of dress. With the usual exceptions, weaving appears in various stages of development among almost all the ethnological peoples having an agricultural economy, with the exception of the greater part of the Melanesian and Polynesian archipelagoes, where its absence was the result of the lack of suitable materials, the diffusion of tapa clothing, and the generally mild climate of the Pacific. In fact, the Maori of New Zealand, when faced with the harsh climate of their mountain island, invented weaving, using a type of local flax.

It is unusual to find weaving among hunting and gathering peoples or pastoral peoples. Among the former are the Tlingit of the northwest coast of North America, who were able, because of an abundant food supply (fish), to settle down with enough leisure time for the crafts. The famous Chilkat blankets (see NORTH AMERICAN CULTURES; X, PL. 360), made by a Tlingit subdivision, are woven by women on an incomplete loom with mountain-goat wool and cedar fibers. This technique is used to produce complex decorative motifs representing totemic animals and myths in the style typical of the northwest American coast. The Ainu of Japan, lesser fishermen and hunters, wove elm fibers (which did not have to be spun) or nettles on a horizontal hand loom with various peculiarities that seem to indicate its local invention. Among the pastoral peoples pelts and felt are generally preferred as the basic materials from which to make articles of clothing. However, even here there are exceptions, as among the Somali and the Galla (PL. 1; IV, PL. 90) and among the Ostyaks of Siberia.

The search for suitable materials for weaving has resulted in many fabrics that attest to man's ingenuity. These have been made from wild-plant fibers (agave used by the Mexicans, wild cotton in some of the areas of the Amazon, elm and nettle fibers among the Ainu, cedar fibers among the Chilkat, raffia in central and west-central Africa, wild flax among the Maori) in addition to those made from the more ordinary cultivated fibers.

Once the material has been obtained, it must be made into filaments and woven. Among the ethnological peoples this is generally done on a hand loom, that is, one without a foot pedal or treadle. However, the primitive state of the tools used in weaving has not been an obstacle to the production of cloth of high quality. With the simplest of looms Peruvian weavers produced some of the most elegant and perfect textiles the world has known.

Textiles were decorated in different ways, either directly on the loom, by varying the colors and fineness of the filaments of the warp and weft, or by decorating the finished material by dyeing, painting, stamping, or embroidering it.

The technique of embroidery is less diffused than weaving and is not always bound to the decoration of textiles. The Siberian peoples embroidered, often elaborately (XIII, PL. 32), clothing of felt, skin, or fur. The same is true of the fur costumes of the Eskimo (IV, PL. 8), while the Iroquois, Ojibwa, and other Indians of the eastern United States decorated not only their clothing but also cradles, saddle bags, and quivers with porcupine-quill embroidery (X, PL. 363). This type of embroidery disappeared with the arrival of the Europeans and was widely replaced by bead embroidery in which floral motifs, clearly European in derivation, were added to the traditional motifs (IV, PL. 11; X, PL. 362). In Africa excellent examples of embroidery on raffia mats, the so-called "Kasai velvets," were made by the Kuba and Bushongo tribes, using abstract motifs symbolizing clouds, grasshoppers, and various animals (see BANTU CULTURES; II, PL. 116). The designs embroidered on the "bubu" of the Hausa (see SUDANESE CULTURES) are also very fine. They correspond to local motifs and symbols, but many are clearly of Eastern derivation.

Despite their appearance, the so-called "gauzes" found fairly frequently in the funeral wrappings of the pre-Inca coastal civilizations of Peru are not lace but are made by crossing or intertwining two or more weft threads which are then fixed by a warp filament. Genuine lacemaking seems to be absent from the ethnological areas.

There was no weaving among the aborigines of Australia, but sometimes human hair was used for making belts and ornaments, employing the system of plait weaving (so-called "finger weaving"), which represents a sort of transition between plaiting and genuine weaving.

In Africa weaving reached a high technical level. Seven different types of loom are used, two of which, the so-called "Hindu" loom and that known as "Mediterranean," were undoubtedly imported. Besides the previously mentioned "velvets" of the Congo, attention should be called to the multicolor textiles of the western Sudan (Bambara, Dogon, Sarakole), often obtained with resist-dyeing methods; the Javanese batik technique (see below), diffused among the Yoruba of Nigeria; and a method of decoration peculiar to the Ashanti of Ghana, called *adinkira*. This consists of printing decorative motifs in black by means of a stamp (made from a squash) on cloth of white or unbleached cotton. These motifs each have a name, corresponding not to the object represented but rather to historical events, myths, or allegorical symbols. In Ghana, particularly among the Ashanti, the Dutch introduced silk, from which beautiful multicolor striped cloaks were made.

Among the Asian peoples on an ethnological level, weaving is sporadically practiced in Siberia — among the Goldi and the Ostyaks, for example — as well as among the Ainu of the Japanese archipelago. Among the last-mentioned people, the rich embroideries covering the textiles are of greater interest than the textiles themselves. The motifs are typical of local art but have an affinity with various Chinese decorative elements (XIII, PL. 27).

Among the "primitive" groups of India and Indochina (I, PL. 498) weaving is quite highly developed, particularly in Laos and Cambodia, without, however, arriving at the refinement and variety of Indonesian weaving (see below). In addition to the decoration of textiles on the loom with simple geometric motifs or with regular bands of multicolored borders, decoration with embroidery is fairly common. In addition, buttons, sequins, and silver ornaments are frequently applied to the cloth. In Indonesia (see INDONESIAN CULTURES) and the neighboring archipelagoes (see PHILIPPINES) weaving and textile decoration reached a high level. The production of brocades, lamé, and silks as well as the use of specific resist-dyeing techniques seems to be of Indian derivation, or at least to derive from the Hindu culture of continental Asia.

The Indonesian looms, divisible into three main types, are diffused, with local variations, in regions lying as far apart as America and Japan (the Ainu), Burma (the Karen), and Malaysia, and Micronesia. The diffusion of the three main dyeing techniques (batik, *ikat*, and *plangi*) is almost equally widespread. Batik is a Javanese term indicating a system of application of decorative motifs by dyeing the finished cloth. The parts which are not to be dyed are covered with wax or a similar moisture-resistant material. In Java, where the batik technique seems to have spread in post-Islamic times, the tjanting, a special instrument for pouring the wax, which permitted innumerable variations of the preserved motifs, was invented in the 17th century. Resist-dyeing techniques which can be traced back to the Javanese batik are widespread in Madoera and are also scattered here and there in India, Thailand, Turkistan, China, Japan, and Nigeria (the Yoruba).

Ikat, another resist-dyeing technique, was much more widely diffused. It probably penetrated Indonesia with the Dong-s'on culture. In *ikat* the resist is applied to the filaments before they are woven. There are three main variations: that in which the resist is applied only to the warp (found among the more "primitive" Indonesian groups — Batak, Dayak, Toradja, VIII, PL. 41; and the most perfect works from Sumba, VIII, PL. 40); that, found only in southern Sumatra, in which the resist is limited to the weft; and a third, with both warp and weft resist-dyed, confined to a mountain village in Bali (VIII, PL. 40). The most varied decorative motifs, geometric or figural, can be made in batik as well as *ikat*. They are often connected to religious or mythological symbolism. Outside Indonesia and Madagascar, where it was undoubtedly introduced from Indonesia, *ikat* is diffused in Mali and along the Gulf of Guinea, through Islamic contacts, as well as in pre-Columbian America.

Plangi, a word of Malay origin, is said to mean "polychrome spot" or "spot with resist." The technique is a tie-dyeing

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

method in which parts of the cloth on which isolated motifs have previously been drawn or printed are tied, thus making those parts impermeable to the dye. At present, as with *ikat* and to a lesser extent with batik, *plangi* is in decline. The diffusion of chemical dyes and European textiles has led to the decline in many places of the old traditional techniques. *Plangi* and techniques similar to it are, however, found in many places in Africa (PL. 1) and in the Americas.

In Oceania, mention should be made of New Zealand Maori weaving, which represents a local development of the plait weaving used by the Polynesian islanders to make nets. The decorative motifs are obtained directly on the fabric, either by using colored threads or by varying the number of crossings.

Weaving was widespread in pre-Columbian America from ancient times. It appears in the preagricultural archaeological levels, in the fishing cultures (Chilkat), and among the lesser agricultural peoples of Amazonia and the eastern slopes of the Andes (particularly among the Peruvian and Ecuadorian "Untana" tribes), as well as among the peoples of mixed economy and at a high level among the agricultural peoples of the Mexican-Andean civilizations.

Before the arrival of the Europeans weaving was widely practiced among the Pueblo peoples, but it gradually declined to the point of disappearing almost completely. The techniques and decorative motifs of Pueblo weaving, however, were kept alive by a neighboring people of completely different ethnic and cultural origins, the Navaho of Arizona. After the arrival of the Spaniards, who introduced sheep into the area, the Navahos were transformed from an agricultural and hunting people into sheepherders; during the 17th century they learned to weave on an incomplete vertical loom, moving from bottom to top. Their blankets, usually of the colors of the natural wools with vegetable dyes of reds and, more rarely, blues added, were decorated with prevalently geometric motifs woven into the field.

In Peru the favorable climatic conditions of the desert coast permitted the preservation of many textiles, but of the textile production of ancient Mexico nothing has remained. Sculpture and painting, however, show that the early inhabitants of Mexico and Central America had reached a high level in the textile arts, even though clothing was generally rather limited and feathers were used a great deal. The most common material was the fiber of the agave plant, which after its preparation was carded and woven on a simple girdle-back horizontal loom. Netlike fabrics as light as veils (reserved for high dignitaries) were made on these looms. The decoration, more often abstract than figural, generally indicated the rank of the wearer.

Tombs excavated in Peru have provided a great number of almost intact fabrics that were used as mummy wrappings. The finest and most varied examples are from Paracas, along the southern coast of Peru. There, beginning with the 7th century, wool (llama, alpaca, and vicuña) and cotton fabrics were produced in various techniques: tapestry and its variants, rep, twill, brocade, tubular and double textiles, gauzes, openwork fabrics, and plait-woven fabrics. The use of color in these fabrics is rich and harmonious. Particularly fine are the simple fabrics embroidered with an astonishing variety of subjects: anthropomorphous figures, monstrous and fantastic animals, birds, and reptiles. Equally noteworthy are the embroidered borders of the great funerary mantles (I, PLS. 182, 183) representing anthropomorphous figures and sometimes charming little birds in trees; these borders recall crochet in their effect. Tapestry-type textiles also come from other regions and belong to other artistic styles — Tiahuanacan and Incan from the central coast (I, PLS. 170, 172), and, from the north coast, textiles in painted cotton or decorated with feather mosaics (PL. 2; I, PL. 171; V, PL. 269), which reached a particularly high level. The same can be said for textiles of Nazca style (I, PLS. 181, 184; V, PL. 271).

An amazing variety in texture was achieved by adding supplementary warps and wefts, by changing the colors of the filaments, by mixing wool with cotton, by crossing or plaiting two or more filaments, of the warp as well as the weft (the famous "gauzes" were made in this technique), by creating decorative slits in the fabric, and by adding to the finished cloth pompons, appliqué, embroidery, painting, and small plaques of metal. Double weaves, the "pseudo-velvets," were also made. In the more primitive and archaic methods of plait weaving and crochet, belts, fringes, ornamental borders, coca bags, slings, collars, sandals, hoods, and various types of fishnets were made. Among the various embroidery stitches used, the buttonhole stitch and satin stitch can be distinguished.

The resist-dyed Peruvian textiles did not arrive at the perfection of color found in the Indonesian ones made in the same way, but taken as a whole, the pre-Columbian Peruvian textiles represent the highest achievement of the textile production of the ethnological world.

Ernesta CERULLI

TEXTILES. *Alexandria and Byzantium.* It seems proper to begin a survey of the historical development of the textile arts in the West with the last heirs of Greek culture, Alexandria and Byzantium, where East and West meet. The Egyptian city named after and founded by Alexander the Great was a citadel of Greek learning and art as well as of Christian theology. With the Copts, who adopted Christianity relatively early, Roman imperial art (q.v.) took on a unique provincial form (see PROVINCIAL STYLES) in which influences from ancient Egyptian, Syrian, and Italian art were amalgamated, but with the native Coptic style always dominant. It is often pointed out that the result of this synthesis was purely Eastern in character; and while it is true that Greek and Roman realism unquestionably gave way to the two-dimensionality of the Eastern styles, it must not be forgotten that many forms, such as the acanthus-leaf motif and the figural representations from Greek and Roman mythology, coexisted with the plant and animal ornament of the ancient Eastern cultures — the tree of life, the lotus, the ibis, the zebra, the affronted horsemen (PLS. 5, 6). Some early representations of Biblical or folk tales (Daniel in the lion's den, the shawm player) reveal stylistic advances very like those, based on late-antique art, that later appeared in Europe (see COPTIC ART; III, PLS. 449, 450, 458).

The Byzantine culture was the last legacy of the Greeks and Romans to the Western world. Under Constantine the Great Byzantium became a Christian Roman kingdom of Greek culture; it included countries of the Hellenistic East and eastern Europe, and its influence was strong in the former Greek colonial territory in southern Italy and Sicily and extended to Ravenna. Up until the sack of Constantinople by Enrico Dandolo in 1204 Venice remained completely under the influence of the metropolis on the Bosporus. For more than a thousand years, from the 4th to the 15th century, the Byzantines held off the Goths, the Huns, and Islamic invaders but at the same time formed a bridge to Europe, where Byzantine influences were particularly evident in the textile arts. Through the commerce in reliquaries costly Byzantine silks that served as corpse wrappings reached many Western church treasuries (Rome, Milan, Trier, Cologne, Aachen, and others). In the Sens Cathedral Treasury is a textile with maenads and a bowman who is being torn asunder by leopards. Another, with a Greek inscription, represents the story of Joseph. It is assumed that these textiles were woven in workshops in Alexandria, the citadel of Hellenism. Of particular importance is a purple silk (PL. 11), probably Alexandrian, in which scenes showing the Annunciation and the Nativity are enclosed in large roundels. The silk hangings of the early Christian churches, mentioned in the *Liber pontificalis romanus*, must have been like this one. A silk textile with a quadriga in Aachen (Cath. Treas.), as well as the designs of youths with victory wreaths and whips, seems to have some connection with the imperial hippodrome in Constantinople. This city became one of the largest production centers for silk textiles, an activity both important and lucrative in world commerce. The Byzantine emperors set up state workshops (*gynecaliae*) in Constantinople; most of the weavers were women. These workshops had existed in the 4th century, but it was not until Justinian's time, when the production of the raw material became possible in Byzantium, that they really flourished. When he built Hagia Sophia Justinian acquired silk fabrics for the church from Alexandria, probably intending them to serve as models for native weavers. In the early Middle Ages establish-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

ments for the weaving and diving of silk also existed in Corinth, and in 1170 Benjamin von Tudela reported that 2,000 Jewish silk weavers and purple-dyers lived in Thebes.

In Byzantine silk textiles, influences from the ancient Orient and from Iran were revived (PL. 6), with the lions of the Ishtar Gate in Babylon and the animals, such as elephants, ibexes, and lions, of the hunting scenes on the Sassanian rock tombs (Ṭāq-i-Bustān) appearing in many textiles. In Charlemagne's tomb in Aachen a silk with large elephants in circles was found, the Greek inscription thereon indicating that it was woven in the 10th century. It therefore seems plausible that Otto III, whose mother was the Byzantine Princess Theophano and who had Charlemagne's grave opened, placed it there. In the St. Anno reliquary of Siegburg Abbey and in the Heribert shrine (ca. 1170, Deutz, St. Heribert) are silks with lions in solemn procession. According to the names of the emperors (Romanus I and Basil II) in the Greek inscriptions, they must have been woven in Byzantium between 921–31 and 976–1025.

The purple-dyed silks with large single- or double-headed eagles, sometimes holding lions in their claws, were probably reserved for the emperor himself and for the highest dignitaries; but they also found their way into European countries and were used in church vestments, examples having survived in the church of Bressanone (Italy), in St. Peter (Salzburg), in St. Knud (Odense, Denmark), in St-Eusèbe (Auxerre), and in the Vich Cathedral (Spain). Shortly after the year 1000, close contacts with Asia Minor, Syria, Iraq, and Iran led to the appearance in Byzantine textiles of decorative motifs such as those that had first appeared in the stuccoes of the caliph's residence in Samarra (as forerunners of the arabesque), as well as the lively plant and animal forms of Seljuk descent. The designs of one group of these textiles, consisting of linear plant motifs enclosed in circles or pointed ovals, are so close in style to the stucco decoration of Samarra (VIII, PL. 151) that they have been considered Islamic art. The chasuble of Archbishop Willigis (d. 1011; Mainz, Cath. Treas.) is an example of these textiles. The Islamic influences of Seljuk art led to the use of a style of plant and animal ornament full of movement, which was basically foreign to the rigid style of Byzantine art.

By the 14th century Byzantine art began to exhaust itself. True damask, which probably takes its name from the city of Damascus, since such fabrics were either woven in or exported via this city, seems to have been little used, if indeed it was even introduced into Byzantine workshops.

Italy. Just as in the East the revival of the textile arts in the Middle Ages took place in former Greek and Roman areas of dominion on the Black Sea, in the West it came first to Sicily, a former Greek colony temporarily annexed to the Byzantine and Arabian dominions.

As in architecture, Byzantine and Islamic influences reached an interesting synthesis in Sicilian textiles. Beginning with the 6th century B.C. the island had belonged to the area of Greek and Roman dominion; from the 6th to the 9th century of the Christian Era it was Byzantine; from the 10th to the 11th century it was under Moslem rule; and from the 11th to the 13th century it passed from Norman to Swabian and then to Spanish domination. There was a court manufactory under the Normans in Palermo, as shown by a fragment in Hannover (Kestner-mus.) with the inscription *operatum in regio ergasterio* ("made in the royal workshop"). A silk brocade from the tomb of the Hohenstauffen emperor Henry VI (d. 1197; Br. Mus.), who married Constance, the last of the Norman princesses, clearly shows influences from Fatimid Egypt. In Sicily there was a highly developed production of borders woven in gold thread. These were exported to many towns throughout Europe.

Lucca was a particularly important textile center in the Middle Ages. Judging from early fragments such as a silk twill which was used as a lining for the chasuble of Bernardo degli Uberti (d. 1133) in Sta Trinità, Florence, binder-warp silk weaving reached its zenith in Lucca in the so-called "diasprum cloth" (a tabby cloth with a binder-warp). In 1315 the Guelphic Lucca was conquered and plundered by the Pisan Ghibellines, and many Luccan silk weavers fled to settle in Florence, Venice, Bologna, and other cities where similar silk fabrics were woven, thus complicating classification. Silk weaving was later revived in Lucca and continued into the 18th century. At the end of the Middle Ages about 3,000 looms are said to have been in operation there. In 1440 the export of 360,000 pounds of silk for a sum of 500,000 soldi is reported. Like Florence and Venice, Lucca had commercial offices in Palermo, Alexandria, Aleppo, Byzantium, and cities on the Black Sea. In addition to raw silk, silk textiles were imported from eastern Asia, Persia, Syria, and Egypt, and as a natural consequence, this led to the adoption of Islamic motifs such as the lotus, arabesques, hunting animals, Eastern mythological beasts, Arabian script, and a free arrangement of designs over the surface (PL. 7). Italian colonies in which Luccan silk merchants played an important part existed in Paris, Antwerp, Bruges, and other cities in northern Europe. Giovanni Arnolfini, representative of a silk house (Cenami?) in Lucca and revenue adviser to Philip the Good of Burgundy, was important enough to have had his wedding portrait with his wife, Giovanna Cenami, painted by Jan van Eyck (V, PL. 223).

Silk textiles from the church treasuries in Sitten (Valeriakirche) and Saint-Maurice, in Valais canton, Switzerland, as well as the many representations of silks in paintings by Tuscan (VIII, PL. 193), Sienese (IX, PLS. 336, 338, 339), German (VI, PL. 127), and Dutch (V, PLS. 278, 279) painters are important in the documentation of the early Luccan silks. In the ornamental motifs and in the representations of fabulous beasts the late Gothic tradition persevered; some patterns, such as lions next to the tree of life, were eventually copied in mosaic pavements such as that of S. Miniato al Monte (Florence). In the 17th and 18th centuries damasks were also woven in Lucca for wall coverings and other purposes.

A black-and-gold brocade from a catafalque cover in the church treasury of St. Mary of Gdańsk (Danzig) can be attributed with relative certainty to a Venetian workshop. From the early Middle Ages merchants in Venice had close rapport with Byzantium and the trade cities of Asia Minor, Iran, and Egypt, and later Marco Polo established communication with China from Venice. The silk vestments in the tomb of Cangrande I della Scala in Verona (PL. 16), like those in the church treasury of Regensburg Cathedral, of St. Mary of Gdańsk, of Stralsund, and elsewhere may well have been imported from Venice. Probably Islamic and eastern-Asian plant and animal ornament was directly taken up by the native textile art. The Italian silk weavers also partially enlarged their technical means through influences from the Near East. The "diasprum cloth" of Lucca is a double-woven textile similar in principle to the Persian textiles, and the gold brocading originally used in this type of cloth later came into more general use.

In the 15th century velvet weaving was introduced into Venice. Velvet is basically a fabric intended more or less to imitate the fur of an animal. Slackly twisted silk threads looped over a wire (*Flosseide*) were used as warp; when the wire was pulled out after the introduction of the weft, small loops remained, that, particularly when cut, gave an effect of fur. Velvet pile may vary in height, permitting a relief-like effect, which can be enriched by being "carved" (Fr., *ciselé*). In these ciselé velvets both cut and uncut pile can exist side by side. One of the oldest extant velvets is said to be that of a 14th-century choir cloak (*cappa*) in the church of Mount St. Mary, Chesterfield, England. Some early accounts seem to suggest that velvet fabrics existed in the early Middle Ages, but this was a confusion with loop-woven cloth. It is not known whether velvet weaving originated in Iran, in Turkey, or in Venice.

Just as 14th- and 15th-century silks had appeared in the paintings of European masters, so did velvet take its place in the works of such great 15th-century painters as Jan van Eyck of Bruges, Stephan Lochner of Cologne, Masaccio of Florence, and Giovanni Bellini of Venice. The Italian painters Pisanello and Jacopo Bellini made designs for silk and velvet textiles, the former in the Codex Vallardi (Louvre), the latter in his sketchbook (Br. Mus. and Louvre). One of the favorite patterns for cut velvet was the pomegranate (PL. 20), which replaced the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

once-popular lotus blossom. Venice and Florence were particularly important in velvet weaving.

Jacques de Saiges, a French pilgrim who traveled to Jerusalem via Italy in 1528, recorded that there was a thriving textile art in Florence at that time. One of the missions sent by the city of Florence to a Mameluke sultan in 1422 for the purpose of exporting wool cloth directly to Egypt (and not by way of Venice) included the great merchant Felice Brancacci, who on his return in 1423 commissioned Masolino and Masaccio to do the frescoes in the Brancacci Chapel of S. Maria del Carmine. In the 15th century Florence was already famous for artistic borders, or galloons, in which the design in gold, generally on red ground and occasionally on yellow or green, was emphasized by a light-blue edging. Faces and hands were done in white silk. These served as appliqués for ecclesiastical vestments in which the Annunciation, the Resurrection, the Assumption of the Virgin, and Christ's encounter with Mary Magdalene were favorite themes. Unquestionably influenced by contemporary painters, these themes were in turn reproduced in paintings (e.g., in Perugino's *Virgin Enthroned between Saints*, ca. 1496; Vat. Mus.).

Damask and velvet were also made in Florence. If conclusions can be drawn from the paintings of Andrea del Castagno, Domenico Veneziano, Ghirlandajo, and others, the designs were particularly fine. There is a velvet brocade in Florence (Mus. Naz.) bearing the crest of the Medici. In 1475 Pope Sixtus IV had an antependium in gold brocade with gold and silver nubs woven for the Church of St. Francis, Assisi. Probably after a design by Antonio Pollaiuolo, it shows oak leaves and scrolls surrounding the heraldic symbol of the Rovere, an oak tree, set into a field delimited by a dense oak wreath. From the 16th to the 18th century hangings of silk damask and velvet were woven in Florence, Lucca, Venice, Milan, and Genoa (PLS. 21, 22, 25). It can be assumed that a silk with the alliance arms of Beatrice d'Este and Lodovico il Moro and a velvet brocade with the crest and arms of Princess Bona of Savoy, Duchess of Milan, were made in Milan. The Venetians Giorgione, Titian, and Tintoretto were particularly fond of the textures of damask and velvet.

Despite the sack of Constantinople by the Turks and despite the transferal of world trade routes to the Atlantic as a result of the discovery of America, the Venetians, by clever dealing with the Mameluke sultans in Cairo and the Turkish sultans in Istanbul, managed to maintain some of the old trade routes to Asia Minor and Egypt. The highly prized velvet brocades from Turkey and Iran influenced the Venetian weavers, who produced charming variations on the arabesque. As in Florence, Venetian velvets decorated with trophies and other motifs were used as hangings in front of columns and occasionally were copied in stucco.

In the 17th and 18th centuries textile patterns were enriched by long feathery leaves, exotic flowers with deep calyxes, and cornucopias with blossoms. *Chinoiseries* were popular, as were patterns with strange abstract motifs. These were called "Indian carpets" and are probably to be traced to the influence of the contemporaneous Indian silk fabrics. In the meantime France had replaced Italy as the leading producer of silks.

Spain. Spain too, before its conquest by the Arabs, had been under Byzantine domination and was therefore influenced by Byzantine culture. Although the expulsion of the Arabs began in the 10th century, they kept a foothold until 1492 in the south of the peninsula, particularly in Granada. Moorish art on Spanish soil, including weaving, is purely Islamic in character. A silk textile with elephants enclosed in medallions (León, Cath. Treas.) has an Arabic inscription in Kufic script that represents it as having been woven in Baghdad, but it has been unequivocably proved to be of Spanish creation. Written sources declare that Almería produced silk textiles just as good as those woven in Persia. In a textile with lion-stranglers (PL. 7) and in another with sphinxes, influences from ancient Iran seem to have been revived. The Byzantine-Greek inheritance was also active in Spain, as can be seen in the silks with double eagles in Lyons (Mus. Historique des Tissus) and from Quedlinburg (Berlin, Staat. Mus.) and in that with harpies and peacocks in the Cathedral Treasury in Vich. After the reconquest of Spain many Arabs, including weavers, remained there. At first all these Moorish craftsmen naturally continued weaving their old patterns, changing them only gradually to fit European tastes. Silks that have come to light in the tombs of the Spanish kings in the Cistercian monastery of Las Huelgas, near Burgos, are examples of these: among them are silks and half-silks with confronted lions in roundels; and a lion on a silk brocade with decorative Kufic writing, from the tomb of María de Almenar (Las Huelgas, Mus. de las Ricas Telas), can be compared with the lions on the silk with the name of the Seljuk sultan Kaykubad in Konya (Lyons, Mus. Historique des Tissus), while others from Spanish tombs recall the lions on silks from Regensburg as well as those on Italian silks. Particularly characteristic of the Hispano-Moresque silk textiles are geometric plait-band patterns in the so-called "Alhambra" style, after corresponding stucco and tile patterns (PL. 9) in Granada. In textiles as in ceramics, relationships with Italian workshops are evident. In the 15th and 16th centuries heavy gold and velvet brocades were also produced in Spain, with the pomegranate appearing next to the typically Turkish tulips and arabesques. In the portrait by Bronzino, Eleanor of Toledo wears just such a velvet brocade dress.

Whereas in the Middle Ages silk manufactories existed in Almería, Seville, and Granada, later the most important workshops were in Valencia and Toledo. In the 18th century most of the silk textiles used in Spain were imported from France.

France. The zenith of French silk weaving was reached in the baroque period, although an "Ordenance du mestier des ouvriers de drap de soye de Paris" had existed since 1260 in Paris. The Parisian borders with simple scatter designs of leaves and flowers and the silks with simple, finely engraved drawings of animals (birds, griffins, etc.) and with leaves and flowers, particularly lilies, were favored. In 1466 King Louis XI promoted the establishment of silk manufactories in Lyons and in 1470 did the same for Tours so as to bind them more closely to the royal court. At first the manufactories employed Italian workers. The early products, up to the middle of the 17th century, were almost all copies of the Italian models from Florence and Genoa, as is evidenced by a silk of 1363 in Lyons (Mus. Historique des Tissus). The French kings — Henry II, Henry IV, whose wife Marie de Médicis had close contacts with the Italian manufacturers, and Louis XIV — contributed to the development of silk weaving through tax exemptions and other privileges. By the Edict of Nantes, 1598, Henry IV gave freedom of worship to the Huguenots, among whom there were many weavers. Under Louis XIV and his minister Colbert, who was famous for the introduction of the mercantile system, native crafts, including silk weaving, took a decided upswing. After the founding of the Manufacture Royale des Meubles de la Couronne, only nationally made furniture and silk fabrics could be obtained. The growth of exportation, aided by propaganda for French fashions, helped obtain commissions for the art trade, with the elegant court of Louis XIV serving as model for all the courts of Europe. Technical and artistic inventions contributed greatly to the consolidation of the powerful position of the French manufactories. In 1605 Claude Dangon built a loom in which the number of heddles for lifting the warp threads was raised from 800 to 2,400, thus greatly increasing the possibilities for wefts of various colors and gold brocading. The silk manufactories not only provided articles of wearing apparel but also furnished the royal French palaces with wall panels, hangings, and upholstery. While the 1665 inventory of the French Crown listed mainly brocades from Florence, Milan, and Venice, after 1667 most of the silks were obtained from Lyons.

The extremely unwise revocation of the Edict of Nantes by Louis XIV in 1685 induced many silk weavers to emigrate, particularly to England, to Holland, and to Germany. In Lyons, between 1685 and 1762, the number of weavers shrank from 12,000 to 3,000. Following technical improvements in the loom by Jacques Vaucanson and J. M. Jacquard, and with the em-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ployment of such artists as Simon Vouet, Claude Bérain, Daniel Marot, Jean Revel, Jean Pillement, and Philippe de Lasalle as designers, French silks commanded an outstanding position in the world. The painters of the period, such as Jean Antoine Watteau (PL. 406), Jean Baptiste Monnoyer, Charles Lebrun (IX, PL. 102), Hyacinth Rigaud (V, PL. 406), and François Boucher (II, PL. 334), in whose paintings the costly silk brocades appeared in their full charm, were of great importance in the development of French silks.

Exotic fusions of lotus, pomegranate, and lily, often with cornucopia-like calyxes, made their way into the patterns. Crowns and fleurs-de-lis (PL. 25) frequently appeared in silk and velvet brocade wall hangings. Particularly popular were lace patterns, drawn from the countless examples of real lace. Under Louis XV brocades continued to be used for clothing and hangings.

Daniel Marot (1663–1752), an interior decorator, took the Louis XIV style with him to Holland, where he made a thorough study of the textiles in the so-called "Indian" style, including the printed Indian calicoes imported by the Dutch East India Company. Through Jean Pillement and other artists, *chinoiseries* made their way into brocades and damasks. In 1685 the ship *Amphitrite* arrived in France with 8,000 Chinese silks, arousing the enthusiasm of Louis XIV and the Marquise de Maintenon. Madame de Pompadour, who was said to hold the greater part of the stock in the Compagnie des Indes and who greatly favored the importation of porcelains and silks from the East, is supposed not only to have contributed greatly to the diffusion of *chinoiseries* but also to have taken a personal part in the designing of these patterns in Lyons. Painted Chinese silks were often used as panels, but the *chinoiseries* are inventions of European artists, who peopled their stagelike representations of Chinese landscapes with Chinese figures (PL. 30). Jean Revel and Paul Androuet Ducerceau introduced naturalistic flowers into textile patterns as well as into other decoration, and about the middle of the 18th century these became characteristic stylistic elements in many branches of the applied arts and interior decoration. The previous geometric lozenge and wavy-line patterns were replaced by a naturalistic flow of lines. In addition to imitating lace, so-called "chenille" threads were used to give the effect of fur (said to have been done first in honor of Marie Leszczyńska, the Polish wife of Louis XV). A three-dimensional effect was sought in the flowers, fruit, butterflies, pheasants, and other animals, as well as in ribbons and bows, where previously the design had been flat. Philippe de Lasalle (1723–1803) was perhaps not incorrectly called the "painter of the loom" (PL. 26). Portraits, such as that of Catherine the Great of Russia, were woven after his designs, as were more or less historical paintings, such as the siege of Grigori Orlov, Catherine's commander in chief, and the sinking of the Turkish fleet at Çeşme. De Lasalle, who had been made a noble by Louis XVI, often used fluttering ribbons, bows, and cords with tassels in his textile patterns. Together with naturalistically painted flowers and fruits, he used birds such as the doves sacred to Venus, swans, and pheasants. In addition to his *chinoiseries* he occasionally designed figural compositions. These were not, as one would expect in the *galant* age, pastoral scenes, but portrayals of mendicant musicians and workers at the loom. Fabrics with small floral patterns (PL. 28) were also woven, primarily for men's waistcoats.

After the French Revolution the silk manufactories in Lyons were almost completely closed down. Of 14,000 looms operating there in 1787, only 3,000 remained active in 1789. As first consul, Napoleon had already taken account of the situation and had given commissions for the Tuileries to one of the chief contractors in Lyons, Perron, who had previously supplied silks for the Trianon and Fontainebleau. In 1811 Gabriel Dutillieu, of the Lyons Chamber of Commerce, informed the emperor Napoleon that half of all the looms had been shut down; 7,000 were still operable, but these also would have to be shut down if immediate possibilities for further development were not found. Napoleon personally saw to it that the higher officials of the state and court wore silk clothing. He ordered new wall paneling, curtains, and upholstery for many palaces (PL. 30). The patterns were now determined by such painters as Jacques Louis David and such architects as Charles Percier and Pierre Lafontaine. With the revived interest in the simple tectonic forms of the Greeks and the Romans, the acanthus, the laurel, the astragal wreath, and the garland returned to favor, as did the neoclassic ornament with trophies, orders, and decorations. The most successful designers were Dechazelle, Dougoure, and Jules François Bony.

The supremacy of French silk weaving was ensured by the brilliant invention of Joseph Marie Jacquard, the son of a poor weaving couple in Lyons. He constructed a completely mechanical loom which used cards punched with holes as a guide for the lifting and lowering of the warp threads (shedding). It could thus effortlessly be set for a multitude of weaves with different patterns, doing away with the drawboy and the color readers. Yet despite the progress toward technical perfection, weaving as an art did not experience a renaissance.

Germany and northern Europe. Ever since silk textiles similar to those that had been attributed to Regensburg were found in the tombs of the Spanish kings in Las Huelgas, some scholars have tended to consider all silks of this type as being of Spanish manufacture. They point out that as yet no written documentation has been found to testify that there were silk manufactories in Regensburg. A silk retable panel with the Crucifixion, St. Peter, and Bishop Heinrich II von Rotteneck (1277–96; the donor) was most probably made for the high altar of Regensburg Cathedral. It is a half-silk with a linen warp, and was therefore woven in an area where silk was not cheap. The weaving is technically so perfect that it was probably made by Italian weavers, but the design was certainly prepared by a German painter. This was not unusual, for close bonds existed between Regensburg and Venice, where, after the representatives of the city of Cologne, those of the city of Regensburg most frequently presided over the Fondaco dei Tedeschi. There was an Italian colony in Regensburg, to which the street name "Walchengasse" can apparently be traced. Bishop Wilhelm von Eichstätt is said to have summoned a weaver from Venice in 1482.

Half-silks with figural scenes seem to have been particularly popular in Regensburg. There were several: a Birth of Christ (destroyed), a Virgin surrounded by angels (Berlin, Staat. Mus.), a Virgin with St. Nicholas (Regensburg, Church of the Holy Cross), a fragment showing Alexander the Great's mythical ascension to heaven, and another with a falconer (Berlin, Staat. Mus.).

There are also indications that silk manufactories existed in Cologne, producing not only the famous Cologne borders but silks and half-silks as well. An example is the stately piece from Kloster Lüne (now in Hamburg, Mus. für Kunst und Gewerbe). The style of the drawing in this and similar fabrics is in accordance with the ornamental motifs of the Cologne goldsmiths, so a Cologne origin can hardly be questioned. A more popular type of woven woolen cloth was also produced there, examples of which are seen in paintings of the Cologne school. The patterns combined influences from Italian silks with German Gothic motifs.

In the region of the Lower Rhine and Westphalia silk weaving, and in Schleswig-Holstein, linen weaving (in Hamburg both) were revived during the baroque period. The mixed linen-and-wool fabrics of Schleswig-Holstein have an ancient tradition and, like the linen weaving of Perugia, can be counted among the noblest products of true folk art. The weaving of linen damask also flourished in Saxony and Schleswig-Holstein.

Frederick the Great introduced silk weaving into Berlin with great success, thus rendering the furnishing of his palaces independent of French silk imports. Empress Maria Theresa did much the same in Austria. In Holland and England silk weaving was advanced with the immigration of expatriate French weavers after the revocation of the Edict of Nantes. In Switzerland, where wool textiles of note were produced in the waning Middle Ages, silk textiles were produced during the baroque period, although they were limited to small forms such as ribbons and borders. In the northern and eastern European countries successful attempts to set up silk manufactories were made:

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in Sweden, which had a strong indigenous folk tradition in weaving, in Poland, and in Russia. But none of these could seriously compete in the world market, which was dominated in modern times by the silks of Lyons.

Heinrich J. Schmidt

Contemporary European production. The differences in type, technique, and decorative method that had characterized the production of the various European countries through the 18th century and part of the 19th gradually diminished. Large-scale industrialization tended to replace craft production, while greatly expanded international commerce resulted in a diffusion of expressive forms. At times the traditional taste continued in industrial production, resulting, however, in stereotyped repetitions. The Industrial Revolution greatly increased production and the diffusion of products, extending to all social classes goods that had previously been the privilege of a few. The important customers and promoters of textile production were therefore no longer the courts or an elite middle class but all levels of society.

In the 20th century the Art Nouveau movement (pl. 33) in its varied European interpretations gave life to decorative forms characterized by elegant and colorful design motifs that were reflected in textile production for both clothing and furnishings. One result of the commercialization of textile production has been that the designer has become increasingly important; he is the creator of patterns suitable for large-scale industrial production as well as of exclusive models for more limited consumption (pl. 34). The perfection of mechanical means, of chemical industries for dyeing, and of the combination of varied materials in weaving characterizes present-day textile production. Besides the traditional plant and animal fibers, many other fibers of diverse composition are used, with the synthetics predominating.

During the 18th and 19th centuries the production of silk decreased in Italy, although a minimal textile activity continued in Lombardy and in the Bourbon factories of southern Italy. In the 20th century production greatly increased, particularly in Lombardy, and especially in Como. Much the same happened in Spain. France, however, generally maintained a continuous and fertile silk production, sustained by the fashion industry. In the 20th century factories and textile studios, formerly centered around Lyons, sprang up everywhere in France.

From the 19th century on the textile industry in the United States has become increasingly important, its activity being given great impetus by the invention of synthetic fibers.

In the production of cotton Great Britain has been of great importance in modern times, particularly after the new inventions of the 18th century and their perfecting. Switzerland has a thriving industry, the cotton products also involving the manufacture of eyelet embroideries. France long preserved its artisan tradition, turning to industrialization in the late 19th century. Italy had an important center of production from the 19th century on at Intra. Cotton textiles such as hemp and linen are produced today in most of the European and extra-European countries, as are woolens.

* *

China. Legend attributes Chinese sericulture and the invention of the loom to an empress of the 3d millennium B.C. Silk did not reach Japan until the 4th century of the Christian Era. In India, too, sericulture is thought to have been introduced by a Chinese princess.

Extant Chinese silks, however, date back only to the Han dynasty (206 B.C.–A.D. 220). The earliest Chinese silk textiles come from excavations in Central Asia (Paul Pelliot in Kansu; the Kozlov expedition in Urga; Aurel Stein in Noin-ula, Outer Mongolia; and A. von Le Coq in Khocho, Turfan) as well as from finds in Palmyra attributed to the period between 200 B.C. and A.D. 300. A silk rep with stylized landscape and bird motifs in Leningrad (The Hermitage) and a silk with dragonlike animals in cloud motifs, which, like others, came to light as mummy wrappings in the cemetery of a military colony in Lo-lang, are probably most representative of the textile art of the Han dynasty. The drawing corresponds to similar motifs on cinerary urns.

During the Han dynasty, and even more notably under the T'ang dynasty, when the Chinese had sent commercial emissaries as far as the Caspian Sea and the Indus, connections existed with India and with Sassanian, and later Islamic, culture in Iran.

Chinese T'ang-dynasty silks are preserved in the Shōsōin, the Treasury of the wife of Emperor Shōmu (701–56) in the Tōdaiji in Nara, Japan, and in the Hōryūji near Nara. A woven temple banner with four royal guardians on winged steeds arranged radially around a tree of life (Tokyo, Nat. Mus.) is often cited as an example of Sassanian influence, and it certainly has in common with Sassanian silks the hunting motif and the circular fields framed by pearl bands. The royal lion hunt is unquestionably an Iranian motif. Stylistically this piece, called Shitennō, after the four kings, is clearly Chinese. A silk, also in the Shōsōin, with an advancing rooster in a circle enclosed by vines is completely Chinese in style. The same can be said for the ram (Shōsōin) on another silk (pl. 31). By comparison a textile with confronted stags from Khocho (Berlin, Mus. für Völkerkunde) unquestionably points to influences from Islamic Iran. Particular note should be taken of a woven carpet with pointed oval motifs (also in the Shōsōin): it is the earliest textile known so far in which this oval scheme that was adopted in the Middle Ages in Arabian and European textile art appears.

No silk textiles seem to have survived in China from the late T'ang to the late Sung dynasty (960–1279), but outside China itself a great number of silks have survived from the Mongol period, an era characterized by political upheavals. Many of these are preserved in European churches, where they were used in ecclesiastical vestments. The Mongols, a nomadic people of Central Asia, were united into a mighty race in the early years of the 13th century by Genghis Khan and in 1215 were called in by the Sung-dynasty lords and gradually conquered China. They went on to conquer Turkistan (ca. 1220) and other countries of western Asia, and in 1236 they invaded and conquered Russia. In 1258 Hūlāgū Khan conquered Baghdad, Iraq, and Iran, bringing to an end the Arabian Abbasside dynasty and setting up Mongolian rulers (in Baghdad, Tabriz, and other cities) whose dominion lasted until the end of the 14th century. In Syria the Mamelukes stopped the conquering Mongol hordes. A second Mongol kingdom was founded by Tamerlane (Tīmūr Lenk; 1336–1405), a descendant of Genghis Khan, in Samarkand, from where he subjugated all the Near East, with the exception of Syria and Egypt, and got a foothold in the western part of India, where, with the Moghul dynasty, the dominion of the Mongols, who had been converted to Islam, continued to the middle of the 19th century.

In 1271 Marco Polo (1254–1324) traveled with his father Nicolo and his uncle Matteo to Peking, then the residence of the Mongol emperor Kublai Khan. He remained in eastern Asia for two decades and visited many of its territories. In 1292 he returned, following a route through Persia, Iran, Iraq, Armenia, and the Black Sea to his native land. He was not, however, the first European to visit Peking; in 1258 Wilhelm van Roebrook, as he himself stated, met the goldsmith Guillaume Boucher, who had formerly had a workshop on the Grand Pont in Paris, in Peking where he was serving as goldsmith to Kublai Khan.

Following this general survey it can be stated with some certainty that the gold brocade patterned with small lotus flowers used for the dalmatic found in Perugia among the funeral vestments of Pope Benedict XI (d. 1304) is the first of the Chinese silks to reach Europe that can be precisely dated (pl. 15). This was followed by the Chinese silk brocades found in the tomb of Cangrande I della Scala (d. 1329) in Verona (pl. 16). A year prior to his death Pope Benedict XI had negotiated with the Tartar khan Gazan for a crusade against the Turks. In the 1295 inventory of the Vatican Treasury there is an entry for "panni tartarici" (Tartar fabrics). Abū'l-Fidā, a Syrian prince, stated that in 1323 he was eyewitness to the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

delivery of 700 silk textiles, on some of which the name of the Sultan was woven, to the Mameluke sultan Mohammed al-Nāṣir, the son of Ibn-Kala'un, on behalf of a Mongolian khan. In the Church of St. Mary, Gdańsk, there exists a black-and-gold brocade with Chinese dragons in the corners and pairs of parrotlike birds in medallions with the name of Mohammed al-Nāṣir in the wing joints.

Chinese silk brocades from the Mongol period are to be found in many Western church treasuries (Bern, Brandenburg, Brunswick, Danzig, Perugia, Regensburg, Stralsund). They can be superficially identified by the fact that the gold thread in the Chinese brocades consists of flat gilded leather strips, while in the Near East and Europe gold thread consisted of gold leaf beaten on a gut or silk core.

Some of these brocades with a Naskhi inscription in praise of the sultan are especially noteworthy: the gold brocade comprising a cope and dalmatic (Regensburg, Cath. Treas.) on which appear dragons and winged lions in a particularly Chinese style bears the incontestable signature of the Arabian maker — 'Abd al-Āzīz; the gold brocade in Brunswick has inscribed ornamental borders similar to the decoration of the liwan of the tomb of Tamerlane's sister (Chujuk Bika) in Samarkand.

During the period of Mongol domination in Persia and Turkistan artistic currents flowed in both directions. It is sufficient to recall the miniature brush paintings, apparently western Turkish in origin, which some scholars consider imitations of Chinese painting and others the results of a fruitful synthesis of Chinese and Persian art. The gold brocade of a cope from the Church of St. Nicholas in Stralsund (Copenhagen, Kunstindustriemus.) has winged lions and dragons in a free allover pattern characterized by plunging diagonals. Its large leaves are close in style to those on Persian fabrics, but the animals are distinctly Chinese.

Chinese damask weaving was outstanding. The dalmatic of the German coronation robes in Vienna (Schatzkammer der Wiener Hofburg) is a Chinese damask with bands of waves and ornamental cloud motifs. In addition to the free disposition of the pattern on the surface, the silks often had the so-called "pointed oval" design, formed when two vertical wavy bands or sinuous lines are shifted in relation to each other by half a length. The "pointed oval" has already been encountered as a medallionlike motif on a carpet in the Shōsōin in Nara. Thus, just as the Regensburg Chinese brocade carried the clearly legible signature of an Arabian artist (see above), this Persian textile has Chinese characters, although not incontestably identifiable, next to a clearly legible Arabian inscription. During the Mongolian period Chinese fabulous animals such as the *fêng-huang*, the *ch'i-lin*, and the *lung-ma* were used in textile patterns throughout the Islamic East. Chinese damasks, which doubtless contributed to the flourishing of the local damask weaving and the spread of the free allover pattern, have been found in Egyptian graves of the Mameluke period.

The Mongol hold in China was weakened during the Ming dynasty (1368–1644), which attempted to isolate China and to introduce the rebuilding of the Great Wall, a most implausible plan; but meanwhile, when after the sack of Constantinople the Turks sought to impede Venetian and Genoese trade with eastern Asia, the seaways to the Far East were opened by the Europeans. In 1516 the Portuguese landed in Macao, and even before the founding of the East India Company (ca. 1600) in England and Holland, Dutch merchant ships were traveling to the Far East. The Jesuit Mission begun in 1580 led to the study of Chinese language, calligraphy, and art in Europe. After the last of the Ming emperors committed suicide, the Manchu Tartars were set on the Chinese throne (1644–1912). The second emperor of the Manchu dynasty, K'ang-hsi (Shêng-tsu), was an eager and successful promoter of Chinese culture.

In 1683, Louis XIV, who had also founded an East Indian trading company, sent five Jesuits to China as royal mathematicians. At that time the first collections of Chinese porcelains began to be formed in European courts; these inspired imitations of the porcelain and adaptations of the motifs in interior decoration and textiles.

Although not much trustworthy information is available on Chinese silks of the Ming period, some studies seem to permit certain conclusions to be drawn. In 1743 T'ang Yin, the director of the Ching-tê-chên factory, believed it possible to establish that most of the Ming porcelain patterns were taken from embroidery and brocaded satins. Also in the 18th century, studies were made that seem to indicate that at the time of Emperor Chia-ching (1522–66) porcelain decoration was painted on blue, yellow, and brown-gold grounds in the manner of silk brocades, and the following motifs, similar to those on the silk brocades, were introduced: intertwined dragons, clouds, phoenixes, *ch'i-lin*, lions, mandarins, ducks, gold coins, dragons in medallions, pairs of phoenixes, peacocks, sacred storks, the *ling-chih* (mushroom of immortality), the great lion on a couch, wild geese (in clouds and with their twin nests), crested waves, the hundred flowers, phoenixes in clouds and flying through flowers, the Taoist Eight Immortals, dragons munching pearls, lions playing with embroidered balls, water lilies, and flying fish. An extant silk brocade (Berlin, Staat. Mus.) seems to indicate that this list of motifs, exaggerated as it may seem, has a basis in fact. In the same museum gold brocade with intertwined dragons in four-lobed medallions on a red flowered ground and a frieze of decorative Kufic script seems to be a Turkish or Islamic copy of such a silk brocade. Some European and American museums have silks, velvets, and damasks with lotus- or peony-blossom designs which are probably examples of the production of the Ming period.

Under the Manchus textiles became more sumptuous. In addition to pile carpets, tapestries (PL. 32) and embroideries were particularly popular. Velvets in which the drawing and light-catching qualities were enriched by the use of cut and uncut pile were greatly favored. Many of the Russian flags captured (ca. 1700) by Carl XII, King of Sweden, were of Chinese silk. A Chinese silk on which is embroidered the date 1697 is preserved in the church at Åsbo in Östergötland. The pattern consists of circles with *fêng-huang*s, cranes, and attributes of the Eight Immortals. The emperors K'ang-hsi (1662–1722), Yung-chêng (1723–35), and Ch'ien-lung (1736–95) established court silk manufactories much like the Gobelin manufactories of 18th-century Europe; some of these worked only for the court and some only for the export trade. In the Nelson Gallery of Art and the Atkins Museum in Kansas City are 70 silk garments once belonging to the imperial prince Kuo Ch'in Wang (d. 1738). Other Manchu textiles have also found their way into many museums throughout the world, but like those of the Ming period, they have been little studied.

Japan. The oldest written records of Japan date from the 6th century of our era. It was then that the Chinese introduced Buddhism to Japan; and with it art, particularly sculpture and painting, flowered. As in China, picture embroidery and tapestry work seem to have preceded painting. Perhaps conclusions about the contemporaneous textile patterns in Japan can be drawn from the representations of silk textiles that appear in later paintings and sculpture; for instance, four-lobed medallions and small lozenges with diagonals form an over-all pattern on the garment of Kichijōten, goddess of good fortune, in a hanging scroll of the Nara period (ca. 775, Yakushiji). From the 9th to the 12th century leaves and flowers in a scattered pattern were often used on the garments of statues and painted figures such as the small Shinto images from the end of the 9th century (Yakushiji). The garment of the Bodhisattva Jizō in a silk painting of the 13th century (Berlin, Staat. Mus.) consists of a magnificent brocade with large flower rosettes set in lozenge-shaped fields. The random pattern of small flowers also continued to be used, as is shown in the silk of the Daitokokuji, a work of the 14th century (Kyoto).

Many Japanese silks have been preserved in the costumes of the No theater (IV, PL. 9), which was active from the 15th century on. They were generally painted or embroidered, but some were of simple silk brocade. Particularly lovely examples of the latter are a violet-gold brocade (16th cent.) with large *kiri* blossoms made of gold paper strips (Berlin, Staat. Mus.) and a gold brocade with an allover pattern of aquatic plants and leaves (17th cent.; Met. Mus.). The Japanese textiles are dis-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tinguished by naturalistic drawing and, as far as possible in textile patterns, by asymmetrical composition. A glowing red velvet of the Edo period (1615–1867; Paris, Mus. des Arts Décoratifs) is a characteristic example.

In 1542 the Portuguese reached Japan; the Jesuits arrived in the same year. Although the Portuguese and Spaniards brought only a few art and crafts objects from Japan to Europe, the Dutch, despite Japanese attempts in the second half of the 17th century to shut themselves off from the rest of the world, were more successful in continuing trade relations.

India. Although there are countless written reports of Indian textiles (raw materials in ancient times were usually linen and cotton), neither archaeological finds nor wall paintings offer enough evidence to permit any true analysis. Striped fabrics worn by a dancer and by palace ladies in 7th-century frescoes in Cave I in Ajanta (VII, PL. 457) seem to resemble a striped cover found in Nira, which is, however, executed in the tapestry technique. But this hardly suffices to form a bridge to Indian textiles, not even to the striped ones of later centuries, which are much finer and lighter, in infinite variations, with and without borders. Up to modern times simple patterns fitted to the weaving technique, such as squares, lozenges, and zigzag bands, were preferred in cotton and silk saris and shawls. Painted fabrics, cotton dyed in a method similar to the batik technique, printed cotton, and chintz were very popular. Tīmūr, who led the second conquering wave of Mongols, is said to have transferred silk weavers from India (Delhi) and Syria to Samarkand. In the 18th century the world market is said to have been flooded with Indian silks, most of them from Cambaya, the chief port of the province of Gujarat. Most probably almost all Indian stuffs found throughout Europe since the 17th century were actually Indian in origin, even though there is good reason to suppose that many such fabrics were copied in Venice and some probably in Spain. The ban on imports of Indian silks by some European countries, England among them, is indicative of the extent of the Indian silk trade. As a member of a legation sent by Duke Frederick III of Schleswig-Holstein to Shah Ṣafi of Persia in 1637, Adam Olearius established that some of the Indian silks were superior to the Persian ones. Johann Albrecht von Mandelsloh, one of Frederick III's pages, independently traveled from Isfahan to India, where he saw the silk manufactories in Amadabad and listed the textiles prepared there. J. Savary de Brûlons, inspector general for Paris customs in the 18th century, in his dictionary of the silk trade defined *furie* as painted silks which came from China or India to be copied in Europe; their patterns were so confused that it was supposed they had been designed by a fury. The close similarity of individual motifs to those of the unquestionably Indian calico prints is the best proof that these heavy silk brocades, with brocading threads of almost pure silver, were actually the products of Indian manufactories.

The weaving centers of Burma, Cambodia, and Siam also deserve attention. In Burma the favorite patterns were stripes, both straight and wavy. In Cambodia and Siam, the textiles were often woven in predetermined sizes with field and borders, similar to a carpet in form. Striped patterns, some with animals (lions, buffalo, elephants, and horses) in rows, were made in both cotton and silk. The Shan, in the east of Burma, were particularly active in silk weaving. Heavy gold brocades were woven in Siam, light ones in Cambodia. Many decorative forms in the applied arts of these countries, especially lacquer and niello work, seem to be derived from textiles. In Indonesia (Java) silk weaving was introduced from southern India. But the art of batik, which also came from India, underwent a greater development. It is attested to since 1275.

Iran. Like carpet weaving, silk weaving reached a high point of perfection in Iran. The textile arts, probably in the form of tapestry weaving, were particularly important in ancient Iran, as indicated by the architectural sculpture in Persepolis and Susa. The earliest evidence of Iranian silk weaving is from the Sassanian period (226–637). This dynasty was aware of Iran's key position between East and West and made a place for itself in the silk trade, raising silk weaving to such a high level that a Chinese traveler, Hsüan-tsang, who sojourned in Afghanistan at the beginning of the 7th century, greatly praised the art of the Persian weaver.

The garments of the Sassanian kings and their courtiers represented in the rock reliefs of Tāq-i-Bustān serve to identify surviving silks, especially the silk with the Sassanian dragon — the senmurv (Vict. and Alb.). Some of these silks, which probably reached European church treasuries in the early Middle Ages as reliquary wrappings, represent Sassanian kings hunting next to the tree of life; two are in Berlin (Staat. Mus.), one of which came from the Trier Cathedral Treasury and the other from St. Ursula in Cologne. A third, from St. Kunibert in Cologne, is now in the Diözesan-Museum there. The Sassanian kings Shāpur II (310–79) and Kavādh I (488–96) brought Syrian weavers, who were considered particularly skilled, to Persia. This would explain the occurrence of silks with representations of Persian kings and plant ornament of a late-antique type, as in the handsome piece of this kind from St. Kunibert in Cologne. Fragments of this cloth are in S. Ambrogio, Milan, and in Prague (Cath. Treas.). Sassanian silks such as those with senmurvs, hunting scenes, roosters, guinea hens (PLS. 5, 7), and ducks in roundels greatly influenced Byzantine, Chinese, Arabian, and even Spanish designs.

After the Arabian conquest of Iran a change in style gradually took place. The manufactories in ancient Iranian territories such as Tustar in Khuzistan probably held fast to the old Sassanian forms for a long time, but eventually the feeling for organic form was replaced by a tendency toward abstract stylization. The Arabian script adopted by all the peoples subjugated to Islam — who usually, however, retained their own languages — played an important part in the decoration of architecture and the applied arts. A silk from St-Josse-sur-mer, near Calais (now, Louvre), with a Kufic inscription datable to the 10th century, invites comparison with the silk with elephants from the tomb of Charlemagne (Aachen) in order to pinpoint the change in style. Even Byzantine art, rigidly frozen in comparison to Greek art, still revealed something of organic life; but the early Islamic images stiffened into signs and hieroglyphs. In addition to the ancient Iranian weaving manufactories in Khuzistan there were also some in Baghdad, where the Buyids, descendants of the Sassanians and stewards of the Abbasside caliphs, determined trade and traffic and also set up the textile manufactories called *ṭirāz*. These workshops also wove the so-called *khil'at*, a garment which was presented by the ruler or other dignitary to particularly trustworthy followers as a sign of distinction. On the whole only the inscriptions worked in silk have remained intact, but these often name the ruler and the place and date of manufacture and are therefore important documents for the study of textiles.

As in Byzantium, textiles with eagles also existed here, but the griffin motif was much more common. The inheritance of the ancient East and of Greek antiquity was revived in designs showing fabulous beasts such as griffins, winged lions, sphinxes, and harpies. The silks from graves in Rayy (PL. 9) are particularly interesting, but unfortunately the excavations were not carried out systematically, thus precluding any certain dating. Rayy was destroyed by the Mongols in the 13th century, so the textiles must have been executed prior to that date. The artistic double weaves with a different pattern on each side testify to the high technical and artistic perfection achieved. There were also satin twills and damasks.

During the Mongol rule Chinese fabulous beasts such as the phoenix and the *ch'i-lin* appeared in 14th- and 15th-century Iranian textile patterns, but they were so thoroughly assimilated that the Iranian character of the work remained dominant. Examples are the garments of Cangrande I della Scala in Verona, the burial garment of Duke Rudolph IV of Hapsburg (1358–65) in Vienna, and many other brocades which were later transformed into church vestments. A comparison of the noble silver brocade with depiction of the *ch'i-lin* in lozenges (Berlin, Staat. Mus.) and another with *fêng-huang*s (Vict. and Alb.) with Persian miniatures leaves no doubt as to their Iranian provenance.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

In the beginning of the 16th century a native dynasty, the Safavid (1502–1736), again came to the Iranian throne. First in the residence at Tabriz, then in Qazvin, and finally under Shāh 'Abbās I (1578–1628) in Isfahan, Persian art, including pile carpets and silk weaving, reached its zenith. Like the Persian carpets, costly silk and velvet brocades were in great demand in the European courts. In 1600 Fetty Beg presented in the name of Shāh 'Abbās a velvet brocade with a representation of the Virgin and Child (Venice, Mus. Correr) to the Doge of Venice, Marino Grimani (1595–1605).

Mention has already been made of the trip Adam Olearius, who translated the *Gulistān* (Rose Garden) of the poet Sa'dī (d. 1291) into German, made to Persia with an embassy sent by Duke Frederick III of Schleswig-Holstein. In addition to Persian ceramics and other magnificent objects, he brought back costly velvet brocades, which in 1817 were taken to Rosenborg Castle in Denmark, where they were used as wall hangings. Louis XIV also bought Persian velvet brocades. The French traveler J. Chardin stated that he had seen silk manufactories in Yezd, Kashan, and Isfahan. They also existed in Resht, Tabriz, and Meshed.

Some silk and velvet textiles have artists' signatures (Mu'izz ud-Dīn, 'Abd-Allāh, Agā Maḥmād, Shāfī 'Abbāsī, son of the important miniature painter Rizā-i-'Abbāsī). As in miniature painting, old Iranian legends were represented in textiles: Alexander's battle with the dragon, Laylā and Majnūn, Rustam's battle with the lion. There was also a kind of genre scene representing falconers, fishermen, cupbearers, hermits, and others. That these velvets with figural scenes were also used for garments is shown in a portrait of Robert Shirley by Anton van Dyck (Midhurst, Sussex, Petworth Coll.). Silks were also woven for use as tomb covers (such as those for the shrine of Shah Süleyman in Meshed with the date 1669), as prayer carpets (such as those for the shrine of Sheik Safī in Ardebil; XIII, PL. 423), and as carpets and banners.

In the 18th century the patterns became simpler, consisting generally of flowers arranged in rows or set in lozenges.

Egypt, Syria, and Asia Minor. The oldest datable Arabian linen textile is the turban of a certain Samuel ibn-Musa, probably a Jew, with an inscription worked in wool and an ornamental band (8th cent.; Cairo, Arabic Mus.). Another early piece is a linen textile (Vict. and Alb.) with a Kufic inscription and the name of the Ja'far-billah, who is said to have lived at the time of Caliph Narwān II (744–50). Its clearly Kufic *ductus* makes it an important incunabulum of Arabian script. Under the Abbassides in Baghdad and the Fatimids in Cairo linen weaving with embroidered or tapestry-worked silk inscriptions flourished, and all forms of Arabian epigraphy — simple, cuneiform, uncial, and Kufic — flowered. Many of the *ṭirāz* workshops existed in Shata, Tinnis, and elsewhere in Egypt, and in Iraq and Iran (Baghdad, Merv, Nishapur). Ernst Kühnel and L. Bollinger (1952) have compiled a corpus of the *ṭirāz* textiles with inscriptions, and, together with Etienne Combe and Gaston Wiet (1930), initiated the study of Arabian paleography. The Prophet Mohammed disapproved of silk as being a luxury, but notwithstanding, silk weaving flourished in all Islamic countries.

Some Egyptian silk textiles were directly related to Coptic textiles; others, such as those with falcons, seem to continue the ancient Egyptian tradition of motifs. Influences from the *opus sectile* or *opus alexandrinum* can be established in the patterns of a third group.

The Egyptian workshops seem to have continued operating under the Mamelukes. Sultan Ḥasan is said to have distributed many robes of honor from workshops in Alexandria, Cairo, and Damascus. Of the silks, some with peacocks in lozenges are noteworthy because of their similarity to patterns on ceramics found in Fostat. Stripes, with or without inscriptions and animal and plant ornamentation, were especially popular (PL. 9), and almost all of them bore inscriptions in the Naskhi script, generally eulogies to the reigning Mameluke sultan. These silks with inscriptions were exported to Italy, where many Italian painters and sculptors used them as models in their paintings (cf. PL. 360; II, PLS. 250, 257; VI, PLS. 85, 87).

The Mameluke weavers were particularly noted for their superb damasks, whose patterns were created not by differences in color but by the light-catching quality of the varying weaves. Egyptian graves in Drunka, near Assiut, have yielded damasks with inscriptions referring to the Mameluke sultan Muḥammad al-Nāṣir as well as Chinese fabrics with a freely designed chrysanthemum pattern, which certainly influenced Egyptian textiles. The Chinese fabulous beasts, although less popular in Egypt and in Syria, where the Mongol hordes were turned back, were gradually adopted in textiles. On the whole, however, characteristically Egyptian animal ornament (griffins, cheetahs, rabbits, fish, peacocks, hawks) dominated.

A gold brocade in a damasklike weave was used by the Florentine Master of the Bambino Vispo as a model for the dress material of the Madonna in Würzburg (Martin von Wagner Mus.). Although no ruler is named in the inscription, the reference to "al-Ashraf" (the glorious) led to the conclusion that it was woven under the Mameluke sultan Qāit Bey, who reigned in the second half of the 15th century; but it was later learned that the Master of the Bambino Vispo worked in the first half of the 15th century. Thus this painting, like many others, is a good example of the importance of painting in the dating of textiles. Jacopo Bellini was also influenced by Mameluke damasks, both as models in his paintings (II, PL. 250) and in the textile patterns he designed for Italian weavers.

The damasks of the Mameluke period are usually made in the following weaves: warp satin for the drawing and weft satin for the ground, or vice versa; warp twill and weft twill; warp satin or warp twill for the drawing and taffeta weave for the ground.

The Arabian geographer Idrisi (1098–1164), who lived for a long time at the court of Roger II in Sicily and then in Moorish Spain, made note of the manufactories in Syria producing damask, which took its name from the city of Damascus. Yet the history of Syrian silk weaving properly begins in late antiquity. The late-antique silk with a Persian hunting scene (Cologne, Diözesan-Mus.; Milan, S. Ambrogio) was copied after the Arabian conquest, with an Arabian inscription in Kufic script. Syria was then temporarily reincorporated into the Byzantine kingdom under the emperor Nicephoros II Phocas (963–69). In the meantime the Syrian silk weavers seem to have adopted the Arabian decorative style, which came from the caliphate of Samarra, near Baghdad. There is much evidence that the so-called "pseudo-damasks" with their etchinglike designs acquired their unique form under the influence of an early Islamic decorative style in Samarra. From the reign of the German emperor Otto I to that of Henry II many of these fabrics were made into ecclesiastical vestments for German cathedrals (Mainz, Bamberg, Xanten, Brauweiler, and Merseburg). Otto II married Theophano, a Byzantine princess; her son, Otto III, patronized Byzantine art, and Arabian silks were rarely preferred to the Byzantine ones. Yet the patterns were created under the influence of early Islamic art. Sigrid Müller-Christensen (1960), in her thorough study of the textiles from the tomb of Pope Clement II in the Cathedral of Bamberg, has treated these "pseudo-damasks" at length and considers them to be Islamic textiles. The peacock decoration of the silk fragments, which reached the West as reliquary wrappings and were sometimes later (as in Canterbury) used as the backs of seals, is in accord with the early Islamic ornament on the desert palace of Mshattā. Other motifs, such as the double-headed eagle from the Monastery of St. Peter in Salzburg (Zurich, Abegg Coll.), which differs greatly from the Byzantine eagle, and the damasks with lions and birds next to tree-of-life motifs in roundels in Brauweiler, Siegburg, and London are pure examples of the Seljuk animal style, so that they could have been made either in Seljuk Syria or in Asia Minor. It must be remembered that Konya and Syria were conquered by the Turks in the 11th century and Bursa in the early decades of the 14th century. The Mamelukes were then already in power in Syria, but the Seljuk traditions remained active there as well, as is particularly noticeable in the script, of which there are many examples on the mosque lamps, unquestionably made in Syria, as well as in architectural inscrip-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tions. A group of gold brocades with stripe patterns and inscriptions are so similar to the Naskhi script on Syrian glass and the so-called "Nurinaskhi" of the architectural inscriptions on the citadel in Aleppo that these brocades, from which were made countless chasubles in the Church of St. Mary of Gdańsk, very probably were the products of Syrian looms.

Marco Polo praised the pile carpets of the Seljuks who had settled in Asia Minor. He stated that Greek, Armenian, and Turkish craftsmen worked side by side in the cities. Besides the Anatolian pile carpets sought after throughout the world, silk textiles, and in particular crimson ones (according to Marco Polo), were also made there. In the Musée Historique des Tissus, Lyons, is a silk with lions heraldically arranged in circles and with a Naskhi inscription referring to the Seljuk sultan Kaykūbad (1219–37), who was called the lion and whose heraldic emblem was the lion. Heraldic emblems were particularly developed by the Seljuks and, via the Crusaders, influenced European heraldry. A silk with heraldic eagles on shields is so close in style to a corresponding motif in the architectural decoration of Konya (anc. Iconium), the capital of the Seljuk kingdom of Rum (Rām), as to justify attributing it to a manufactory of that area.

The Turkish sultans encouraged silk weaving and particularly stressed a national production (the lists of weavers preserved in Bursa are said to contain only Turkish names), with the most important workshops in Bursa and Üsküdar. Motifs taken from Chinese and Persian silks (cloud bands, lotus blossoms) received an undeniably Turkish imprint. Arabesques and moon crescents, geometric stars, and naturalistically drawn flowers such as tulips, carnations, hyacinths, and lilacs formed harmonious patterns together with rosettes and star motifs.

Lozenges, pointed ovals, and vertical wavy lines play a large part in Turkish patterns. The colors are usually intense and glowing. Augier Ghislain de Busbecq, German ambassador to the court of Süleyman the Magnificent (1520–66), was most impressed by the scarlet, hyacinth yellow, and blue. The magnificent robes of the sultans Beyzazıt II (1481–1512) and Süleyman can be seen in the Topkapı Saray Museum, Istanbul.

In contemporaneous European brocades there was a high percentage of copper in the gilded silver threads, but in the Turkish, Persian, and Indian brocades the threads were of pure silver. Since some Turkish brocades were faithfully copied in Venice, this difference in material is of importance in distinguishing them.

The Turks at that time also produced outstanding velvet brocades in Bursa and Üsküdar. According to the Turkish historian Mehmet Nesri, the velvet brocade called *kamhâ* is mentioned in a document as early as 1348. In a list given to the Venetian ambassador in 1483 three types of velvet from Bursa were mentioned: *kamhâ*; "Üsküdar covers," woven to measure and particularly sought after in Europe; and velvets with the pomegranate design. In general the Turkish velvets, which are usually more colorful than the Italian, emphasize naturalistically drawn flower patterns (PL. 14). Bright reds, blues, and greens dominated, and strong contrasts, such as red ground and green pile or blue ground and red pile, were the rule.

Arabian script was much used on sarcophagus covers, wall panels, and banners, as witnessed by the so-called "blood banners" and other booty banners from the Turkish wars in the Vienna museums. Arabesques were also used in new and interesting ways in covers and wall panels. Many of the Islamic influences in European baroque art came from Turkey.

EMBROIDERY. Embroidery followed a parallel course to textiles in all their stylistic changes and was closely bound to them. The embroidery tool is a needle. In ancient times needles were made of bone, fish bone, or bronze; in modern times they are usually made of steel; with the aid of the needle threads are incorporated in decorative forms or figural compositions on a foundation consisting of fabric, leather, or paper. The embroidery generally takes its name either from the foundation material or from the type of thread used (for example, linen, wool, silk, silver embroidery; wool embroidery on linen, silk embroidery on wool). Gauze, tulle, canvas, and filet embroidery are so called according to specific kinds of foundation weave. Embroideries are indicated as flat, relief, and application (appliqué) embroidery according to specific technical procedures.

There are many types of embroidery that in themselves can produce a multiplicity of shapes. Thread, of course, is a fine medium for drawing; it is capable of constructing more or less unbroken contours or of filling in surfaces. Variation in the spacing of the stem stitch results in many different kinds of line: the thread can be knotted into a chain, plait, or braid stitch; thread sections of equal length can intersect each other at right angles to form a cross-stitch; small cross-stitches made in the direction of the foundation warp and weft result in a linear stitch called the Holbein stitch (because Holbein represented it realistically in his paintings). The "Gobelin stitch" resembles the linear technique of tapestry weaving, as does the satin stitch, with which surfaces can be covered by parallel juxtaposed layers. At the time when Jan van Eyck was developing the use of overlapping (superimposed) glazes in painting (Lasur technique) the so-called "Burgundian" embroidery (or Lasur embroidery), a kind of couching, was developed. At the threshold of the baroque, tambour work was popular. This was done with a special hooked needle, like a crochet hook, in a kind of chain stitch on a tightly stretched foundation cloth. The needle was inserted in the cloth and pulled through the loop of the previous stitch on the underside. Filet embroidery (reticella) required a specially crocheted foundation made with the filet needle. The netlike open meshes were filled in with white linen thread to form the design. Filet embroidery may be said to have formed a sort of bridge to lacework, which, however, is executed in a different technique.

The earliest embroideries known so far are Egyptian, but this undoubtedly is because of favorable climatic conditions for preservation rather than any real preference for embroidered fabrics. It is, in fact, known that the Egyptians considered both embroidery and polychrome textiles foreign to their taste and much more fitting to the barbarian peoples and to specific divinities such as the cat goddess, Bast. This did not in the least diminish their skill in embroidery, repeatedly evidenced both by literary sources and by surviving monuments and figural representations. Herodotus (III, 47) describes the girdle given by Amasis to the natives of Messina as being of linen with woven decorative motifs and embroidered in gold and cotton threads. Appliqué decoration was also known in Egypt, particularly of leather and beads. Embroidery was of great importance among the other peoples of the eastern Mediterranean area, as is known from the Biblical descriptions of the precious embroideries which decorated the Tabernacle of the Hebrews as well as the garments of the high priest (Exodus, 39: 3). Embroidery was equally widespread among the Babylonians and Assyrians, as shown by the figural representations of clothing in extant monuments. Babylon's great renown in this field was noted much later by Pliny, who recalls that stuffs of this type were called "Babylonian" (*Historia naturalis*, VIII, 74).

The introduction of embroidery into the Western world, through Greece, goes back, on close analysis, to a more or less direct Eastern origin. It is not by chance, for example, that important representations of cloth with embroidered ornament are found represented in archaic works of art (as the clothing of some of the korai of the Acropolis); Eastern influences going back even earlier can logically be supposed to be responsible for much of the decoration of the Cretan female attire, known from contemporaneous figural representations (although it is not entirely clear from Greek vase paintings whether the subject treated is embroidery or tapestry). The so-called "loom of Penelope" seen on Greek vases is, however, undoubtedly a tapestry frame.

In Coptic art, so rich in textiles and tapestries, embroideries are rare and relatively monotonous, being mainly of satin stitch (PL. 4). By contrast the early Islamic period was very productive; inscriptions on the robes of honor (see above) bestowed on dignitaries were embroidered in wool or silk, and much linen embroidery existed in many techniques. The coronation robes of the German emperors and the imperial alb (Vienna, Kunst-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

hist. Mus., Schatzkammer) of the 12th century are marvels of embroidery produced by the royal workshop in Palermo.

The art of embroidery flourished in Byzantium. Mosaics in Ravenna (such as that in S. Vitale) showing the Empress Theodora with her court depict richly embroidered garments. Also in Ravenna (Mus. Naz.) is an embroidered altar hanging of the 9th century from S. Apollinare in Classe with SS. Fermo and Rustico. A richly embroidered pallium with the consecration of the bread and wine in the Collegiata of Castell'Arquato (PL. 12) was, according to the Greek inscription, donated by the Patriarch of Aquileia, Ottobono Robario dei Feliciani, in 1315 and was later altered to make an ecclesiastical vestment worn in the orthodox Mass. The embroidery seems to have been executed in Byzantium in the 11th century but may possibly be of the early 14th century.

One of the earliest European embroideries known is a maniple from the tomb of St. Cuthbert, in Durham. According to the inscription it was made to the order of Bishop Fridestan of Winchester (d. 931). It is a finished needlework painting, stylistically comparable to contemporaneous miniature painting. The English women were — as testified in many sources, such as the *Gesta Guilhelmo Ducis Normannorum et Regis Anglicorum* — particularly skilled in needlework and gold embroidery; opus Anglicum was highly prized in the Middle Ages. Names of some of the embroideresses have come down to us: an Alwid of Ashley in the county of Buckingham; one Levier, of whom it is written in the Domesday Book that she worked for the king and queen of England; the wife of a certain Aldered in Winchester who embroidered for Queen Mathilde, wife of William the Conqueror; and noblewomen such as Duchess Aedelfleda, who embroidered a hanging for Ely Cathedral. It is said that Queen Alfled and her daughters worked with the needle. Queen Mathilde may well have participated in the embroidery of the Bayeux tapestry, which represents the Norman conquest of England. This is in any case a northwest-European work, embroidered in wool on linen, stylistically determined by indigenous folk-art influences.

In most European countries, and particularly Italy, embroidery, like all fine arts, was generally influenced by Byzantine art. The above-mentioned pallium in the Collegiata of Castell'Arquato and the so-called "dalmatic of Charlemagne" (ca. 1400; St. Peter's, Rome), whose figural style is close to the Byzantine mosaics, may be the products of Byzantine workshops in Italy. The Hungarian coronation robe, dated 1031, originally a bell chasuble and donated by St. Stephen of Hungary and his queen Gisela to the church in Székesfehérvár, seems to be a German work with Byzantine influences.

The Byzantine riding cloak of King Henry II in the Cathedral of Bamberg is a Byzantine work. South German 11th-century embroideries are the star cloak presented to Henry II by Duke Ismael of Apulia, worked with the starry heavens, and the robe of St. Kunigunde, made from a cope, with the story of Christ's incarnation, close in style to the Regensburg scriptoria (both, priv. coll.). The gold embroidery was executed in couching with varicolored silk threads partially connected with one another as in woven textile patterns. Occasionally woven textiles with the so-called "rota" pattern (circles) were used as foundations for the embroidery, as in the choir robe of Pope Boniface VIII (before 1295; Anagni, Cath. Treas.), decorated with roundels containing eagles, falcons, and heraldic birds.

In the 13th century the taste for gold embroidery seems to have spread throughout all Europe. Examples include a dalmatic in the Halberstadt Cathedral embroidered in gold with centaurs, stags, and vines; the pontifical shoes and stockings of the archbishops Gautier Cornut (d. ca. 1240), Pierre de Charny (d. 1274), and Gilon Cornut II (d. 1292) in the Cathedral of Sens; the ecclesiastical robes of Thomas à Becket (d. 1170); and a maniple of St. Edmund of Canterbury. Opus Anglicum was prized to such an extent that in the 15th century Thomas Palaeologus (despot of Morea) presented Pope Pius II with a cope embroidered in this technique (PL. 13).

Picture embroidery on linen had also already reached a high point of perfection in the 13th century, as shown by some chasubles from the Abbey of St. Blasien in the Black Forest (now in Carinthia, St. Paul im Lavanttal).

The Gothic white-on-white embroidery is an effective example of the artistic possibilities inherent in embroidery; in it the design is formed mainly by various types of stitches in a finely articulated linen technique (PL. 13). A white linen embroidery on a colored linen foundation with the legend of St. Catherine and the twelve Apostles (ca. 1410–12) in the Cathedral in Xanten, together with a cloth in St. Maria zur Wiese, Soest, comprise some of Westphalia's finest examples of linen embroidery. White-embroidered altar cloths such as that with scenes from the life of St. Mary Magdalene in Wernigerode (Fürst Otto-Mus.) equal the noblest products of the graphic arts. The so-called "fast cloths" (*Hungertücher*) found in churches of Lower Saxony, Westphalia, and the Lower Rhine hung before the altar only during Lent and were first mentioned in the early years of the 11th century.

In about 1300 an embroidery from the Upper Rhine (now in Paris, Mus. de Cluny) with scenes from the lives of St. Mark and St. John — among which is one of the earliest of the Christ–St. John groups that were soon to be perfected in sculpture — introduced a rich, painterly style. The choir robes done in opus Anglicum from the middle 13th to the early 14th century are very impressive. One of the most beautiful, from Syon House, erected on the site of an early-15th-century nunnery, is a cope (IV, PL. 12) with the field divided into four panels, in the individual fields of which the life of Christ and the Virgin is embroidered in a wealth of colors that brings to mind Gothic stained glass. Opus Anglicum was in great demand throughout Europe. Examples may be found in churches in Comminges, Toledo, Vich, Bologna, Pienza, Rome (Lateran), and elsewhere.

In the 14th century embroidery, formerly produced in convents and royal courts, was organized into corporations centered in the prospering cities. The names of some of the embroiderers are known: a choir cloak in the Cathedral of Salzburg was embroidered by a "Seidennater" Seidlin von Pettau; in 1336 in Florence one Jacopo Campi made an embroidery with the Coronation of the Virgin among saints under a Gothic arcade; on an altar hanging in S. María de la Seo, Manresa, Spain, can be seen the inscription "Geri de Lapo rachamatore, me fecit in Florentia."

As European panel painting developed, particularly with Jan van Eyck, embroidery followed suit and became needle painting. The embroidered antependium reached a zenith with such images as the Christ surrounded by the Evangelists, commissioned in 1393 by Abbot Arnaldo de Villalba, whose coat of arms appears on it (Vich, Mus. Episcopal), and the Resurrection in the Church of St. Felix, Gerona, unquestionably influenced by Dutch painting, perhaps even by Gothic tapestries from the Netherlands. Thus also an embroidery in the Cathedral of Trent with scenes from the life of St. Virgilius is close to the north Italian painting of the turn of the 14th century.

Linen wall hangings with figural wool embroidery from about 1400, such as those in Kloster Wiengausen near Celle, from Kloster Adelhausen (Freiburg im Breisgau Mus.), and in the town hall of Regensburg, reveal imagination and a folklike delight in narrative, as is also shown in the Bayeux tapestry. The stories of the prophets, of Mary Magdalene, and of St. Thomas, as well as the sagas of Tristan and Percival and scenes of the hunt and other knightly activities, are depicted in bright, gay colors.

Painterly embroidery reached its zenith in the so-called "Burgundian" technique. In a technique comparable to the intensification of the color scale in painting through the use of superimposed glazes or washes, embroidery arrived at somewhat the same effect by superimposing many thin layers of silk threads, mostly over a gold-thread ground, the threads not infrequently being laid in lozenges or other structures so that one layer could be glimpsed through the other. The most important embroideries in this technique, the Burgundian Mass vestments in Vienna (Mus. für Angewandte Kunst), can perhaps be traced back to designs by the Van Eycks. The design of the cope is formed of elongated hexagons in a honeycomb pattern; on a

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

chasuble the Transfiguration is represented in the midst of female and male saints. The embroiderers of these vestments used more than twenty shades of silk. The occasionally sharp relief was obtained by a padding of cloth, parchment, or wood. The eventual enrichment with beads, semiprecious stones, and sequins soon led to an exaggeration of the decorative means and an excess of trimming. Charming alms bags were also done in the "Burgundian" technique, as shown by examples in Paris (Mus. de Cluny) and Xanten (Cath. Treas.). In competition with the *basse-taille* enamels, such furnishings as sudariums, containers for the host, and antependiums were executed completely in bead embroidery, forming a glowing colored-bead mosaic.

Whereas woven borders were made in Palermo and Florence, in Cologne they were both woven and embroidered, and some were initially woven and then finished in embroidery. The patterns were very simple, with blossoming trees, folk and Christian symbols, and coats of arms. Figures of saints were also embroidered over a patterned woven foundation, or a border might be enriched with a woven-in saint's figure. These images, as well as the appliqués which gradually took over in late Gothic needle painting, eventually led to a degeneration of the art. But before then needle painting reached new heights under the early Renaissance painters of Florence, where embroidery flourished up to the middle of the 16th century. Artists such as Antonio Pollaiuolo, Raffaellino del Garbo, Parri Spinelli, and Perino del Vaga prepared embroidery cartoons; and high-ranking embroiderers such as Girolamo Cicogna, Paolo of Verona, Nicola Veneziano, and others were held worthy enough by Vasari to be included in his *Lives*. Antonio Pollaiuolo particularly, who belonged to the last generation of early Renaissance artists and who through his study of anatomy and the living model paved the way for the High Renaissance, is of interest. Vasari has provided detailed descriptions of the embroideries executed on Pollaiuolo's designs, since for the art history of the Renaissance they were of great importance. In the 1480s the Arte dei Mercanti di Calimala commissioned Pollaiuolo to provide drawings for embroideries representing scenes from the life of John the Baptist for two dalmatics, a cope, and a pluvial for the Baptistery in Florence. The embroideries were separated from the garments in the 18th century and are now in the Museo dell'Opera del Duomo (Florence). As in Pollaiuolo's paintings, these drawings also reveal the main problems that occupied most early Renaissance artists: the construction of space using a central perspective and the relationship of the image to the space and the landscape. In one of the embroideries the figures stand in front of a space much like a stage, which is placed in a landscape built up of more or less conventional stagelike requisites. In another series in which the figures are set in a space that follows the rules of central perspective, the embroiderer has marvelously projected himself into the artistic problems.

In the High Renaissance linear embroidery again came to the fore. It had always been practiced, particularly in provincial areas where folk art flourished, as in Umbria, and in Switzerland and other Alpine countries, as well as in Germany, England, and the Nordic countries. As personal and bed linen came into general use, linen embroidery spread throughout Europe. Since it was often white embroidery on white linen, the many varied stitches such as the stem, chain, and braid stitch came into their own. By breaking through the woven foundation, drawnwork offered multiple variations of the ground. Through the appliqué of lighter or darker colored rosettes, flowers, vines, horns of plenty, and other motifs, a low-relief effect was obtained. A specially crocheted net foundation (reticella) was further developed and sewn on in a sort of textile filigree of plant and animal motifs.

In the 16th century, pattern books for embroideries helped diffuse the art. One of the first, called *Eyn New Modelbuch*, was written by Jörg Gastel in Zwickau (Saxony) in 1515 (Dresden, Kunstgewerbe Bib.). Two years later books by Peter Quentel in Cologne and by Christian Egenolff in Frankfurt am Main were published (both, Leipzig, Kunstgewerbe Mus.). The pattern book of Tommaso Gazzoni, *La Piazza universale di tutte le professioni del mondo*, appeared in Venice in 1585. Between 1597 and 1602 one Johann Sibmacher printed many pattern books in Germany. Embroideries, which previously had served to provide the church with furnishings and ecclesiastical vestments, now also came into the service of the citizen and appeared on clothing, bed hangings, and covers.

Multicolored embroideries in all techniques, from stem stitch to cross-stitch to satin stitch, flourished from the 16th to 18th centuries (PL. 24). A Swiss cover (Vict. and Alb.) with the representation of the five senses as women on a vine-scroll ground was done in 1580, according to the date embroidered on it. Sight is depicted as a lady with a mirror and an eagle, Hearing as a lute player with a bear, Taste as a lady with a platter of cakes and a monkey, Smell as a lady smelling flowers, accompanied by a dog, Touch as a lady with a peacock. While this Swiss cover with its Latin inscriptions touches on the world of Humanism, a linen cloth in Troppau (Opava; Slezský Studijni Ústav), brightly embroidered in silk with representations of the Olympian gods assembled on clouds around Juno, leads into the High Renaissance.

Costume embroidery gained considerably in favor during the 17th century, with the introduction of liveries for servants and the change in the military field from mercenary armies to standing armies in standard uniforms. The impresa of the house, rank, and other symbols identifying the troop divisions were embroidered. In the 18th century the heights of magnificence were reached. Embroidery was executed in silk on silk with a plentiful use of gold thread, with much relief embroidery employed to achieve special effects. After the jerkin and doublet were replaced by vest and coat, the borders and cuffs of the coat and the entire vest, often reaching down over the lap, were richly embroidered in bright silks with gold thread (cf. IV, PLS. 15, 28, 29, 31). Ecclesiastical vestments followed this trend toward magnificence, with a high point probably reached in the so-called "Clementina," a 33-piece set of ecclesiastical vestments with figural gold embroidery bought in Lyons in 1742 for Clemens August, Archbishop of Cologne, for a price of 186,000 marks (Cologne, Cathedral Treas.). Cardboard, cloth, and felt formed the padding of the raised gold embroidery. Lyons was the supplier of most of these costly textiles for church and court.

After the French Revolution efforts were made to secure embroidery and textile commissions for high state and military needs, but the conditions specified thrift and simplicity. The foundation material for these works was often tulle and the technique often appliqué; occasionally the embroidery was completed by painting on the cloth. In the 19th century, with the exception of military and court uniforms, embroidery was gradually limited to little more than white embroidery on ladies' clothing and personal and bed linen. On covers, pillows, and furniture upholstery many-colored embroidery still flourished.

In most European countries embroidery became dependent on French fashions in the 18th century. In the north, particularly in Sweden and Norway but also in Germany, England, and Ireland, folk art continued to provide inspiration for a long time. Something similar was the case in the Slavic countries of eastern Europe. In Spain the emanations of the Moorish period lingered on, with embroidered curtains modeled on Moorish silk brocades of the 14th century, particularly those with geometric patterns, still being made in the 17th and 18th centuries.

There was a decided halt in the art of embroidery, which was relegated to folk art after World War I, with the European trend toward extreme simplicity of form. This was, however, followed by a reaction which again brought embroidery to the fore as decorative enrichment. Up to the present, however, the geometric or stylized forms common to almost all of Europe are the prevalent ones, even though each country has also adopted forms from the local craft traditions and reelaborated them.

The Islamic peoples of the East — the Egyptians, Syrians, Turks, and Persians — promoted embroidery from the early Middle Ages on. Mameluke tombs in Cairo, in addition to wool or silk embroideries, have yielded many patterned cloths,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

often done in a darning stitch, one of the most solid types of stitch, which gives the impression of having been woven in. In addition, all the types of stitches that were known in the West, up to the Holbein stitch, were current.

The Turks took along in their campaigns magnificent embroidered tents, some of which were taken as booty and can be found in various museums (Vienna, Heeresgeschichtliches Mus.; Karlsruhe, Landesmus.). Battle standards and saddlecloths were also often finely embroidered (Vienna, Kunsthist. Mus.). In the 18th and 19th centuries, embroidery, whether cross-stitch or tambour work, was completely dependent on the pile carpet and kilim motifs. For this reason some of it was called "Arabian" embroidery in Europe and was much imitated for pillow covers and bedspreads.

Few embroideries from the early years of China's and Japan's history have been preserved. A Korean embroidery of the Kōrai period (early 14th cent.) with lotus blossoms gives an idea of their fine linear style. Conclusions can perhaps be drawn from the *k'ossŭ* (tapestries). In European and American museums there are many eastern Asian embroideries from the late Middle Ages to the present. As in Europe, gold embroideries were also made in the 18th century; but in contrast to the European striving for relief effects, it remained a surface decoration.

LACE. Linen cloth from which some of the threads have been pulled out to be replaced by needlework results in drawnwork. When some of the fabric has been cut away in squares, circles, and other shapes, also to be filled with needlework, the result is cutwork; but these working procedures are still embroidery, since a cloth foundation remains. As long as there is a cloth base, scanty though it may be, the work cannot be called lace. Not until the thread was conceived of as the formative element, with an independent thread net stretched on a cushion according to an underlying pattern drawn on paper, and this thread was interwoven with other threads with the aid of a needle or a bobbin, did true lacework develop. It thus becomes clear that lace is a free plaitwork, and that its origins can be traced back to the plaitwork in bast,. hair, and thread practiced in antiquity. Plaited-thread headdresses were found in Coptic graves in Egypt, and rods that may have been bobbins have come to light in Etruscan excavations in Italy. But the real history of artistic lace did not begin until the 16th century in Venice, with the *punto in aria* (needle-point lace) — thread drawn freely through space (PL. 23). In this technique geometric figures were drawn as a basis, often according to pattern books such as that of Tagliente, *Esempio di racammi* (ca. 1530). The pattern book entitled *La pompe* (which probably means ornamentation) appeared in 1557 in Venice and is said to be the first in which bobbin lace can be clearly identified. Needle point and bobbin lace seem to have come into being simultaneously in Italy. Christoph Froschhower states in his pattern book, *Nüw Modelbuch*, which appeared in Zurich in 1562, that the art of making bobbin lace had been known in Switzerland for twenty-five years and that it had been introduced in 1536 by merchants from Venice and other Italian cities. One of the favorite instruction books in Italy bore the title *Corona delle nobili et Virtuose donne*, by Cesare Vecellio, 1591, which seems to indicate that noble ladies in particular occupied themselves with lacemaking.

Manufactories for lacemaking in Italy were in Venice, Milan, and Genoa — originally Venice produced more needle-point laces, Milan and Genoa bobbin laces. Up to the end of the 16th century needle-point and bobbin lace went along side by side, so that in the older type of needle-point lace, forms were created that were then also partly executed in bobbin lace.

In the 17th century, lacemaking, subsidized by the state, was also introduced in France. After unsuccessful attempts by Catherine de' Médicis and later Mazarin, in 1665 Colbert, the creator of the mercantile system, founded a society that had a monopoly of lacemaking for 10 years, with workers recruited in Venice and Flanders. The most important manufactories arose in Alençon and were supervised by Colbert himself. In 1682 in a letter to the manufactory supervisors he stated that the main defect of the French laces was that they were not as tight and white as those of Venice. Soon, however, the needle-point laces from Alençon excelled all others and were imitated even in Venice.

While needle-point lace was primarily adopted in France, bobbin lace was made in Flanders. In Bruges, Mechelin, Brussels, and especially in Valenciennes, which then still belonged to Flanders, important manufactories for bobbin lace were created. Bobbin lace was also made in Germany (Schneeberg, Annaberg in the Harz Mountains), Austria (Vienna), Dalmatia (Ragusa), Switzerland, Ireland, England (Buckinghamshire), and Spain.

The working material of lace is usually a fine linen yarn. In France and Spain laces called "blonde," probably from the yellowish cast, were also made from silk. The dark and black silk laces from Chantilly were particularly sought after, but generally needle-point and bobbin laces used very fine linen threads, some old lace being so fine that 222 threads laid side by side measure less than 1/2 in. They were surpassed in fineness only by ancient Egyptian linen textiles.

The making of bobbin lace requires a cushion on which is laid the pattern sheet with the design drawn on it. Marking needles are inserted in essential spots of the composition. The bobbin is a wooden stick about 4 in. long with a spool at the upper end, giving it a shape somewhat like that of a bell clapper. A bobbin is held in each hand, and the threads are then cast like a lasso around the marking needles. The bobbins are simultaneously twisted and crossed so that the threads form an interweaving. Through the twisting of the bobbins the right thread of each pair of bobbins is laid over the left, and in crossing the left of the two central threads is laid over the right. Until the end of the 16th century bobbin-lace patterns were achieved with this simple casting and a multiple plaiting, made from the casting of the two bobbins. Then were added the pattern pieces in the form of square or curved woven designs. There can be as many as 14, 18, or 20 (rarely more) bobbins, always, however, moved in pairs. Milanese bobbin lace has a characteristic narrow bobbin-made band edged by a sort of hemstitch. This was joined to the neighboring piece with tie bars, or "brides," later by a fine-meshed net. The bobbin laces from Genoa and other Italian cities lack this band in their ornament.

Soon after the middle of the 16th century, when the Spanish style set the fashion in Europe, one item of wearing apparel — the collar — contributed largely to the demand for lace. Invented originally to separate the washable from the unwashable part of the garment, this collar soon assumed grand proportions and was starched to frame the face and features in a ruff. Cuffs and the bands on breeches were also decorated with lace, as can be seen in Rembrandt's portrait of Maerten Day (Coll. Baron de Rothschild). Rubens, Veronese, and many other portraitists of the period were obviously intrigued by the possibilities for achieving interesting textures in the representation of lace (cf. PLS. 344, 346; IV, PL. 28; XII, PL. 325). In French fashions lace was also used on the breeches at the knees. Many seams were trimmed with lace, which sometimes fell in cascades. When the neck ruff went out of fashion, luxurious lace cravats were introduced. The luxury of lace can be imagined from a cartoon for a painting by Etienne Jeurat in Versailles which represents the meeting of Philip IV of Spain with Louis XIV on Pheasant Island in the Bidasso River. The Spanish king was accompanied by his daughter María Theresa, future wife of Louis. The French king wears Venetian needle-point lace in large vine-scroll designs, and the Infanta wears lace similar to that shown in Velázquez' painting and apparently of Netherlandish origin. These simple Dutch bobbin laces were also called "Velázquez" laces. In portraits by Van Dyck (IV, PLS. 304, 308) and Rembrandt (XI, PL. 456), only the lightly starched flat collars are generally of such bobbin lace.

In the extant laces of the Renaissance and the baroque there can be seen the change from a linear, finely drawn style in lace to a figural, more painterly style. In the 16th and 17th centuries the relationship of ornament to ground was conceived in a purely linear fashion, with a light relief occasionally attempted

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in the bobbin lace of Milan and Flanders. In Flanders an important lace industry was already in existence in the 16th century. Flemish laces with figural motifs (PLS. 23, 27, 29) are to be found in Brussels (Mus. Royaux d'Art et d'Histoire) and in London (Vict. and Alb.) with Roman emperors and their arms in the former (PL. 23) and with Philip IV and the Order of the Golden Fleece in the latter. Bobbin lace was introduced into Saxony by Dutch emigrants who left their homes at the time of the Inquisition. French emigrants who left their native land after the Edict of Nantes had been revoked animated the lace industry in Ghent and Neufchâtel. Emigrants from the Netherlands and France were also responsible for the considerable rise in lacemaking in England.

The development during the 19th century of lacemaking machines, which could produce laces that were difficult to distinguish from the handmade varieties, threatened the art of lacemaking. But handmade laces of high quality continued to be made in almost all of the traditional centers of the craft in Europe, generally elaborating or repeating traditional techniques and decorative forms. The 19th- and 20th-century pieces, however, reveal a derivation from fashions inspired by contemporary tendencies in figural art. France, which had long remained in the lead, especially after Colbert's laws, again ceded its place toward the end of the 19th century to Italy, where, particularly after the reorganization of the women's industries of Burano (1872) and after the successful affirmation of the Jesurum in Pellestrina, production continued uninterrupted. In Italy, as elsewhere, there is a lively craft production side by side with the industrial production keyed to a wide commercial distribution.

FOLK TEXTILE ARTS. In folk art artistic emanations from the so-called "high" cultures play a large part. For example, much of European folk art owes its form to baroque art; this applies also to textiles. Ever since, in the 19th century, industry, with the help of the Jacquard machine, took over much of the weaving of textiles for the traditional folk costumes, weaving as a folk art has greatly declined, but it still exists. The serious study of folk art did not begin until well into the 19th century, and not until then were valuable early examples collected. The element that particularly distinguishes folk art from fine art is its lack of participation in the style changes caused by the search for new forms; this does not mean that there are no problems of form in folk art, but that they stand in closer rapport with the craft proceedings. Particularly in folk art, the skillful handling of material, tools, and forms must be learned, and this together with the related joy of discovery comprises the essential creative impulse.

One of the oldest weaving methods was loop weaving, already known in the early history of man and used in the robes worn by the kings and priests of Sumeria. It seems to have been an attempt at the imitation of the fur pelts which Stone Age men used as clothing and which are still used by Eskimos and other primitive peoples. The technique is still used, for example, in the foundation of the modern loden cloth.

White linen was probably one of the earliest textiles to stem from folk art. Examples are still made in Umbria (PL. 18) according to a tradition that goes back at least to the 12th and perhaps to the 11th century. This compound fancy cloth, which usually has a bird's-eye design in the foundation weave and blue stripes, generally in cotton, patterned with birds, lambs, stags at a well, horses, leaves, and flowers, was generally intended to serve as table linen. The tablecloth in Ghirlandajo's *Last Supper* (Florence, Ognissanti) is such a cloth from Perugia. An inventory made in 1482 of a collection in Perugia mentions such a textile destined for the high altar, which was said to represent lions and dragons in the style of Perugia.

Like the desert sands of Egypt, the bogs of the Nordic countries have also preserved textiles throughout the ages. Entire garments of sheep's wool have been found on the Ice Age corpses yielded by the moors in the province of Hannover (Obereltendorf, Bernuthfeld) and in Torsberger Moor near Süderbrarub (Schleswig-Holstein), in Eskoj, near Aarhus, and in Tollund in Jutland, to mention only a few. Particularly important are belts, such as that found on a man's garment in Eskoj and the woman's belt now in Arolson (Fürstliche Mus.). Vivi Gylvan (1931), who has extensively studied the textile art of the Nordic lands, has also published a work on tablet weaving, a system by which the bands and belts so important in folk art were made. She came to the conclusion that at about the beginning of the Christian Era tablet weaving existed in both Gaul and the Nordic countries. It was unknown in ancient Egypt, in Greece, in Asia, and in pre-Columbian America but was practiced in Islamic lands from the 10th century on and flourished in Sicily from the 10th to the 13th century, even after the Norman conquest and under the Hohenstaufen rule. From the 14th century on it survived only as a folk art. This is a good example of a folk art becoming a fine art and then returning to the realm of folk art, with its characteristic elements retained throughout its history. Similar cases are linen weaving in Perugia and the Nordic double weaving and loop weaving. These Nordic double-woven cloths, such as the example with horses and birds from the Radakirche in Värmland (Sweden) and the one from the church of Overhogdal, are related in appearance to the Perugian products. In Bohuslän (Sweden) textiles such as the one from the Radakirche with geometric, strongly stylized lions, leopards, and people were still being woven in the 19th century in almost identical form. As has been said, this is characteristic of true folk art, which changes little in form or style over the centuries. The Bayeux tapestry, representing the Norman conquest of England in the 11th century (PL. 312; VII, PL. 271), and a 12th-century wall hanging with a stave church and a wooden bell tower surrounded by human beings and animals in Skog (Sweden; IV, PL. 176) are based on similar peasant foundations, and thus are similar in style.

The elementary necessities of life among all peoples led to similar developments in the crafts. They varied according to environment, climate, and other circumstantial influences, but their relationship in technique cannot be denied. Influences also passed from one folk to another. Mention has already been made of the Arabian influence on Italian textile art; Asian influences also reached northern Europe. In the Middle Ages trade relations existed between the Turkic peoples and Sweden via the Baltic through Russia to the Black Sea. The so-called "Marby rug" (XIII, PL. 415), found in Marby (Jämtland, Sweden), is evidence of this.

The fact that the art of knotting carpets was known in Europe as well as in the East is testified by a picture carpet in Quedlinburg showing the marriage of Mercury with Philology, made under Abbess Agnes of Meissen (ca. 1300). Lower Saxony had a flourishing folk art of both tapestry-woven and embroidered picture carpets and white-linen embroidery, as well as the particularly charming loop-woven textiles, which had a wider diffusion than is generally supposed; examples have been preserved in Italy and Spain as well. In the Nordic countries — Finland (Ryo), Sweden, and Iceland — and in East Prussia and Schleswig-Holstein loop-woven textiles were made, serving usually as wall hangings, covers, and pillow cases (in Schleswig-Holstein also as horse blankets), in which a particularly high point was reached in the creation of reversible fabrics of wool and linen. Westphalia, Saxony, lower Austria, and Czechoslovakia (Mähren) all produced excellent damask table linens with characteristic folk motifs.

The textile art was receptive not only to the old folk traditions, but was also widely influenced by the formal language of baroque art. This can be established in weaving, in embroidery, and particularly in lace, which was widespread as a folk art and became a craft of importance from the baroque period on. In addition to the Italian, French, and Belgian cities where lace achieved its highest perfection (see above), it was also made in many Italian centers — Piedmont, Lombardy, Liguria, Sardinia, the Abruzzi (Aquila, Pescoconstanza), and the Campagna Romana. Lacemaking also flourished in Crete, whose gold bobbin lace was especially prized. In Dalmatia, where the fronts of the men's shirts are partially covered with large lace insets, in Hungary, in Czechoslovakia (Bohemia), and in Poland bobbin lacemaking was practiced as a folk art, as it was in certain areas of Sweden (Småland, Skåne, Dalarna). In the eastern European countries such as Czechoslovakia,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Poland, Hungary, Yugoslavia, Albania, Bulgaria, Rumania, and Russia the folk costumes are characterized by brightly colored wool embroidery and rich white linen and cotton embroidery used in a multitude of ways on jackets, bodices, shirts, aprons, scarves, and kerchiefs.

Despite a long period of Turkish occupation, the Greeks preserved their traditional folk art in a comparatively pure form. Gay flowers executed in wool or silk embroidery embellished by much gold thread were used on clothing, cushion covers, aprons, borders, and belts. Drawnwork and bobbin lace, including gold lace, played an important part in this folk art. Ancient motifs such as the palmette and lotus tendrils were adapted and stylized but are still recognizable in their new contexts.

In the western European countries folk textiles came more or less under the influence of the French baroque; in Spain and Portugal Moorish influences were strong. Medieval traditions continued for a long time in British textiles; these were successfully combined with baroque influences from France and the Netherlands as well as with Indian influences.

Despite the efforts of John Ruskin, William Morris, and their followers, mechanization and industrialization soon engulfed the textile arts and, of course, inevitably affected the production of folk art, as did also, and perhaps more drastically, the increasing urbanization of modern life. But folk art is far from dead in Europe, and the mid-20th century saw many interesting efforts (such as the artisan's cooperative in Italy) to keep it alive and to strengthen it.

Heinrich J. Schmidt

Bibliog. *General*: J. Pillement, Fleurs, oiseaux et fantasies, Paris, 1808 (repr. 1924); R. Cox, L'art de décorer les tissus d'après les collections de la Chambre de commerce de Lyons, Paris, Lyon, 1900; J. Lessing, Die Gewebesammlung des Kunstgewerbmuseums, Berlin, 1900–13; J. Braun, Die liturgische Gewandung im Occident und Orient nach Ursprung, Entwicklung, Verwendung, Entwicklung und Symbolik, Freiburg, 1907; G. Migeon, Les arts du tissu, Paris, 1909; M. Dreger, Künstlerische Entwicklung der Weberei und Stickerei, Berlin, 1913–21; N. A. Reath, The Weaves of Handloom Fabrics, Philadelphia, 1917; J. Savary, Dictionnaire universel de commerce, Paris, Amsterdam, 1923–26; E. Flemming, Textile Künste, Weberei, Stickerei, Spitze, Berlin, 1923 (2d ed. 1960); I. Errera, Catalogue d'étoffes anciennes et modernes, Brussels, 1927; E. Flemming, Das Textilwerk, Berlin, 1927; H. T. Bossert, Geschichte des Kunstgewerbes, I–VI, Berlin, 1928–35; H. de Hennezel, Catalogue des principales pièces exposées au Musée historique des tissus, Lyons, 1929; A. Loewi, Exhibition of Textile Art from the Early Christian Time to the XVIIIth Century, New York, 1933; W. Heyd, Histoire du commerce du Levant au moyen-âge, Leipzig, 1936; Textillexikon, Handwörterbuch der gesamten Textilkunde, ed. by H. Glafey, Stuttgart, Berlin, 1937; A. C. Weibel, R. M. Roland, and M. M. William, Two Thousand Years of Silk Weaving (cat.), New York, 1944; A. C. Weibel, Two Thousand Years of Textiles, New York, 1952; V. Sloman, Bizarre Designs in Silks, Copenhagen, 1953; H. J. Schmidt, Alte Seidenstoffe, Braunschweig, 1958 (with bibliog.).

Antiquity: J. C. Planche, History of British Costume, London, 1847; J. Gardner Wilkinson, Popular Account of the Ancient Egyptians, New York, 1880; E. Guhl, The Life of the Greeks and Romans, tr. from the 3d ed. by F. Hueffer, London, 1889; H. F. Lutz, Textiles and Costumes among the Peoples of the Ancient Near East, Leipzig, 1923; C. L. Wooley, The Sumerians, Oxford, 1928; J. C. Fluegel, The Psychology of Clothes, London, 1930; A. A. Trevor, History of Ancient Civilization, New York, 1936; M. Warde Fowler, Social Life at Rome, New York, 1937; E. Vogt, Geflechte und Gewebe der Steinheit, Basel, 1937; L. Lamprey, History of Weaving, New York, 1939; C. Singer, E. J. Holmyard, and A. R. Hall, History of Technology, I–II, Oxford, 1954; M. N. Grass, History of Hosiery, New York, 1955; R. J. Forbes, Studies in Ancient Technology, IV, Leiden, 1956; A. Lucas and J. R. Harris, Ancient Egyptian Materials and Industries, London, 1962 (4th ed.); H. Helbaek, Textiles from Catal Hüyük, Archaeology, XVI, 1963, pp. 39–46.

Byzantine and Coptic textiles: A. B. Baghat, Les manufactures d'étoffes en Égypte au moyen âge, Cairo, 1904; H. Grisar, Die römische Kapelle Sancta Sanctorum und ihr Schatz, Freiburg, 1908; O. Wulff, Altchristliche und byzantinische Kunst, Berlin, 1914; A. F. Kendrick, Catalogue of Textiles from Burying Grounds in Egypt, I–III, Victoria and Albert Museum, London, 1920–22; M. Dimand, Die Ornamentik der ägyptischen Wollwirkerein, Leipzig, 1924; O. Wulff and W. F. Volbach, Spätantike und koptische Stoffe aus ägyptischen Gräbern, Berlin, 1926; R. Pfister, Textiles de Palmyre, Paris, 1934–40; R. Pfister and L. Bellinger, The Excavations at Dura-Europos: the Textiles, New Haven, 1945.

Medieval and modern: F. Michel, Recherches sur le commerce, la fabrication et l'usage des étoffes de soie, d'or et d'argent . . . pendant le moyen âge, Paris, 1852–54; G. Livi, I mercanti di seta lucchesi in Bologna nei secc. XIII e XIV, Bologna, 1881; G. and H. Schmoller, Die Preussische Seidenindustrie im 18 Jh. und ihre Begründung durch Friedrich den Grossen, Acta Borussica, I, II, Actenpublication, III, Berlin, 1892; F. R. Martin, Figurale Stoffe aus dem Zeitraum 1550–1650, Stockholm, 1899; E. Pariset, Histoire de la fabrique lyonnaise. Étude sur le régime économique de l'industrie de la soie à Lyon depuis le XVe siècle, Lyons, 1901; E. Barsotti, Sulle origini dell'arte della seta in Lucca, Lucca, 1905; H. Koch, Geschichte des Seidengewerbes in Köln, Leipzig, 1907; E. Leroudire, Les dessinateurs de la fabrique lyonnaise au XVIIIe siècle, Lyons, 1908; M. J. Guerin, La Chinoiserie en Europe au XVIIIe siècle, Paris, 1911; A. F. Kendrick, Catalogue of Early Mediaeval Woven Fabrics, Victoria and Albert Museum, London, 1925; D. Réal, Tissus espagnoles et portugais, Paris, 1925; F. Witte, Die liturgischen Gewänder und kirchlichen Stickereien des Schnütgen-Museums in Köln, Berlin, 1926; F. Podreider, Storia dei tessuti d'arte in Italia, secc. XII–XVIII, Bergamo, 1928; U. Dorini, L'arte della seta in Toscana, Florence, 1928; W. Mannowsky, Der Danziger Paramentenschatz. Kirchliche Gewänder und Stickereien aus der Marienkirche, Berlin, 1931–38; E. Scheyer, Die Kölner Bortenweberei des Mittelalters, Augsburg, 1932; W. F. Volbach, Spätantike und frühmittelalterliche Stoffe, Katalog des Römisch-Germanischen Zentralmuseums, 2 vols., Mainz, 1932; C. J. Lamm, Cotton in Mediaeval Textiles of the Near East, Paris, 1937; L. E. Serra, L'antico tessuto d'arte italiano nella mostra del tessile nazionale, Rome, 1937–38; W. Arslan, La mostra dell'antico tessuto italiano (cat.), Rome, 1938; De Capitani d'Arzago, Catalogo dei tessuti della basilica ambrosiana, Milan, 1941; W. F. Volbach, I tessuti del Museo Sacro Vaticano, Vatican City, 1942; M. Gómez Moreno, El Pantéon Real de Las Huelgas de Burgos, Consejo Superior de Investigaciones Cientificas, Inst. Diego Velázquez, Madrid, 1946; D. G. Shepherd, The Textiles from Las Huelgas de Burgos, A Review of the Original Publication with Some Additional Notes, The B. of the Needle and Bobbin Club, 35, nos. 1–2, 1951, pp. 3–26; T. Aldrian, Bemalte Wandbespannungen des 18 Jahrhunderts, Graz, 1952; R. Jaques, Deutsches Textilkunst, Krefeld, 1954; S. Müller-Christensen, Sakrale Gewänder des Mittelalters, Munich, 1955; F. L. May, Silk Textiles of Spain, New York, 1957; A. Santangelo, Tessuti d'arte italiani dal secolo al XVIII secolo, Milan, 1959; S. Müller-Christensen, Das Grab des Papstes Clemens II, Munich, 1960.

Egypt and Western Asia: F. R. Martin, Die Persischen Prachtstoffe in Schloss Rosenborg in Kopenhagen, Stockholm, 1901; F. and M. Sarre, Die Ausstellung von Meisterwerken muhammedanischer Kunst in München (1910), Munich, 1912; A. D. H. Smith, A Guide to the Japanese Textiles, Victoria and Albert Museum, London, 1919; F. H. Andrews, Ancient Chinese Figured Silks Excavated by Sir Aurel Stein, BM, XXXVII, 1920, pp. 3–10, 71–77, 147–52; A. F. Kendrick, Catalogue of Muhammadan Textiles of the Mediaeval Period, Victoria and Albert Museum, London, 1924; T. M. Yamada, Tenkwa Manzui, Horyuji, Todaiji, und aus dem Besitz des Herrn Momvyama, Kyoto, 1926; E. Kühnel, Islamische Stoffe aus ägyptischen Grabern, Berlin, 1927; Toyei Shiko, An Illustrated Catalogue of the Ancient Imperial Treasury Called Shosoin, Tokyo, 1928; A. Stein, Innermost Asia, 4 vols., Oxford, 1928; G. Weit, Album du Musée Arabe du Caire, Cairo, 1930; G. Weit, L'exposition persane de 1931, Cairo, 1933; P. Ackermann, The Textile Arts, SPA, I, pp. 681–715, III, pp. 1995–2220, VI, pl. 981–1106; M. Aga-Oglu, Safavid Rugs and Textiles: The Collection of the Shrine of Imam Ali at al-Najaf, New York, 1941; R. B. Serjeant, Material for a History of Islamic Textiles up to the Mongol Conquest, Ars Islamica, IX, 1942, pp. 54–92, X, 1943, pp. 71–90, XI–XII, 1946, pp. 98–145, XIII–XIV, 1948, pp. 75–117, XV–XVI, 1951, pp. 29–86; A. Priest, Catalogue of an Exhibition of Imperial Robes and Textiles of the Chinese Court, Minneapolis, 1943; G. Wiet, Soieres persanes, Cairo, 1948; T. Oez, Turkish Textiles and Velvets, Ankara, 1950; E. Kühnel and L. Bellinger, Catalogue of Dated Tiraz Fabrics Umayad, Abbasid, Fatimid, Washington, 1952; M. A. A. Marzouq, History of Textile Industries in Alexandria, Cairo, 1955; A. Gejer, Oriental Textiles in Sweden, Copenhagen, 1961.

Embroidery: L. Alvin, Les anciens patrons de broderies, de dentelles et de guipures, Brussels, 1863; H. Sibmacher, Stick-und Spitzenmusterbuch nach der Ausgabe von 1597, Vienna, 1874; F. Lay and F. Fischbach, Südslavische Ornamente, Budapest, 1878–79; J. Lessing, Muster altdeutscher Leinenstickerei, 3 vols., Berlin, 1879–90; M. Alford, Needlework as Art, London, 1886; T. de Dillmont, Encyclopedia of Needlework, Mulhouse, 1887; L. de Farcy, La broderie du XIe siècle jusqu'a nos jours, 2 vols., Angers, 1890; J. von Schlosser, Der burgundische Paramentenschatz des Ordesns vom goldenen Vliess, Vienna, 1912; M. B. Huisch, Samplers and Tapestry Embroideries, London, 1913; P. Jessen, Der Ornamentisch. Geschichte der Vorlagen des Kunstgewerbes, Berlin, 1920; E. Ricci, Ricami italiani antichi e moderni, Florence, 1925; M. Schütte, Geschichte der Bildteppiche und Decken des Mittelalters, Leipzig, 1927–30; M. Symonds and L. Preece, Needlework through the Ages, London, 1928; L. Lipparini, L'Aemilia Ars e la sua storia, Strenna Storica Bologna, a. VII, 1957, pp. 179–90; M. Schuette and S. Müller-Christensen, A Pictorial History of Embroidery, New York, 1964.

Lace: B. Palliser, A History of Lace, London, 1865 (2d ed. 1904); A. Ilg, Geschichte und Terminologie der alten Spitzen, Vienna, 1876; G. Despierres, Histoire du point d'Alençon, Paris, 1886; T. Frauberger, Handbuch der Spitzkunde, Leipzig, 1894; F. N. Jackson, A History of Hand Made Lace, London, 1900; J. H. Pollen, Seven Centuries of Lace, London, 1908; G. Romanelli-Marone, Trine e fuselli in Italia, Milan, 1910; A. M. Kohlsaat, Old Lace Manual, New York, 1910; M. Dreger, Entwicklungsgeschichte der Spitze mit besonderer Berucksichtigung der Spitzensammlung des K. K. Österreichischen Museums für Kunst und Industrie, Vienna, 1910; A. de Valverde, Catalogo de la Exposicion de Lanceria y Encajes Españoles, del siglo XVI al XIX, Madrid, 1915; C. Kellog, Bobbins of Belgium, New York, London, 1920; F. and M. Hagues-Morris, Antique Laces of American Collectors, New York, 1922–28; M. L. Brooke, Lace in the Making with Bobbins and Needles, London, 1923; M. Schütte, Alte Spitzen, Berlin, 1926 (3d ed.); A. Malotet, La dentelle a Valenciennes, Paris, 1927; M. Schütte, Spitzen von der Renaissance bis zum Empire, Berlin, 1929; A. T. von Henneberg, Stil und Technik der alten Spitze, Berlin, 1931; C. Jannig and A. Richter, Die Technik der geklöppelten Spitze, Vienna, n.d.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Folk art: C. Jole, Altägyptische Webstühle und Brettelen Webereien in Altägypten, Berlin, 1901; M. Lehmann-Filhes, Uber Bretelenweberei, Berlin, 1901; G. Buschan, Illustrierte Völkerkunde, Stuttgart, 1909; C. Holme, Peasant Art in Sweden, Lapland and Iceland, London, 1910; W. Pessler, Deutsche Volkskunst, ed. by Erwin Redslob, Munich, 1923; H. T. Bossert, Volkskunst in Europa, Berlin, 1926; M. Schmidt, Kunst und Kultur von Peru, Berlin, 1929; K. Hahn, Deutsche Volkskunst, Berlin, 1932; V. Gylvan, Svenskaryor, Stockholm, 1934; K. Hahn, Ostpreussische Bauernteppiche, Jena, 1937; K. Schlabow, Germanische Tuchmacher der Bronzezeit, Neumunster, 1937; H. Karlinger, Deutsche Volkskunst, Berlin, 1938; E. Meyer-Heisig, Nadelwerk, Zeugdrücke, Munich, 1956.

Primitive societies and pre-Columbian America: H. L. Roth, Studies in Primitive Looms, JRAI, XLVI, 1916, pp. 284–308, XLVII, 1917, pp. 113–50, XLVIII, pp. 103–45; J. Maes, Le tissage chez les populations du lac Léopold II, Anthropos, XXV, 1930, pp. 393–408; H. Loir, Le tissage du raphia au Congo Belge, Ann. du Musée du Congo Belge, III, I, 1935; A. C. Haddon and L. E. Start, Iban or Sea Dayak Fabrics and Their Patterns, Cambridge, 1936; A. Bühler, Materialen zur Kenntnis der Ikattechnik, Leiden, 1943; P. H. Buck, The Coming of the Maori, Wellington, 1952, pp. 158–78; J. Bird and L. Bellinger, Paracas Fabrics and Nazca Needlework, Washington, 1954; A. Bühler, Plangi, Les Cahiers Ciba, LV, 1954, pp. 1904–28; M. Covarrubias, The Eagle, the Jaguar and the Serpent, Indian Art of the Americas, New York, 1954; J. A. Mason, The Ancient Civilizations of Peru, Harmondsworth, 1957; A. Steinmann, Batik, A Survey of Batik Design, Leigh-on-Sea, 1958; F. A. Wagner, Indonesia: The Art of an Island Group, London, New York, 1959; E. Leuzinger, Africa: The Art of the Negro Peoples, New York, 1960; K. Peck Kent, The Story of Navaho Weaving, Phoenix, 1961; A. Bühler, T. Barrow, and C. P. Mountford, Oceania and Australia: The Art of the South Seas, London, New York, 1962; R. D'Harcourt, Textiles of Ancient Peru and Their Techniques, Washington, 1962; L. M. O'Neale, Weaving, HSAI, CXLIII, 5, 1963, pp. 97–138.

* *

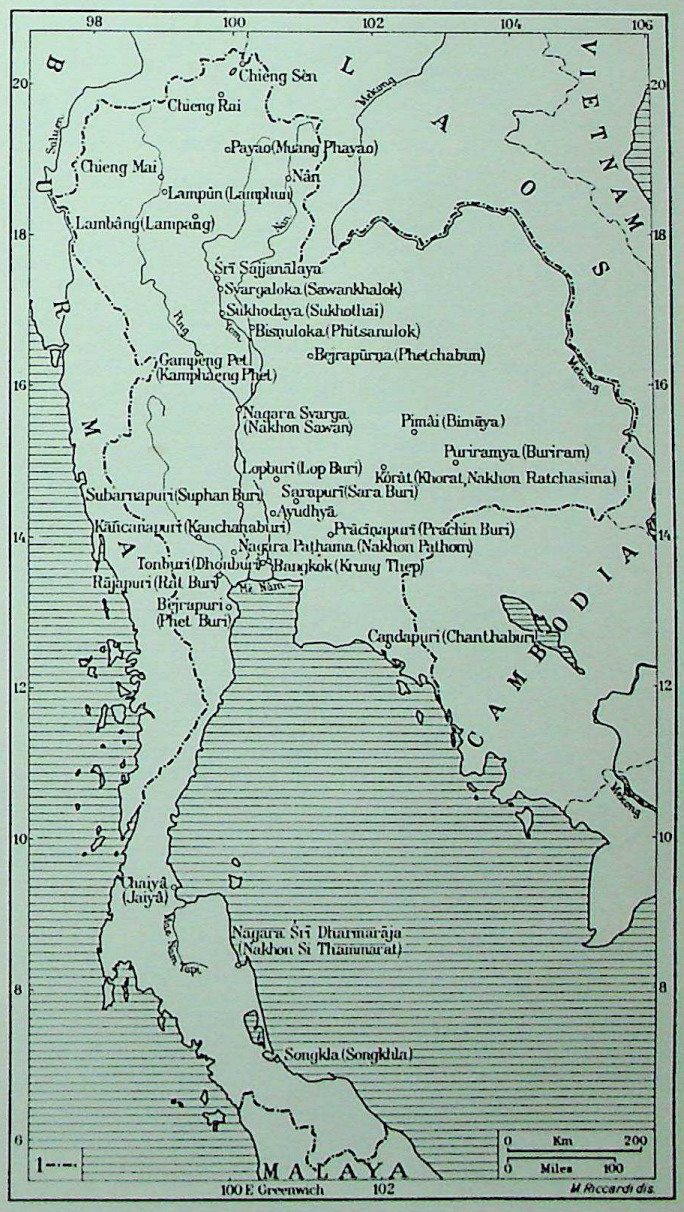
Illustrations: PLS. 1–34.

THAILAND. A kingdom occupying the center of the southeast Asian peninsula, formerly called Siam. The name Thailand is a translation of Müang Tai, the official spelling, Thai, being a relic of French missionary efforts in the 17th century. The name (written Dai) is first attested in Râm Kamhèng's inscription of 1292 (Bangkok, Vajirañāna Lib.). The name Syam is attested in the 11th-century Cham inscription of Po Nagar at Nhatrang (Vietnam), in the 12th-century bas-reliefs at Angkor Wat, and often in Ayudhyan literature.

The art and architecture of Thailand are exceedingly rich and varied (see SIAMESE ART). Though large numbers of Chinese have emigrated into the region over a period of centuries, Chinese art has had little influence except in a few specialties (e.g., in ceramics, occasionally in painting, and in some 19th-century architecture). The main art traditions stem, either directly or through Cambodia (q.v.), from India (see INDIAN ART) — Amaravati, Pallava, post-Gupta, Pala (see PALA-SENA SCHOOLS) — and from Ceylon (Anuradhapura, Polonnaruva; see CEYLONESE ART). Some writers who know the art of India better than that of Thailand regard the latter as a degenerate provincial manifestation of the former: an error that may be excused on the grounds that only a minute portion of the glories of Siamese art has been published in the West.

Throughout the historical period the religion of most of Thailand has been Theravāda Buddhism (see BUDDHISM). During the Śrīvijayan period, however, Mahayana Buddhism predominated in the Malay Peninsula, being succeeded by Islam south of Songklâ (Singora) and by the Theravāda north of it. In Dvāravatī the Mahayana played a minor role, but during the Khmer occupation (see KHMER ART) it enjoyed official sanction, only to disappear afterward. The Hindu cults have traditionally been held in high esteem by the Buddhist majority, but less as a religious faith than as a support of monarchy and good government.

BIBLIOG. *General*: S. De La Loubère, Du royaume de Siam, 2 vols., Paris, 1691; S. De La Loubère, A New Historical Relation of the Kingdom of Siam, 2 vols. in 1, London, 1693; J. B. Pallegoix, Description du royaume thai ou Siam, 2 vols., Paris, 1854; H. S. Hallet, A Thousand Miles on an Elephant in the Shan States, London, Edinburgh, 1890; L. Fournereau, Le Siam ancien: Archéologie, épigraphie, géographie, 2 vols., Paris, 1895–1908; E. Aymonier, Le Cambodge, 3 vols., Paris, 1900–04; E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, 3 vols., Paris, 1902–12; E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 188–262; H. Cordier, Bibliotheca Indosinica: Dictionnaire bibliographique des ouvrages relatifs à la péninsule indochinoise, I, Paris, 1912, cols. 713–996; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission archéol. de l'Indochine, 1912; K. Döhring, Buddhistische Tempelanlagen in Siam, 3 vols., Bangkok, Berlin, 1920; E. Seidenfaden, Complément à l'inventaire descriptif des monuments du Cambodge pour les quatre provinces du Siam oriental, BEFEO, XXII, 1922, pp. 55–99; G. Coedès, Recueil des inscriptions du Siam, 2 vols., Bangkok, 1924–29 (2d ed., 1961); G. Coedès, Documents sur l'histoire politique et religieuse du Laos occidental, BEFEO, XXV, 1925, pp. 1–200; K. Döhring, Kunst und Kunstgewerbe in Siam, 3 vols., Berlin, n.d. [1925]; A. Salmony, Sculpture in Siam, London, 1925; R. S. Le May, An Asian Arcady: The Land and Peoples of Northern Siam, Cambridge, 1926; C. Notton, Annales du Siam, 3 vols., Paris, 1926–32, vol. 4, Bangkok, 1939; W. A. R. Wood, A History of Siam, London, 1926 (2d ed., Bangkok, 1933); J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 361–448; R. S. Le May, Sculpture in Siam, London, 1934; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed., Rutland and Tokyo, 1963); E. W. Hutchinson, Adventurers in Siam in the 17th Century, London, 1940; G. Coedès, Les états hindouisés d'Indochine et d'Indonésie, Paris, 1948 (new ed., 1964); L. P. Briggs, The Ancient Khmer Empire, Tr. of the Am. Philosophical Soc., N.S., XLI/1, 1951, pp. 1–295; R. S. Le May, The Culture of Southeast Asia, London, 1954; R. Cauvin, Thaïlande, Brussels, 1958; P. Dupont, L'archéologie mône de Dvāravatī, 2 vols., Paris, 1959; Fine Arts Department, Plan and Report of the Survey and Excavations of Ancient Monuments in northeastern Thailand, Bangkok, 1959; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.); G. Coedès, Les Peuples de la péninsule indochinoise, Paris, 1962 (Eng. trans., The Making of South East Asia, London, 1966); R. and L. Sharp, Some Archaeological Sites in North Thailand, J. of the Siam Soc., LII/2, 1964, pp. 223–39; M. C. Subhadradis Diskul, G. Coedès, and J. Boisselier, Trésors de l'art de Thaïlande, Paris, 1964 (cat.); J. Boisselier, Récentes recherches archéologiques en Thailande, Arts asiatiques, XII, 1965, pp. 125–73; J. Boisselier, Nouvelles données sur l'histoire ancienne du Siam, Soc.



Thailand, principal sites of archaeological and artistic interest. *Key*: (1) Modern national boundaries.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Sc. Rev., Bangkok, June 1966; J. Rispaud, Contribution à la géographie historique de la Haute Birmanie, Essay Offered to G. H. Luce . . . , Ascona, 1966, I, pp. 213 ff.

Special studies: G. Coedès, Note sur une statue de princesse Siamoise de l'époque d'Ayudhya, J. of the Siam Soc., XVI/1, 1921, pp. 36–38; G. Coedès, Bronzes khmers, Paris, Brussels, 1923; H. Parmentier, L'art pseudo-khmer du Siam et le prang, J. of the Greater India Soc., IV/1, 1937, pp. 1–25, IV/2, 1937, pp. 97–116; P. Dupont, Vishnu mitrés de l'Indochine occidentale, BEFEO, XLI, 1941, pp. 233–54; P. Dupont, Le Buddha de Grahi et l'école de Chaiyâ, BEFEO, XLII, 1942, pp. 105–13; C. Feroci, Aesthetics of Buddhist Sculpture, J. of the Siam Soc., XXXVII/4, 1948, pp. 39–46; H. Parmentier, L'art architectural hindou dans l'Inde et en Extrême-Orient, Paris, 1948; L. Boribal Buribhand and A. B. Griswold, Sculpture of Peninsular Siam in the Ayudhyā Period, J. of the Siam Soc., XXXVIII/2, 1951, pp. 1–60; P. Anuman Rajadhon, Phra Xdi, J. of the Siam Soc., XL/1, 1952, pp. 66–72; Silpa Bhirasri, Thai Buddhist Art (Architecture), Thai Culture, N.S., IV, 1952 (2d ed., 1961, 3d ed., 1963); C. Feroci, Traditional Thai painting, J. of the Siam Soc., XL/2, 1952, pp. 147–55; A. B. Griswold, Buddha Images of Northern Siam, J. of the Siam Soc., XLI/2, 1954, pp. 95–152; K. B. Dhani Nivat, The Reconstruction of Rāma I of the Chakri Dynasty, J. of the Siam Soc., XLIII, 1955, pp. 21–47; P. Dupont, La statuaire pré-angkorienne, Ascona, 1955; C. N. Spinks, Siam and the Pottery Trade of Asia, J. of the Siam Soc., XLIV/2, 1956, pp. 61–111; P. Anuman Rajadhon, The Golden Meru, J. of the Siam Soc., XLV/2, 1957, pp. 65–71; E. Chand and K. Yimisiri, Thai Monumental Bronzes, Bangkok, 1957; A. B. Griswold, Dated Buddha Images of Northern Siam, Ascona, 1957; A. B. Griswold, A Warning to Evildoers, AAs, XX/1, 1957, pp. 18–28; L. Boribal Buribhand and A. B. Griswold, The Royal Monasteries and their Significance, Thai Culture, N.S., II, 1958 (2d ed., 1962); A. B. Griswold, An Unusual Siamese Bronze, AAs, XXI/1, 1958, pp. 7–8; J. Boisselier, Le Viṣṇu de Tjibuaja, AAs, XXII, 1959, pp. 210–26; Fine Arts Department, The Origin and Evolution of Thai Murals, Bangkok, 1959; C. N. Spinks, Siamese Pottery in Indonesia, Bangkok, 1959; A. B. Griswold, Notes on Siamese Art, AAs, XXIII/1, 1960, pp. 5–14; Silpa Bhirasri, Contemporary Art in Thailand, Thai Culture, N.S., VIII, 1960; Silpa Bhirasri, Thai Lacquer Works, Thai Culture, N.S., V, 1960; A.B. Griswold, Notes on the Art of Siam, No. 5: The Conversion of Jambupati, AAs, XXIV, 3/4, 1961, pp. 295–96; Silpa Bhirasri, Thai Wood Carvings, Thai Culture, N.S., XII, 1961 (2d ed., 1963); Silpa Bhirasri, Appreciation of Sukhothai Art, Thai Culture, N.S., XVII, 1962; L. Boribal Buribhand and A.B. Griswold, Thai Images of the Buddha, Thai Culture, N.S., XVIII, 1962; K. B. Dhani Nivat, The Royal Palaces, Thai Culture, N.S., XXIII, 1963; E. Lyons, Thai Traditional Painting, Thai Culture, N.S., XX, 1963; A. B. Griswold, Notes on the Art of Siam, No. 6: Prince Yudhiṣṭhira, AAs, XXVI, 3/4, 1963, pp. 215–29; J. J. Boeles, The King of Śrī Dvāravatī and his Regalia, J. of the Siam Soc., LII/1, 1964, pp. 99–114; A. B. Griswold, Prolegomena to the Study of the Buddha's Dress in Chinese Sculpture, Part I, AAs, XXVI/2, 1963, pp. 85–131; A. B. Griswold, Siam and the "Sinhalese Stupa," Buddhist Annual, Colombo, 1964, pp. 75–80; A. B. Griswold, Thoughts on a Centenary, J. of the Siam Soc., LII/1, 1964, pp. 21–54; W. G. Solheim, Pottery Manufacture in Sting Mor and Ban Nong Sua Kin Ma, Thailand, J. of the Siam Soc., LII/2, 1964, pp. 151–61; H. G. Quaritch Wales, A Stone Casket from Satinpra, J. of the Siam Soc., LII/2, 1964, pp. 217–21; G. Coedès, Documents épigraphiques provenant de Tenesserim, Felicitation Volumes of Southeast-Asian Studies Presented to H. H. Prince Dhaninivat . . . , Bangkok, 1965, II, pp. 203–09; K. B. Dhani Nivat, Hide Figures of the Rāmakien, J. of the Siam Soc., LIII/1, 1965, pp. 61–66; A. B. Griswold, The Holy Land Transported: Replicas of the Mahābodhi Shrine in Siam and Elsewhere, Paranavitana Felicitation Volume, Colombo, 1965, pp. 173 ff; A. Lamb, A Stone Casket from Satinpra: Some Further Observations, J. of the Siam Soc., LIII/2, 1965, pp. 191–95; G. H. Luce, Dvāravatī and Old Burma, J. of the Siam Soc., LIII/1, 1965, pp. 9–25; L. Malleret, À propos d'une sculpture du Musée National de Bangkok, Felicitation Volumes of Southeast-Asian Studies Presented to H. H. Prince Dhaninivat . . . , Bangkok, 1965, I, pp. 107–18; C. N. Spinks, The Ceramic Wares of Siam, Bangkok, 1965; H. G. Quaritch Wales, Müang Bon, a Town of Northern Dvāravatī, J. of the Siam Soc., LIII/1, 1965, pp. 1–7; K. Wenk, Thailändische Miniaturenmalereien nach einer Handschrift fer indischen Kunstabteilung der Staatlichen Museen Berlin, Verzeichnis der orientalischen Handschriften in Deutschland, Sup. III, Wiesbaden, 1965; Ba Shin, Buddha Images of Tai Yuan Types found in Burma, Essays Offered to G. H. Luce . . . , Ascona, 1966, II, pp. 1 ff.; J. J. Boeles, Two Yoginīs of Hevajra from Thailand, Essays Offered to G. H. Luce . . . , Ascona, 1966, II, pp. 14–29; J. Boisselier, Note sur quelques bronzes khmers d'aspect insolite, Essays Offered to G. H. Luce . . . , Ascona, 1966, II, pp. 30–36; G. Coedès, Les Mons de Dvāravatī, Essays Offered to G. H. Luce . . . , Ascona, 1966, I, pp. 112 ff.; A. B. Griswold, Imported Images and the Nature of Copying in the Art of Siam, Essays Offered to G. H. Luce . . . , Ascona, 1966, II, pp. 37–73; A. Lamb, Old Middle Eastern Glass in the Malay Peninsula, Essays Offered to G. H. Luce . . . , Ascona, 1966, II, pp. 74 ff.; K. Nimmānaheminda, Ham Yon, the Magic Testicles, Essays Offered to G. H. Luce . . . , Ascona, 1966, II, pp. 133ff.; S. J. O'Connor, Jr., An Ekamukhaliṅga from Peninsular Siam, J. of the Siam Soc., LIV/1, 1966, pp. 43–49; S. J. O'Connor, Jr., Ritual Deposit Boxes in Southeast Asian Sanctuaries, AAs, XXVIII/1, 1966, pp. 53–60; S. Paranavitana, Ceylon and Srivijaya, Essays Offered to G. H. Luce . . . , Ascona, 1966, I, pp. 205 ff.; J. Perrin, À propos d'un Buddha daté du pays môn, Essays Offered to G. H. Luce . . . , Ascona, 1966, II, pp. 149 ff.; O. W. Wolters, A Note on the Capital of Śrīvijaya during the Eleventh Century, Essays Offered to G. H. Luce . . . , Ascona, 1966, I, pp. 225 ff.

ART CENTERS AND SITES. The most important art centers and sites are listed alphabetically below.

Ayudhyā. Founded in 1350, Ayudhyā was the capital of a Tai kingdom that, from the 15th century on, dominated the whole of Siam and exercised a more or less effective suzerainty over Cambodia. The kings regarded themselves as inheritors not only of the Tai traditions of Sukhodaya (Sukhothai) but also of the Khmer traditions of Angkor. In 1569, when the city of Ayudhyā had a larger population than the London of its day, it was conquered by the Burmese, but a few years later recovered its independence. In the 17th century Ayudhyā welcomed foreign diplomats, missionaries, and merchants, several of whom have left interesting accounts of the place, but in the 18th century a reaction set in and few foreigners visited Siam. In 1767 the city was captured by the Burmese and a large part of it destroyed. When the Burmese were expelled and order was restored, the capital was transferred to Bangkok.

The city plan of Ayudhyā was governed by the nature of the site, an island at the confluence of the Lopburî (Lop Buri) River with the Mè Nâm (Jao Pyâ, Chao Phraya).

The National Museum, housed partly in the old buildings of the Candrakṣema Palace in the modern town and partly in a new building outside it, contains a large collection of antiquities, mainly sculpture, of various schools from the Dvāravatī period up to modern times. Most richly represented are the Early Ayudhyā or "Û Tòng" styles (14th–15th cent.) and the Ayudhyan National style (15th–18th cent.).

The Siamese *prāṅg* is commonly said to be a derivative of the Khmer *prāsāda*; but in fact it derives from a local type of sanctuary tower, Khmerizing but not Khmer, of a sort whose earliest surviving representative is the Devasthāna at Lopburî (10th cent.). The connecting link between that and the Ayudhyan *prāṅg* is the Mahādhātu (Great Relic) at Lopburî (13th cent.). None of the great *prāṅg* temples at Ayudhyā preserves the forms of the 14th century. Buddhaiśvarya, founded in 1353, was rebuilt in the 18th–19th centuries; Braḥ Rāma, although founded in 1369, dates for the most part from the first half of the 15th century; the *prāṅg* of the Mahādhātu, built in 1374, has disappeared. Rājapūraṇa was built about 1424 and Jayavaḍhanārāma about 1630. Architecturally, therefore, Braḥ Rāma and Rājapūraṇa date from the early Ayudhyā period, and although both were repaired in the 18th century their essential character was not changed. The crypt of Rājapūraṇa, opened in 1957, was found to contain wall paintings, hundreds of images (chiefly "Û Tòng" styles B and C), and much treasure.

In the reign of Paramatrailokanātha (1448–88) Sukhodayan forms and styles, which had been influential at Ayudhyā since the 1420s, became predominant. From this time on the type of monument most frequently built at the capital was the "Singhalese" bell-shaped stupa. The Chapel Royal, Wat Pra Sî Sanpet (Śrī Sarvajña) — built by Paramatrailokanātha on the site of the former palace of the founder of Ayudhyā — contains a great number of stupas erected over a long period of time for the relics of kings and princes; the three largest were built between 1492 and 1540 (one of them was excavated in 1932, disclosing a great deposit of images). The great bell-shaped stupa of Wat Yai Jayamaṅgala (founded in the 1360s) dates from the late 16th century. There are many others, of uncertain date. A different type of *cetiya*, bell-shaped in outline but square in plan with deeply recessed angles, was introduced in the 16th century. The two best examples are the Cetiya Śrī Sūryodaya and the Pû-kao Tòng ("the golden mountain"). The Khmerizing style of temple with a *prāṅg* was revived by King Prāsāda Tòng (r. 1630–55), founder of the Jayavaḍhanārāma. He built monuments of other types too, including an enormous "copy" of Angkor Wat at Nagara Luang (Nakòn Luang), north of Ayudhyā.

In the reign of King Nārāyaṇa (1656–88) several European ideas were introduced into Ayudhyan architecture: the radiating arch, large windows without claustra, and the use of masonry for certain residential buildings. The windows without claustra have been standard for viharas and similar structures ever since, but the other two innovations dropped out of use after King Nārāyaṇa's death. King Paramakośa (r. 1733–58) repaired a great many ancient monuments, respecting their original forms as few later restorers did.

Three enormous Buddha images deserve notice. That at Wat Pnan Chyög, on the south bank of the river opposite the town, is a seated figure of masonry and stucco about 60 ft. high, built at an unknown date and encasing an image founded in 1324. The Maṅgalapabitra, near the Chapel Royal, is another seated figure, made of bronze plates over a masonry core; it is about 45 ft. high and probably dates from the 16th century. The reclining Buddha at the Lokyasuddhārāma (17th–18th cent.) is made of brick and stucco and is over 90 ft. long.

BIBLIOG. E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, Paris, 1900–04, II, pp. 320–22; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, pp. 42 ff.; Damrong Rajanubhab and E. Seidenfaden, Siam Guidebook: Bangkok, Bang-Pa-In, Ayudhya and Lopburi, Bangkok, 1930; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1931, pp. 396–99; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed., Rutland and Tokyo, 1963); E. W. Hutchinson, Adventurers in Siam in the 17th century, London, 1940 (with bibliog.); T. Amatyakul, Guide to Ayudhyā and Bang-Pa-In, Bangkok, 1956; L. Boribal Buribhand, Excavations at the Chapel Royal at Ayudhyā, J. of the Siam Soc., XLIII/2, 1956, pp. 136–38; Fine Arts Department, Citrakarma lèh Śilpavatthu nai Kru Braḥ Prāṅg Vāt Rājapūraṇaḥ [Paintings and works of art from the crypt of Vāt Rājapūrana], Bangkok, 1958; G. Coedès, Note sur une stèle indienne d'époque Pāla découverte à Ayudhyā, AAs, XXII/2, 1959, pp. 9–14; P. Dupont, l'archéologie mône de Dvāravatī, Paris, 1959, I, p. 270, II, fig. 500; Fine Arts Department, Braḥ Buddharūpa lèh Braḥ Bimba nai Kru Braḥ Prāṅg Vāt Rājapuraṇaḥ, Bangkok, 1959; T. C. Bowie, ed., The Arts of Thailand, Bloomington, 1960 (cat.), pp. 139–53; G. Coedès, Découvertes récentes à Ayudhyā, Arts asiatiques, VIII/2, 1961, pp. 145–51; Fine Arts Department, Guide to the Ayudha National Museum, Chao San Praya, Bangkok, 1963; L. Sterenstein, "Krung Kao": The Old Capital of Ayutthaya, J. of the Siam Soc., LIII/1, 1965, pp. 83–121.

Bâng Ba-in. At this site, on the left bank of the Mè Nâm (Jao Pyâ) about 12 mi. south of Ayudhyā, a summer palace stood in the 17th century. The present palace, dating from the reigns of Rāma IV (1851–68) and Rāma V (1868–1911), has an elaborate reception hall in the Chinese taste, presented by the Chinese merchants of Bangkok, and a charming water pavilion in the best Tai style.

Bibliog. Damrong Rajanubhab and E. Seidenfaden, Siam Guidebook: Bangkok, Bang-Pa-In, Ayudhya and Lopburi, Bangkok, 1930; T. Amatyaku, Guide to Ayudhyā and Bang-Pa-In, Bangkok, 1956.

Bangkok (Grung Tép, Krung Thep, "city of the devas"). The old town of Bâng Gòk ("place of the *Elaeocarpus madopetalus*"), often referred to by European writers of the 17th century as "Bancok," became the capital of Siam in 1782.

Seen from the river, the Royal Palace presents a fantastic silhouette of soaring roofs and spires. Two of the three halls of audience, the Tuṣitamahāprāsāda and the Amarindravinicchaya, are fine examples of traditional architecture (late 18th cent.). The precinct of the Chapel Royal (Wat Pra Gèo Amarakata), in the eastern portion of the palace, is enclosed in a rectangular gallery that is enlivened with wall paintings of the successive episodes of the *Rāmakirti* (Siamese version of the *Rāmāyaṇa*). The *uposathāgāra*, built in 1785, has excellent wall paintings of the mid-19th century. The place of honor in this building is occupied by the palladium of the kingdom, the "gem-stone Buddha image" (15th cent.?), usually called in English the "Emerald Buddha" although the material is certainly not emerald (perhaps it is jade or jasper). Behind the *uposathāgāra* are two small viharas containing wall paintings of the history of Ayudhyā and the history of Bangkok; the first of these, by the mid-19th-century painter In Kóng, are particularly fine. The Mahāmaṇḍapa is a tall structure covered with glazed tiles. The precinct also contains the pantheon, the library, numerous *cetiyas*, and other buildings, as well as a model of Angkor Wat built in the late 1860s.

The largest monastery in the kingdom, and one of the most beautiful, is the Jetavanārāma (Wa Pó), the greater part of which dates from the reign of Rāma III (1824–51). It contains more than 600 bronze Buddha images of life size or larger brought from Ayudhyā and the old kingdom of Sukhodaya in the reign of Rāma I (1782–1806) and many others brought later; it also has a reclining Buddha over 130 ft. long, made in the 1840s, of gilt lacquer over stucco and masonry, the soles of the feet inlaid with mother-of-pearl. The Sudarśana Monastery (Wat Sutat), which dates mainly from the first half of the 19th century, is notable for its fine wall paintings (with genre scenes introduced into episodes from the life of the Buddha) and for an important Buddhist relief of the Dvāravatī period, brought from Nagara Paṭhama (Nakhon Pathom). The Monastery of the Excellent Abode (Pavaranivesa) has mid-19th-century wall paintings in a romantic semi-European style by In Kóng, a 15th-century stone Buddhapāda ("footprint" of the Buddha) from Sukhodaya, a Sukhodaya reclining Buddha, and two Buddha images from Biṣṇuloka (Pitsnulók, Phitsanulok). There is a traditional belief that these last two images were cast at the same time as the Jinarāja, but the style indicates a later date. In the Monastery of the Fifth King (Peñcamapabitra), built about 1900, an important collection of Buddha images is exhibited. The Rājapabiṭṭa Monastery, built in the reign of Rāma IV (1851–68), is noted for its elegant mandapa and other buildings faced with ceramic tile and for its funerary monuments in diverse styles commemorating various princes. Among Bangkok's many other interesting monasteries are Wat Rājapratiṣṭha, Wat Srakeśa (with its huge artificial mountain, the Pû-kao Tòng), Wat Mahādhātu, and Wat Sâm Plüm.

The former palace of the Wang Nâ prince (late 18th and early 19th cent.) is largely occupied by the National Museum. One of the old palace buildings, the Buddhaiśvarya hall, has wall paintings (late 18th cent.) that are among the finest in the kingdom; another, the Vajirañāna Library, houses a splendid collection of stone inscriptions, old manuscripts, and lacquered bookcases. The Damnak Dèng ("red pavilion"), the residence of the widow of Rāma II (r. 1806–24), was brought from Tonburī (Dhon Buri, Dhanapurī) and reerected here. The compound is dominated by the new buildings of the National Theater and the National Museum. The museum collections, housed partly in the new buildings and partly in the Buddhaiśvarya hall and the old residence of the Wang Nâ prince, are extremely rich. They include mesolithic and neolithic artifacts; bronze drums and other objects of the protohistoric period; sculpture in stone, bronze, terra cotta, and stucco, ranging from the Dvāravatī period to modern times; votive tablets and pottery of all periods; "Svargaloka" and Sukhodaya glazed ceramics; Chinese porcelains made for the Siamese market (18th–19th cent.); wood carvings, chariots, sedan chairs, ornaments from royal barges; the paraphernalia of monastic and court life; and coins, jewelry, puppets, games, and musical instruments.

Between the National Theater and the river is Wat Pra Gèo Wang Nâ, the old chapel of the Wang Nâ prince, with its beautiful wall paintings of the history of the "Ceylon" Buddha; this structure should not be confused with the Chapel Royal (Wat Pra Gèo Amarakata).

Suan Pak-gât Palace, the residence of H.R.H. the Princess of Nagara Svarga (open to the public several days a week), contains a masterpiece of Ayudhyan architecture and graphic art, the Lacquer Pavilion, which formerly stood in a monastery on the bank of the Mè Nâm (Jao Pyâ) south of Ayudhyā. Another building in the palace houses a collection of sculpture and other antiquities. A third is used for exhibitions of the works of contemporary Siamese painters.

J. H. W. Thompson's house at 6, Soi Kasem II, also open to the public several days a week, is an assemblage of seven houses built in traditional Siamese architectural style, dating from the 18th and 19th centuries. It forms an appropriate setting for the owner's remarkable collection of sculpture of various periods from Dvāravatī to Ayudhyā, Siamese paintings of the 17th to 19th centuries, and Siamese and Chinese ceramics.

Bibliog. G. Coedès, Recueil des inscriptions du Siam, Bangkok, 1924–29, I, pp. 151 ff.; G. Coedès, Les collections archéologiques du Musée National de Bangkok, Paris, Brussels, 1928; Damrong Rajanubhab, Wat Benchamabopit and its Collection of Images of the Buddha, J. of the Siam Soc., XXII/1, 1928, pp. 19–28; R. Lingat, History of Wat Saket, J. of the Siam Soc., XXIII/3, 1929–30, pp. 125–34; R. Lingat, History of Wat Mahādhātu, J. of the Siam Soc., XXIV/1, 1930, pp. 1–27; Damrong Rajanubhab and E. Seidenfaden, Siam Guidebook: Bangkok, Bang-Pa-In, Ayudhya and Lopburi, Bangkok, 1930; E. Seidenfaden, Guide to Bangkok, 2d. ed., Bangkok, 1932; K. B. Dhani Nivat, The Inscriptions of Wat Phra Jetubon, J. of the Siam Soc., XXVI/2, 1933, pp. 143–70; R. Lingat, History of the Wat Pavaraniveça, J. of the Siam Soc., XXVI/1, 1933, pp. 73–102; Fine Arts Department, General Guide to the Vajirañān Library and the National Museum, Bangkok, 1951; L. Boribal Buribhand, Guide to the Art Exhibits in the National Museum, Bangkok, 1952; J. Rangthong and K. Korwong, A New Guide to Bangkok, 3d ed., Bangkok, 1954; A. B. Griswold, Medieval Siamese Images in the Bo Tree Monastery, AAs, XVIII/1, 1955, pp. 46–60; R. Cauvin, Thaïlande, Brussels, 1958; Fine Arts Department, Sampātiśilpa cāk Parivena Khu'aṅ Bhūmibala [Art works from the area of Bhūmibala], Bangkok, 1958; J. Rangthong, A Week in Bangkok, Bangkok, 1958; M. B. Wells, Guide to Bangkok, Bangkok, 1958; Fine Arts Department, The Origin and Evolution of Thai Murals, Bangkok, 1959; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.); H. R. H. Princess Chumbhot of Nagara Svarga, The Lacquer Pavilion at Suan Pakkat Palace, Bangkok, 1960; A. B. Griswold, The Lacquer Pavilion, AAs, XXIII/1, 1960, pp. 5–6; A. B. Griswold, King Mongkut of Siam, New York, 1961; R. Lingat, Le Wat Rājapratiṣṭha, AAs, XXIV, 3/4, 1961, pp. 314–23; M. C. Subhadradis Diskul, Le pavillon de laque du Palais de Suan Pakkad, Arts asiatiques, VIII/1, 1961, pp. 27–42; 6, Soi Kasem II, Bangkok, 2d ed., Bangkok, 1962; E. Lyons, Thai Traditional Painting, Thai Culture, N.S., XX, 1963; E. Lyons, The Tosachāt in Thai Painting, Thai Culture, N.S., XXII, 1963; Tourist Organizations, Das Profil Thailands, Bangkok, 1963; Fine Arts Department, Guide to the National Museum, Bangkok; A. B. Griswold, Thoughts on a Centenary, J. of the Siam Soc., LII/1, 1964, pp. 21–54; A. B. Griswold, The Rishis of Wat Pó, Felicitation Volumes of Southeast-Asian Studies Presented to H. H. Prince Dhaninivat . . . , Bangkok, 1965, II, pp. 321–28.

Bejrapurī (Petburî, Phet Buri). The province of Bejrapurī, long in the orbit of Dvāravatī, became part of the Khmer empire in the 12th century (it is mentioned in 1191 in the Prah Khan inscription at Angkor). At the end of the 13th century it was part of the kingdom of Sukhodaya, being mentioned in the epilogue to Râm Kamhèng's inscription. From 1350 on it formed part of the kingdom of Ayudhyā.

Sculpture of Dvāravatī style has been found at or near the town of Bejrapurī. Wat Gampèng Lèng is a Khmer temple dating from about 1200. Several monasteries contain structures dating from the Ayudhyā period. Wat Yai Suvaṇṇārāma has an *uposatha* hall with wall paintings of the first half of the 17th century, a vihara with paintings of the early 18th and late 19th centuries, and an interesting set of pictures by the last four generations of artists trained in the monastery. Wat Gō Gèo Suddhārāma has wall paintings dating

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

from 1734. The *prāṅg* of the Great Relic Monastery dates from the 19th century. On a hill at the edge of the town stands the Nagaragiri Palace, built in a delightful mixture of Siamese style and *chinoiserie* by Rāma IV (r. 1851–68).

BIBLIOG. E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, Paris, 1902–12, III, p. 463; E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 208 ff.; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.), pp. 168, 172, fig. 160; E. Lyons, Thai Traditional Painting, Thai Culture, N.S., XX, 1963; J. Boisselier, Les peintures murales de Wat Ko Keo Sutthārām (Phetburî), Felicitation Volumes of Southeast-Asian Studies Presented to H. H. Prince Dhaninivat . . . , Bangkok, 1965, III, pp. 339–45; Fine Arts Department, Guide to Phra Nakhon Khiri, Phetburi, Bangkok, n.d.

Biṣṇuloka (Pitsnulók, Phitsanulok). Mentioned in the Sukhodaya inscriptions under the name of Sòng Kwè ("confluence"), this town was one of the bastions of the old Sukhodaya kingdom. Its chief prosperity was in the 15th century and later, when it was the seat of the Ayudhyan viceroy who ruled the Sukhodayan provinces, and for a time (1463–88) it was the residence of the king of Ayudhyā.

The "Golden Cetiya" (Cetiya Tòng), near the Araññika Monastery, probably dates from the 1360s. The Great Relic Monastery, whose *prāṅg* dates from 1482, houses the famous image called "Braḥ Buddha Jinarāja," a work of the postclassic school of Sukhodaya. The vihara and galleries preserve much of the spirit of Sukhodayan architecture. There is a small museum in this monastery. The Culāmaṇi temple near Biṣṇuloka was built (or rebuilt) in 1464 in Khmerizing style with beautiful stucco ornamentation.

BIBLIOG. J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 404 ff., pls. XLV–XLVII, LXIII, LXIV; A. B. Griswold, Notes on the Art of Siam, No. 6: Prince Yudhiṣṭhira, AAs, XXVI, 3/4, 1963, pp. 215–29.

Bnam Ruṅ (Pnom Rung, Phanom Rung). One of the most important Khmer temples in Thailand.

BIBLIOG. E. Aymonier, Le Cambodge, Paris, 1900–04, II, pp. 133–36; E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, Paris, 1902–12, II, pp. 203–14; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed. Rutland and Tokyo, 1963), pp. 58, 69–71; L. P. Briggs, The Ancient Khmer Empire, Tr. of the Am. Philosophical Soc., N.S., XLI/1, 1951, pp. 182.

Chaiyâ (Jaiyā). The main *cetiya* of the Great Relic Monastery, though much restored, retains something of its Śrīvijayan form (9th–10th cent.?); it is built of brick laid without mortar, now largely hidden by stucco. Of similar construction is Wat Gèo, of which only a fragment survives. The neighborhood of Chaiyâ has yielded a quantity of sculpture attributable to Śrīvijaya (now Bangkok, Nat. Mus.) and to later schools (much of it now in the Great Relic Monastery in Chaiyâ).

BIBLIOG. E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 277 ff.; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, pp. 128 ff.; G. Coédès, Les collections archéologiques du Musée National de Bangkok, Paris, 1928; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 378–93; P. Dupont, Le Bouddha de Grahi et l'école de Chaiyâ, BEFEO, XLII, 1942, pp. 105–13; L. Boribal Buribhand and A. B. Griswold, Sculpture of Peninsular Siam in the Ayudhyā Period, J. of the Siam Soc., XXXVIII/2, 1951, pp. 1–60; J. Boisselier, Le Viṣṇu de Tjibuaja, AAs, XXII, 1959, pp. 210–26; P. Dupont, L'archéologie mône de Dvāravatī, Paris, 1959, I, pp. 21, 204, II, figs. 477, 478; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind. 1960 (cat.), p. 48.

Chieng Mai. The Tai monarch Meng Râi founded Chieng Mai ("the new city") in 1296 and made in the capital of Lân Nâ. Its golden age of art and letters was initiated by King Tiloka (r. 1441–87). It was conquered by the Burmese in the mid-16th century. In the early 18th century they were expelled, and for a time the city maintained a precarious independence. Toward the end of the century, after being devastated in further wars with the Burmese, it was deserted for two decades. It was rebuilt under a new dynasty that ruled under the suzerainty of Bangkok; eventually, together with the rest of Lân Nâ, it was incorporated in the kingdom of Siam.

The city plan is practically square, about 3,300 ft. on each side. The walls were built at the end of the 18th century. The old city may have been larger: the chronicles speak of it as being 1,000 fathoms by 900, which, if the fathom then had the same value as now, would make about $1^1/_4$ by $1^1/_8$ mi.

The Foursquare Cetiya (Cetiya Sî Liem) was built by King Meng Râi. Its form echoes that of the larger of the two monuments at Wat Kūkut (see Lampûn), but it has been spoiled by a modern restoration. The *cetiya* at Wat Chieng Man was also founded by Meng Râi; the present monument, with elephant supports, is an encasement dating from 1471, somewhat altered by later restorations.

At the center of the old city was the Mahācetiya Luang or Rājakūṭa, begun in 1401 and finished in 1481 on a modified plan. It was the magical center of the kingdom, a pantheon with shrines for the Buddha images that were the palladiums of vassal princes, kept there as hostages for their loyalty. The Mahācetiya, which was originally over 350 ft. high, was severely damaged by an earthquake in the 16th century. It was a solid monument of laterite and brick, consisting of a pyramidal basement with elephant supports, a main story, and a stupa on top. The main story had a projection on each face pierced with a deep niche for a Buddha image; the niches were roofed with radiating vaults, which are fairly common in the architecture of Lân Nâ but practically unknown in other parts of Siam before modern times. The stupa was round with an octagonal base.

The Flower Garden Monastery (Wat Suan Dòk, Pupphārāma) was built in 1371 for the same Mahāthera Sumana for whom Wat Pra Yün had been built at Lampûn (Lamphun, Haripuñjaya) two years before. The main *cetiya* probably dates from that time but was refurbished in the 1950s in an unsightly manner.

Wat Umoṅga, about 2 mi. west of the city, has an extensive system of artificial caves dug into a cliffside, containing cells for meditation; according to tradition, they were made by King Gü Nâ (r. 1355–88). On top of the hill above them is a bell-shaped stupa, which may date from the same reign or a little later, with beautiful stuccowork of uncertain date.

The Red Forest Monastery (Rattavanamahāvihāra, Wat Bâ Dèng), near Wat Umoṅga, was restored and enlarged by Tiloka (r. 1441–87) for the forest-dwelling monks (*araññavāsi*) of the New Ceylon order. The *cetiya*, now much decayed, has a main story with five niches for Buddha images on each face, a design recalling the lower story of the Foursquare Cetiya; but on top, instead of four more stories, there is a bell-shaped stupa.

The Monastery of the Seven Spires (Wat Jet Yòt, Mahābodhārāmā), built for the same order, was begun in 1455 (see SIAMESE ART). Besides the exquisite *cetiya* which is a "copy" of the Mahābodhi Temple at Bodhgaya, there are remnants of the Sattamahāṭṭhāna, the "Seven Stations" commemorating the seven weeks following the Enlightenment.

The Monastery of the Lion Lord (Wat Pra Sing) was founded in the 14th century. It is impossible to surmise the original form of the *cetiya*, as it has been several times encased. The statue for which the monastery is named is kept in a crypt in the *uposathāgāra*; it is a bronze image of the seated Buddha, about 4 ft. in height, popularly believed to have been cast in Ceylon in the 2d century (judging from the style, it was cast in Lân Nâ in the late 15th century; the head is a modern restoration). Another bronze image, 7 ft. 8 in. high, cast at the Tapodārāma in 1492, occupies a niche at the west end of the large vihara. In one of the chapels there is an ornate reliquary in the form of a mandapa, about 16 ft. high, that may date from the 16th century, with later restorations. The charming library was built in archaistic style in 1920; the lower story is of masonry, ornamented with stucco divinities inspired by those at the Monastery of the Seven Spires, while the upper story is of teak paneling lacquered in red with gilt trim.

Apart from their monumental architecture, the Chieng Mai monasteries are notable for their wooden viharas and *uposathāgāras* with curtain walls beautifully carved in teak and with tall overlapping roofs edged with gilded bargeboards in the form of nagas. These buildings — which despite their air of venerable antiquity mostly date from the late 19th and the 20th century — are honorable reminders of an ancient tradition.

In addition to the monasteries mentioned above, the following deserve to be noted, either for their architecture or for the antiquities they contain: Wat Pâ Bong, Wat Prāsāda, Wat Loka, Wat Rampöng, Wat Gâlogòt, Wat Gao Dü, Wat Siri Göt, and Wat Jaya Braḥ Kirti.

The Chieng Mai Buddhist Institute possesses a small collection of antiquities and a large collection of manuscripts. The private collection of Kraiśrī Nimmānaheminda of Chieng Mai includes some remarkable terra cottas of the Mòn period from Lampûn, as well as miscellaneous antiquities of the Tai period from various parts of Lân Nâ (manuscripts, ceramics, wood carvings, etc.).

BIBLIOG. G. Coedès, Documents sur l'histoire politique et religieuse du Laos occidental, BEFEO, XXV, 1925, pp. 1–202; R. S. Le May, An Asian Arcady: The Land and Peoples of Northern Siam, Cambridge, 1926; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 437–47; E. W. Hutchinson, Sacred Images of Chiengmai, J. of the Siam Soc., XXVIII/2, 1935, pp. 115–42; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed., Rutland and Tokyo, 1963); E. W. Hutchinson, The Seven Spires, J. of the Siam Soc., XXXIX, 1951, pp. 1–68; A. B. Griswold, Dated Buddha Images of Northern Siam, Ascona, 1957, pp. 35 ff.; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind.,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1960 (cat.), pp. 121 ff., fig. 94; A. B. Griswold, The Holy Land Transported: Replicas of the Mahābodhi Shrine in Siam and Elsewhere, Paranavitana Felicitation Volume, Colombo, 1965, pp. 173 ff.; M. Sullivan, The P'ra Sila of Chieng Mai and its Replicas, Essays Offered to G. H. Luce..., Ascona, 1966, II, pp. 175 ff.

Chieng Râi. This old town was Meng Râi's capital in the 13th century before he took Lampûn and founded Chieng Mai. A brick-and-stucco monument popularly believed to contain his relics appears to be a copy of the Mahācetiya Luang at Chieng Mai. The *cetiya* of the Seven Spires, probably built during the Burmese occupation (mid-16th to late 18th cent.), may have been inspired by a recollection of the Mohābodhi Temple at Pagan (it is quite unrelated to the *cetiya* of the same name at Chieng Mai).

Bibliog. J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 424 ff., pl. LXXIX; A. B. Griswold, The Holy Land Transported: Replicas of the Mahābodhi Shrine in Siam and Elsewhere, Paranavitana Felicitation Volume, Colombo, 1965, pp. 173 ff.

Chieng Sèn. The city was founded in 1327. Holt Hallett, who visited the site in the 1880s, describes it as an irregular parallelogram, 11,057 ft. long and about 3,900 ft. wide, protected on three sides by double ramparts and a ditch; the Mè Kóng (Mekong) River had swept away the fortifications on the eastern side. Recent surveys by the Department of Fine Arts confirm his description.

The city, which was deserted for almost the whole of the 19th century, contains numerous ruins. The group called Wat Pra Jao Lân Tòng is probably the Wat Sî Sòng Möng of the chronicles, the magical center of the principality in the 17th and 18th centuries during the Burmese occupation. Some scholars think that Chieng Sèn was the seat of Meng Râi's ancestors in the 12th century and earlier, but no antiquities prior to the 14th century have been discovered there.

Bibliog. H. S. Hallet, A Thousand Miles on an Elephant in the Shan States, London, Edinburgh, 1890; C. Notton, Annales du Siam, Paris, 1926–32, III, p. 78; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 425–28, pl. LXXX; A. B. Griswold, Five Chieng Sèn Bronzes of the 18th century, Arts asiatiques, VII, 1960, pp. 3–24, 101–20, 199–204; K. Nanadki Nandakīc, An Inscribed Model Vihāra from Chieng Sèn, Essays Offered to G. H. Luce..., Ascona, 1966, II, pp. 121–32.

Dhātu Bnam (Tât Phom, That Phanom). This Buddhist monument on the right bank of the Mè Kóng dates from the second half of the 9th century or the early 10th century. It is apparently the oldest structure of any consequence left standing in Thailand. The remarkable reliefs in carved brick are contemporary with the monument. The cupola was added in the 17th century.

Bibliog. R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed., Rutland and Tokyo, 1963), pp. 54–61.

Dong Śrīmahābodhi (Sî-mahâ-pót, Si Maha Phot). It has recently been established that this site was continuously occupied from protohistoric times up to the end of the Angkorian period. Quantities of beads and potsherds have been discovered; relations with Funan have been revealed by the discovery of jewelry similar to that found at Oc Eo. The place was later within the cultural orbit of Dvāravatī and then became part of the Khmer empire.

Gâ Long. The kilns at Gâ Long, in Chieng Râi province, were probably founded in the mid-15th century by potters from the kilns at Śrī Sajjanālaya (where the "Svargaloka" ware was made), and for the next hundred years they produced some excellent glazed ceramics (chiefly "painted wares").

Bibliog. K. Nimmānaheminda, Sangambaeng Glazed Potteries, J. of the Siam Soc., XLIII/2, 1955, pp. 138–41; K. Nimmānaheminda, Sankampaeng Glazed Pottery, Bangkok, 1960; C. N. Spinks, A Ceramic Interlude in Siam, AAs, XXIII/2, 1960, pp. 95–110.

Gampèng Pet (Kāṃbèṅ Bejra=Vajra, Kamphaeng Phet). A center of art production of the Sukhodaya postclassic school, wrongly identified by Fournereau (1895–1908) with Śrī Sajjanālaya. The city, probably founded in the 1360s, has the form of an irregular quadrangle, the long sides of which (one concave, the other convex) are over a mile long, while the ends are $^1/_4$ and $^1/_8$ mi. long. The city walls, of which a large part remains standing, were 15 to 20 ft. high, made of huge blocks of laterite, defended by a series of bastions, and surrounded by a moat. Both inside and outside the town are the ruins of numerous Buddhist monasteries of the late Sukhodaya and the Ayudhyā period. Some splendid bronze statues of Hindu divinities were discovered in the Brahman temple in the town, including a famous image of Śiva cast in 1510 (Bangkok, Nat. Mus.).

Bibliog. L. Fournereau, Le Siam ancien: Archéologie, épigraphie, géographie, 2 vols., Paris, 1895–1908, I, pp. 179–202, pls. XLIX, L, LII–LVI; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, pp. 62 ff.; A. B. Griswold, The Buddhas of Sukhodaya, Arch. of the Chinese Art Soc. of America, VII, 1953, pp. 5–41.

Kórât (Nagara Rājasimā, Nakhon Ratchasima). The city, founded in the Ayudhyā period in a region that had been part of the Khmer empire in the 12th and 13th centuries, is of rectangular plan. A large portion of the city walls is still standing.

An interesting collection of antiquities discovered at Sûng Nön and in various other districts of the province is exhibited in the Mahāviravaṃśa Museum.

In the vicinity of Kórât is Bnam Van (Pnom Wan, Phanom Wan), the site of one of the most important Khmer temples in Thailand.

Bibliog. E. Aymonier, Le Cambodge, 3 vols., Paris, 1900–04, II, pp. 101–36, 107–13; E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, 3 vols., Paris, 1902–12, II, pp. 199–315, 258–65; E. Seidenfaden, Complément à l'inventaire descriptif des monuments du Cambodge pour les quatre provinces du Siam oriental, BEFEO, XXII, 1922, pp. 55–99; L. P. Briggs, The Ancient Khmer Empire, Tr. Am. Philosophical Soc., N.S., XLI/1, 1951, p. 180; Fine Arts Department, Plan and Report of the Survey and Excavations of Ancient Monuments in Northeastern Thailand, Bangkok, 1959; M. Vallibhotama, Guide to Pimâi and Antiquities in the Province of Nagara Rājasīmā (Khórat), Bangkok, 1962; R. S. Le May, A Concise History of Buddhist Art in Siam, 2d ed., Rutland, Tokyo, 1963.

Lampang. Founded shortly after Lampûn by a scion of the same Mòn dynasty, Lampang was also conquered by the Tai in the late 13th century. Its monasteries, many of them old foundations, have few surviving pre-19th-century structures There are small museums at Wat Chieng Râi and Wat Lampang Luang. At the Island Monastery (Wat Gŏ) there is a beautiful bronze reclining Buddha, cast in 1602. Several small bronzes in private collections, representing the seated Buddha wearing the royal attire, can be identified as replicas of the black stone image of the Buddha Sikhi that was the palladium of the principality.

Bibliog. R. S. Le May, An Asian Arcady: The Land and Peoples of Northern Siam, Cambridge, 1926; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed., Rutland and Tokyo, 1963).

Lampûn (Lamphun, Haripuñjaya). An old town in northern Siam, about 12 mi. southeast of Chieng Mai. According to the chronicles it was founded in the 7th century by the Mòn princess Cammadevī from Lopburî, the wife of the ruler of Rāmaññadesa (the Mòn country). G. Cœdès corrects the chronology, suggesting the 8th century for the date of founding. It remained under the rule of a Mòn dynasty until 1292, when it was conquered by the Tai.

The town plan, defined by a moat and ramparts of uncertain date, is a slightly deformed oval, suggesting the "conch" shape that according to legend inspired it. It is like the town plan that prevailed in Dvāravatī.

The Great Relic Monastery (Mahādhātucetiya) is said to have been founded in the 12th century by King Ādiccarāja, who built a *cetiya* in the form of a *prāsāda* for the relic. In the early 13th century the *cetiya* was encased in a larger one by Sabbāsiddhi (Sabbādisiddhi), and this was in turn encased in a large stupa by the Tai in the mid-15th century. The monument owes its present form to a rebuilding in the early 20th century, when Burmese architecture was popular in northern Siam. In the monastery precinct is an older *cetiya* resembling the larger of the two monuments of Wat Kūkut; it may be a replica of Sabbāsiddhi's monument, erected at the time when the latter was encased. Of the other buildings in this monastery, the oldest date from the late 18th century; most are modern. Housed in two of them is a small museum with an important collection of antiquities (inscriptions, votive tablets, stuccoes, and fragments of stone and terra-cotta sculpture of the Mòn period; and inscriptions, votive tablets, sculpture, bronzes, wood carvings, and ceramics of the Tai period).

The Mahāvana Monastery, just west of the moat, is an ancient site, judging from a few chance finds there, including a stone deer in the Dvāravatī style, evidently intended to accompany a stone Wheel of the Doctrine, and a small bronze Buddha in the Burmese style of Pagan.

Northwest of the city stands Wat Kūkut (Kukkuṭrāmanā), now officially named Wat Cammadevī, with its two old *cetiyas*. The larger one assumed its present form in 1218, when it was rebuilt after an earthquake. It is a slender pyramid of five stories; the top, which must have included the stupa proper and a spire, is broken off. Sixty niches — three on each face of each story — contain standing images of the Buddha, made partly of laterite and partly of terra cotta, with a coating of stucco. Four of the five stories have miniature stupas at the corners. As the eye travels upward the stories decrease in height, with their niches and images diminishing in proportion. A happy optical illusion results, which increases the apparent height of the monument.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Beside it is a smaller monument, built on an octagonal plan. The main story has a single niche on each face containing a standing image, and above are two or three shallow stories with a small niche on each face holding a seated image; the crowning story is so decayed that it is impossible to determine its original form. The octagonal monument may be a replica of the old *cetiya* that is encased inside the larger one; if so, it too dates from 1218 but reproduces a form dating from the previous century.

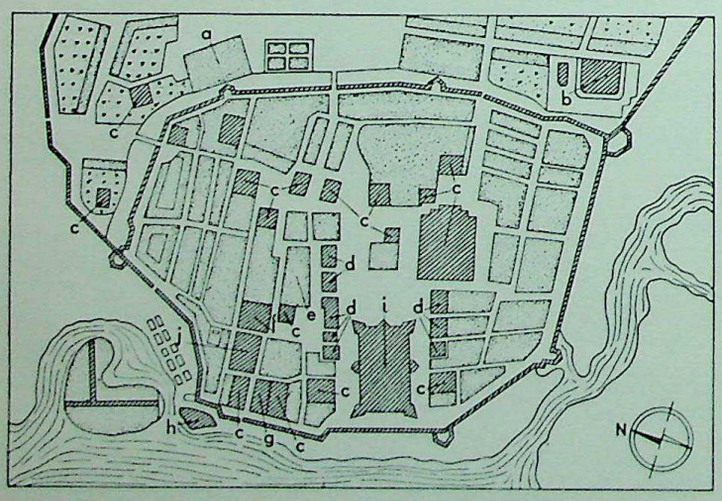
About 5/8 mi. east of the city is the Pra Yün Monastery. In Mòn times there was a stucco image of the standing Buddha here, facing east; its height was 18 cubits (ca. 30 ft.), corresponding to the legendary height of the Buddha himself. In 1369, at the behest of the Mahāthera Sumana, who came from Sukhodaya to settle here at the invitation of King Gü Nâ, three companion images facing the other cardinal directions were added, and a pavilion (mandapa) was built to shelter the four statues. In the second decade of the 20th century the pavilion, which had fallen into ruin, was demolished, and a solid *cetiya* in Burmese style, about half its height, was built over the remains, the fragments of the four images being buried inside it. This *cetiya*, which the scholarly world has generally taken to date from the 14th century, is really the masterpiece of a Lampûn architect, Nân Pañña Möng, who died in 1949.

Bibliog. G. Coedès, Documents sur l'histoire politique et religieuse dn Laos occidental, BEFEO, XXV, 1925, pp. 16–26, 75, pls. IV, VIII; C. Notton, Annales du Siam, 3 vols., Paris, 1926–32, III, p. 13; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 428–37, pls. LXXXII–LXXXV, figs. 58–61; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind. (cat.), 1960.

Lopburî (Lop Buri, Lapburī). Lopburî, the Lavapura or Lavo of the chronicles and the Louvo of La Loubère, ambassador of Louis XIV, was the seat of an important principality in Dvāravatī times, if not the capital of Dvāravatī itself. Its earliest monument is the Devasthāna, a triad of brick sanctuary towers, two of which (10th cent.) are, with the exception of Dhātu Bnam, probably the oldest buildings left standing in Thailand (the third is a 17th-century copy). At Wat Nagara Kośā there is a huge brick base of uncertain date, which supported a structure (a stupa?) that has disappeared.

Shortly after 1000 Lopburî fell under Khmer domination. After intervals of independence it was again part of the Khmer empire in the first half of the 12th century and for a third time in the reign of Jayavarman VII of Cambodia, who mentions the place under the name Lavodayapura in the Prah Khan inscription in 1191, when it was probably the chief stronghold of Khmer power in central Siam. The triad of sanctuary towers known as Prāṅg Sâm Yòt dates from Jayavarman VII's reign (with some later restorations). After his death (ca. 1220?) Lopburî was again an independent kingdom, probably allied to Sukhodaya in the latter part of the 13th century. The sanctuary of the Great Relic (Mahādhātu) dates from this period but was doubtless built on the ruins of an earlier temple; architecturally, it marks the transition to the Siamese *prāṅg*.

Rāmādhipati I, who founded the kingdom of Ayudhyā in 1350, seems to have inherited the province of Lopburî from his father. His son Rāmeśvara (Ramesuan) was viceroy there from 1350 to 1388 (except for a brief interval ca. 1369). The place suffered severely in the Burmese wars of the 16th century but revived after their conclusion. The ruin known as Sân Sûng, a short distance east of Prāṅg Sâm Yòt, is of uncertain date (15th cent.?); it consists of a huge laterite basement, apparently intended for a *prāṅg* that was never built. Also of uncertain date is the *prāṅg* at Wat Nagara Kośā, west of the large brick basement; it is of archaizing style, inspired by the architecture of the Great Relic.



Lopburî according to a French map of the 17th century: (*a*) House and garden of Phaulkon; (*b*) observatory tower of the Jesuits (now known as San Polo); (*c*) Buddhist monasteries; (*d*) royal stables; (*e*) royal garden; (*f*) "Pra Klang's house"; (*g*) "Khorasan building," Persian ambassador's residence; (*h*) market; (*i*) palace enclosure; (*j*) French ambassador's residence, now called "Phaulkon's House" (*from Hutchinson, 1934*).

Lopburî was the favorite residence of King Nārāyaṇa (r. 1656–88). With the aid of French engineers and architects he built a large palace there, partly in European style, where he spent several months of each year. He was the first Siamese monarch to use masonry for residential construction in place of the traditional wood. As a result the ruins of several of the palace buildings — as well as those of his European-style country house at Talé Chupsòn east of Lopburî — are still visible. He also rebuilt and strengthened the city walls, repaired the old monuments, and built several new structures (viharas, galleries, etc.) in the Great Relic Monastery. For Louis XIV's ambassador, the Chevalier de Chaumont, whom he received at Lopburî in 1685, he built a European-style house (FIG. 47). Its ruins are now commonly known as "Phaulkon's House": perhaps after the ambassador's departure the place was acquired by the Kings' Greek Prime Minister ("Pra Klang") Constantius Phaulkon. The latter also owned a house and garden shown northeast of the inner wall of the city (*a*), and the "Pra Klang's house" (*f*) presumably belonged to him too.

After Nārāyaṇa's death the palace remained unoccupied for a long time. It was restored by Rāma IV (r. 1851–68) and given the name Nārāyaṇarājaniveśa. Part of the palace has been converted into a museum, where an important collection of antiquities discovered in the locality may be seen; they range from prehistoric and protohistoric times, through the Dvāravatī and Khmer periods and the periods of independence, up to the Ayudhyā and Bangkok periods.

Bibliog. E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, 3 vols., Paris, 1902–12, II, pp. 322, 328; L. de Beylié, Architecture hindoue en Extrême-Orient, Paris, 1907; E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 197, 245 ff.; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, pp. 53 ff.; E. Seidenfaden, An Excursion to Lopburî, J. of the Siam Soc., XV/2, 1922, pp. 66–77; Damrong Rajanubhab and E. Seidenfaden, Siam Guidebook: Bangkok, Bang-Pa-In, Ayudhya and Lopburi, Bangkok, 1930; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 398–401; E. W. Hutchinson, Phaulkon's House at Lopburi, J. of the Siam Soc., XXVII/1, 1934, pp. 1–7; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed., Rutland and Tokyo, 1963), pp. 48–78, 135–43; E. W. Hutchinson, Adventurers in Siam in the Seventeenth Century, London, 1940; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind. 1960 (cat.); M. C. Subhadradis Diskul, Guide to Ancient Monuments in Lopburi, Bangkok, 1961; Fine Arts Department, The National Museum, Lopburi, Bangkok, n.d.

Müang Fâ Dèt (Mu'ang Fadaet). This site in the province of Kālasindhu was probably the seat of a principality within the orbit of Dvāravatī. The remnants of city ramparts can be seen, as well as mounds that appear to be the remains of monuments; the most interesting discovery is a series of stone bas-reliefs of Buddhist subjects (ca. 9th cent.), in a style related to that of Dvāravatī.

Bibliog. M. C. Subhadradis Diskul, Mueng Fa Daed, an Ancient Town in Northeast Thailand, AAs, XIX, 3/4, 1956, pp. 362–67.

Müang Sémâ. In the Sûng Nön district of Kòrât province there are the remains of a town of irregular oval plan ("conch-shaped"?) over a mile in length, known as Müang Sémâ because it contains a number of rough megaliths set up in such a way as to suggest the boundary stones (*sémâ*) that are used to mark off the consecrated areas of *uposatha* halls. The town was surrounded by ramparts of earth and laterite and a moat. Within the enclosure are several ruins of laterite buildings. A 9th-century inscription was discovered nearby. Not far away, in the Klòng Kwâng Monastery, are a stone Wheel of the Doctrine and a colossal reclining Buddha of laterite and stone; their style is closely related to that of Dvāravatī.

Bibliog. Fine Arts Department, Plan and Report of the Survey and Excavations of Ancient Monuments in Northeastern Thailand, Bangkok, 1959, p. 60; M. Vallibhotama, Guide to Pimâi and Antiquities in the Province of Nagara Rājasīmā (Khôrat), Bangkok, 1962, pp. 12 ff., fig. 5.

Müang Sing. The ruins of what is almost certainly the westernmost Khmer temple ever built are located on the Kwè Nòi (the west branch of the Mè Kóng), not far from the Burma frontier. The temple, built of laterite, stood in the center of a city of square plan, surrounded by a wall of earth and laterite and a series of outer defenses in the form of earthen ramparts. The complex dates from the late 12th century and was never finished. The place is mentioned in the Prah Khan inscription of 1191 under the name Jayasiṁhapura.

Bibliog. E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, 3 vols., Paris, 1902–12, III, pp. 460–63; E. Lunet

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 206 ff.

Nagara Paṭhama (Nakhon Pathom). The huge Paṭhamacetiya here was begun in the 1860s and completed in the 20th century. It encases an older stupa of hemispherical form, with a *prāṅg* superimposed; a replica, built at the time of the encasement, can be seen nearby. It is possible that the inner stupa encases a series of others, of which the innermost may go back to Dvāravatī times or earlier; but its sanctity and inaccessibility alike prevent excavation.

The present *cetiya*, which is bell-shaped and covered with glazed yellow tiles, is a structure of great beauty. It is surrounded by a circular gallery, in which are exhibited a quantity of statuary, stone Wheels of the Doctrine, and other Dvāravatī antiquities discovered in the neighborhood by chance or by excavation. The courtyard is a garden shaded by ancient trees. A small vihara has been turned into a museum, which contains stucco reliefs and architectural fragments of the Dvāravatī period. In another vihara next to it is one of the masterpieces of Dvāravatī sculpture, a stone Buddha seated in the "European" posture, brought from Wat Braḥ Meru in the 19th century.

The ruins at Wat Braḥ Meru (Pra Mén) were excavated by P. Dupont in 1939–40; he compares their plan (XIII, FIG. 11) with that of certain temples at Pagan. The principal feature of Wat Braḥ Padona (Pra Batón) is a *cetiya* of uncertain date (recently restored) in the form of a truncated pyramid surmounted by a *prāṅg* (the latter was apparently added in the 19th century). A ruined *cetiya* in the same precinct, known as Cūlapadona, was excavated in 1939–40 by P. Dupont and Luang Boribal Buribhand, who suggest that it may have been of the same type as the larger of the two monuments at Wat Kūkut in Lampūn. Several other sites in and around Nagara Paṭhama have yielded Dvāravatī antiquities.

BIBLIOG. L. Fournereau, Le Siam ancien: Archéologie, epigraphie, géographie, 2 vols., Paris, 1895–1908, I, pp. 117–36; E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 216 ff.; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, pp. 105 ff.; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 395–96; P. Dupont, L'archéologie mône de Dvarāvatī, Paris, 1959; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.), pp. 40 ff.

Nagara Śrī Dharmarāja (Nakòn Sî Tammarât, Nakhon Si Thammarat, Ligor). The main *cetiya* of the Great Relic (probably early 13th cent.) is a large bell-shaped stupa of "Singhalese" type, believed to encase a much older monument. The basement, protected by a covered gallery, is decorated with a series of projecting bays with standing Buddha images of stucco in tall niches; between the bays are lower niches from which the foreparts of stucco elephants emerge. These motifs may go back to the Śrīvijaya period but have been much restored. In the same precinct is a small *cetiya* of which J. Y. Claeys (1931) says: "Its plan, that of a large monument reduced to the size of a miniature, recalls the Candi Kalasan in central Java. . . ." This miniature is generally believed to be a copy of the main *cetiya* of the Great Relic before it was encased. The "Yakṣa Cetiya" in the eastern part of the town dates from the 17th century and may be a copy of the Great Relic as it appeared at that time.

Exhibited in a museum in the Great Relic Monastery is a collection of antiquities discovered in the locality, including two statues in a variant of the Dvāravatī style and a few Śrīvijayan bronzes. The palladium of the city, the "Ceylon" Buddha, is housed in a chapel in the precinct of the provincial administration building. It is popularly believed to have been made in Ceylon in the 2d century; the real date is uncertain (16th–17th cent.?), and the image was doubtless made locally. Monasteries and private collections in the town possess a number of copies, one of which is dated 1694.

BIBLIOG. E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 229 ff.; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, pp. 145 ff.; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 373–77; G. Coedès, Les états hindouisés d'Indochine et d'Indonésie, Paris, 1948 (new ed., 1964); L. Boribal Buribhand and A. B. Griswold, Sculpture of Peninsular Siam in the Ayudhyā Period, J. of the Siam Soc., XXXVIII/2, 1951, pp. 1–60; P. Dupont, L'archéologie mône de Dvāravatī, Paris, 1959; P. Wheatley, The Golden Khersonese: Studies in the Historical Geography of the Malay Peninsula before A. D. 1500, Kuala Lumpur, 1961.

Nagara Svarga (Nakòn Sawan, Nakhon Sawan). In the 13th and 14th centuries Nagara Svarga was one of the chief vassal cities of Sukhodaya. On top of Kao Gop ("frog hill") there is a stone Buddhapāda and at the foot of the hill a charming little vihara and a *cetiya*, all dating from the late Sukhodaya period.

BIBLIOG. T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.), pp. 90, 102, fig. 67.

Nân. The princes of Nân were vassals of Sukhodaya in the late 13th century and its allies in the 14th in the struggle against Ayudhyā. The *cetiya* of Wat Pyâ Wat, of the same type as the larger of the two monuments at Wat Kūkut in Lampûn, is of uncertain date. In the 15th century Nân was the seat of a flourishing school of sculpture in the Sukhodaya tradition, as attested by numerous examples, especially four great bronze Buddha images cast in 1426. Nân was conquered by Chieng Mai in 1449, and its sculptors doubtless contributed to the formation of the style of Chieng Mai's golden age.

BIBLIOG. A. B. Griswold, New Evidence for the Dating of Sukhodaya Art, AAs, XIX, 3/4, 1956, pp. 240–50; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.), pp. 135, 173, figs. 75, 81, 105.

Payao (Müang Phayao). In the 15th and 16th centuries Payao was an important vassal state under the suzerainty of Chieng Mai. Prince Yudhiṣṭhīra, scion of the old ruling house of Sukhodaya, had been governor of Biṣṇuloka under the suzerainty of Ayudhyā; in order to escape that yoke he transferred his loyalties to King Tiloka and was awarded Payao as an appanage. It seems he brought with him a number of potters from the celebrated "Svargaloka" (Sawānkalók) works and established kilns near Payao, where some fine ceramics have been found in recent years. Payao was also the seat of a considerable school of stone sculpture, the only important one in northern Siam. The Buddhist Institute has established a small museum in one of the monasteries.

BIBLIOG. A. B. Griswold, Buddha Images of Northern Siam, J. of the Siam Soc., XLI/2, 1954, pp. 95–152; K. Nimmānaheminda, Sankampaeng Glazed Pottery, Bangkok, 1960; A. B. Griswold, Notes on the Art of Siam, No. 6, Prince Yudhiṣṭhira, AAs, XXVI, 3/4, 1963, pp. 215–29.

Pimâi (Bimāya). One of the three greatest surviving Khmer temples in Thailand is the Mahayana Buddhist one at Pimâi. Built in the first half of the 12th century, it was recently restored by B.-P. Groslier in collaboration with the Siamese Department of Fine Arts.

BIBLIOG. E. Lunet de Lajonquière, Inventaire descriptif des monuments du Cambodge, 3 vols., Paris, 1902–12, II, pp. 278–98, figs. 89–99; E. Seidenfaden, An Excursion to Phimai, a Temple City in the Khorat Province, J. of the Siam Soc., XVII, 1923, pp. 1–19; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.), pp. 73–74, figs. 39–41; M. Vallibhotama, Guide to Pimai and Antiquities in the Province of Nagara Rājasīmā (Khórât), Bangkok, 1962.

Pong Dük (P'ong Tuk). Excavations conducted in 1927 by G. Coedès and G. Manfredi disclosed important vestiges of Dvāravat architecture at Pong Dük in Rājapurī (Rat Buri) province (now in the province of Kāñcanapurī). Villagers have discovered numerous antiquities at the same site, including a Ptolemaic bronze lamp (2d–1st cent. B.C.) and several bronze Buddha images of Dvāravatī style (late 8th/9th cent.), which are now in Bangkok (Nat. Mus.). One of the images is usually attributed to the art of Amarāvatī; in reality it is probably a Dvāravatī copy of a Pala model and should be ascribed to the same date as the others.

BIBLIOG. G. Coedès, The Excavations at P'ong Tük and their Importance for the Ancient History of Siam, J. of the Siam Soc., XXI/3, 1927–28, pp. 195–209; C. Picard, La lampe alexandrine de P'ong Tuk (Siam), AAs, XVIII/2, 1955, pp. 137–49; P. Dupont, L'archéologie mône de Dvāravatī, Paris, 1959, pp. 103 ff., figs. 340, 341; Fine Arts Department, Guide to Antiquities at Tambol Pong Tuk and Pra Thaen Dong Rang in the Province of Kanchanaburi, Bangkok, n.d.

Rājapurī (Râtburî, Rat Buri). The province is rich in antiquities from the Dvāravatī and later periods. In Jayavarman VII's time it was part of the Khmer empire (mentioned in the inscription of Prah Khan, 1191); at the end of the 13th century it belonged to Sukhodaya (mentioned in the epilogue to Râm Kamhèng's inscription); it was one of the components of the kingdom of Ayudhyā, founded in 1350. The Great Relic Monastery is built on a site where there was a Dvāravatī temple (a few vestiges of which recently came to light during the course of repairs) and later a Khmer temple (of which numerous remains are visible, including a large part of the precinct wall). The *prāṅg* of the Great Relic appears to date from the late 14th or the early 15th century and is one of the few surviving from that period that has escaped subsequent drastic alteration. Exhibited in the monastery is a small collection of antiquities discovered in the locality.

At Kû Bua, a few miles from the town of Rājapurī, there are the remains of a town dating from the Dvāravatī period. Its plan, defined by the remnants of ramparts and a moat, is a slightly irregular rectangle whose length is more than twice its width, suggesting the *dīrgha* plan that some Indian authorities praise as auspicious and others condemn as disastrous. Many remains of monuments, both inside and outside the town, have been excavated in recent years, shedding new light on Dvāravatī architecture. The excavations have yielded

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

much beautiful sculpture and architectural ornament in terra cotta and stucco.

About 5 mi. northwest of Rājapurī is the "Rishi's Cave" (Tâm Rüsî), a natural grotto in the limestone hill called Kao Ngû ("serpent hill"). Carved in relief on the wall of the cave is a figure of the Buddha seated in the "European" posture, of Dvāravatī style, accompanied by an inscription (ca. 7th cent.) attributing the work to "the holy rishi Śrī Samādhigupta."

Bibliog. E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, p. 115; P. Dupont, L'archéologie mône de Dvāravatī, Paris, 1959, p. 272, figs. 498, 499; Fine Arts Department, Guide to Antiquities Found at Koo Bua, Ratburi, Bangkok, n.d.

Sân Gampèng. In 1952 Kraiśrī Nimmānaheminda of Chieng Mai discovered over 80 kiln sites in the district of Sân Gampèng about 15 mi. west of Chieng Mai. Scattered about were quantities of sherds and wasters — as well as a few pieces in good condition — of glazed "painted wares" and celadons resembling those from the "Svargaloka" kilns at Śrī Sajjanālaya. The Sân Gampèng kilns were probably started by skilled potters carried off from Śrī Sajjanālaya in the mid-15th century.

Bibliog. K. Nimmānaheminda, Sangambaeng Glazed Potteries, J. of the Siam Soc., XLIII/2, 1955, pp. 138–41; K. Nimmānaheminda, Sankampaeng Glazed Pottery, Bangkok, 1960; C. N. Spinks, A Ceramic Interlude in Siam, AAs, XXIII/2, 1960, pp. 95–110; A. B. Griswold, Notes on the Art of Siam, No. 6, Prince Yudhiṣṭhira, AAs, XXVI, 3/4, 1963, pp. 215–29.

Sarapurī (Sara Buri). At Brah Pāda ("the sacred footprint") near Sarapurī a complex of shrines has grown up around the Buddhapāda discovered at the beginning of the 17th century. The mandapa, of unknown date, has been several times restored. The balustrade of the main stairway leading up the hill to it terminates in a splendid bronze motif representing a polycephalous naga (17th cent.). There is a small museum in the precinct.

Bibliog. Prince Bidyalaṅkarana, The Buddha's Footprint, J. of the Siam Soc., XXVIII/1, 1935, pp. 1–14; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.), p. 155, fig. 141.

Songklâ (Songkhla, Singora). Some of the finest wall paintings in the kingdom are to be seen in the vihara of the Majjhimāvāsa Monastery (ca. 1845). A collection of antiquities dug up at Songklâ, Satīng Pra, and other places in the province is displayed in a small museum in the same monastery. They include neolithic artifacts, Śrīvijayan bronzes, and many pieces of later date.

Bibliog. S. J. O'Connor, Jr., An Early Brahmanical Sculpture at Soṅkhla, J. of the Siam Soc., LII/2, 1964, pp. 163–69.

Śrī Deb (Sî Tép, Si Thep). At Śrī Deb in the province of Bejrapūṛṇa (Petchabûn, Phetchabun) there are the remains of an old town of irregular oval plan containing Khmer ruins of the 11th century. Some of the sculpture found at the site, however, goes back to the 7th century and is of uncertain affinity. A Khmer inscription of the late 6th or 7th century has been discovered about 6 mi. away.

Bibliog. J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 402–03; G. Coedès, Note sur quelques sculptures provenant de Srīdeb, Etudes d'orientalisme publiées par le Musée Guimet à la mémoire de Raymonde Linossier, Paris, 1932, I, pp. 159–64; H. G. Quaritch Wales, The Exploration of Srī Deva, an Ancient City in Indo-China, Indian Art and Letters, X/2, 1936, pp. 1–39; H. G. Quaritch Wales, Exploring Srī Deva, Asia, XXXVI, 1936, pp. 658–60; G. Coedès, Les états hindouisés d'Indochine et d'Indonésie, Paris, 1948, p. 38.

Śrī Sajjanālaya (Sî Satchanalai). The site, about 10 mi. north of the present town of Svargaloka (Sawānkalók, Sawankhalok), consists of two parts — the deserted walled city of Śrī Sajjanālaya (sometimes called Old Svargaloka) and the ruins of Chalieng, about a mile and a half to the east.

Chalieng, located on a narrow point of land where the river Yom describes a hairpin turn, was the seat of the provincial administration in the late 12th and early 13th centuries, when the region was part of the Khmer empire. Some time after the Tai gained their independence the seat of the administration was removed to Śrī Sajjanālaya proper, a mile and a half upstream where the Yom is broken by a series of rapids. From the time when the kingdom of Sukhodaya was at the height of its power in the late 13th century under Râm Kamhèng to its capitulation to Ayudhyā in 1378, Śrī Sajjanālaya was ruled by an *uparāja* (viceroy), generally the eldest son of the king, while the king himself resided at Sukhodaya. Under Ayudhyan rule Śrī Sajjanālaya declined in importance; eventually the place was abandoned and the population moved to the present town of Svargaloka.

The site of Chalieng is now dominated by the *prāṅg* of the Mahādhātu (Great Relic), an Ayudhyan monument built in the 15th century, very probably on top of the ruins of the principal Khmer temple of the place. A little west of it is a small Khmer temple of the *dharmaśālā* type, now known as Wat Jao Jan; it dates from the reign of Jayavarman VII. The precinct of the Mahādhātu is surrounded by a "railing" of enormous blocks of laterite, built by Râm Kamhèng between the years 1290 and 1292. The colossal stucco statue of the walking Buddha was almost certainly erected by him, as were the viharas and galleries surrounding the Mahādhātu (later restored and modified). The beautiful little mandapa of laterite and stucco is attributed to him by tradition, but the attribution is of doubtful value. The huge octagonal stupa of Mòn inspiration is of unknown date.

The Tai city of Śrī Sajjanālaya was much larger. Its walls enclose an irregular quadrangle, of which the longest side (southwest) is about 3/4 mi. in length and the shortest (northwest) about 1/2 mi. The walls, built of large blocks of laterite, average about 16 ft. in height. They are surrounded by a moat on three sides, while the river flows along the fourth (northeast).

At the center of the city is the *cetiya* of Châng Lòm ("surrounded by elephants"), a handsome bell-shaped stupa with elephant supports, begun by Râm Kamhèng in 1285 and completed in 1290. Southeast of it, and on the same axis, is the complex known as Cetiya Jet Tèo ("the seven rows of *cetiya*s"), dominated by a "lotus-bud" tower built in the 1340s in imitation of the newly remodeled Mahādhātu at Sukhodaya (see below). Surrounding it are smaller *cetiya*s of a dozen or more different forms (probably built within the two or three decades following the building of the lotus-bud tower, as funerary monuments for members of the viceregal family). Farther along the same axis are Wat Suan Gèo Udayāna Yai ("monastery of the large precious garden") and Wat Nâng Pyâ ("the queen's monastery"), each dominated by a bell-shaped stupa. At these two monasteries, as well as at Châng Lòm and Cetiya Jet Tèo, there are traces of viharas and other monastic buildings. One wall of the vihara at Wat Nâng Pyâ still stands; it has tall slitlike openings in lieu of windows and is decorated with beautiful stuccowork. Northeast of the Cetiya Jet Tèo is the platform on which the viceregal palace stood, with the Lak Müang at its southwest corner. Scattered through the town and outside the walls are the remains of numerous other monasteries, of which the two most interesting from an architectural point of view are Wat Suan Gèo Udayāna Nòi ("monastery of the lesser precious garden"), north of the palace, and Wat Sara Paduma ("lotus-pond monastery"), south of the city at the foot of Mt. Siripabbata.

Stretching north along the river from the north corner of the city walls are two complexes of kilns. The first, at Bâ Yâng about 1/4 mi. from the city wall, specialized in architectural ornament made of glazed "Svargaloka" stoneware. The second, at Go Nòi, some 2 mi. farther on, made a wide variety of products — figurines, bowls, jars, vases, and many other forms — some in brown-glazed "Chalieng" ware, some in "Svargaloka" celadons and other monochromes, some in "Svargaloka" painted ware. The kilns at Go Nòi had probably been producing the "Chalieng" wares long before the Tai gained their independence (the nomenclature is confusing because, as far as is known, there were never any kilns at Chalieng; but it is too well established to change). The new techniques that resulted in the production of the "Svargaloka" wares were probably introduced in the early 14th century by potters imported from Lungch'üan in China. All these wares continued to be produced until the mid-15th century, when the potters were carried off to northern Siam.

Bibliog. R. S. Le May, A Visit to Sawankalok, J. of the Siam Soc., XIX/2, 1925, pp. 63–82; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, p. 411, pl. LXXI; G. Coedès, Les premières capitales du Siam au XIIIe et XIVe siècles, Arts asiatiques, III/4, 1956, pp. 243–67; C. N. Spinks, Siam and the Pottery Trade of Asia, J. of the Siam Soc., XLIV/2, 1956, pp. 61–111; C. N. Spinks, A Ceramic Interlude in Siam, AAs, XXIII/2, 1960, pp. 95–110; A. B. Griswold, Notes on the Art of Siam, No. 6, Prince Yudhiṣṭhira, AAs, XXVI, 3/4, 1963, pp. 215–29; Fine Arts Department, Guide to the Town of Srī Satchanalai, Bangkok, n.d.

Subarṇapurī (Supănburî, Suphan Buri). The present town of Subarṇapurī, on the river of the same name, appears to have been founded in the 15th century; but antiquities of much greater age have been found at many sites in the province, especially at Û Tòng (see below). "Svarṇapura," mentioned in 1191 in the Prah Khan inscription as part of the Khmer empire, and "Subarṇabhūmi," listed in the early 13th century as a possession of Râm Kamhèng, appear to refer to some town to which the administration of the province was transferred when Û Tòng was abandoned in the 11th century. The same site was doubtless the place that gave its name to "Prince Û Tòng" (the future Rāmādhipati I of Ayudhyā), rather than the site now called Û Tòng.

At Wat Pārileyyaka there is a colossal Buddha image, about 65 ft. high, seated in the "European" fashion, which may date from

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the Dvāravatī period but has been so much restored that its date is uncertain. The *prāṅg* of the Great Relic probably dates from the 15th century. Numerous stone Buddha images of "Ū Tòng" B and C styles have been found in the neighborhood. Some of the latter are exhibited in the monasteries of the town and others in the National Museum at Ū Tòng.

BIBLIOG. E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, pp. 224 ff., figs. 18–20; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, pp. 100 ff.

Sukhodaya (Sukhothai). After liberating themselves from Khmer domination the Tai established the kingdom of Sukhodaya (ca. second quarter of the 13th cent.), which had as its capital the city of the same name in the valley of the Yom. In the late 13th century, under King Râm Kamhèng, Sukhodaya dominated the whole of Siam except Lân Mâ, but declined rapidly in the reign of his son Lö Tai (r. 1299?–ca. 1345). Under Lü Tai (1347–ca. 1373) it regained some of its power. After his death there was a long struggle with Ayudhyā. His son was forced to capitulate in 1378 but revolted soon after. Ayudhyā reconquered the kingdom about 1410 and reduced it to the status of a province in 1438. Sukhodaya was still one of the foremost cities of the kingdom of Ayudhyā in the 17th century but suffered badly in the wars of the 18th century and was finally abandoned. In 1892 when L. Fournereau visited the place, it was inhabited only by a few villagers living among the ruins, most of which were overgrown with forest. In recent years the Department of Fine Arts has cleared the site, taken steps to preserve the monuments, and erected a museum for the antiquities discovered in the old city and its environs (stone statues dating from the Khmer period; inscriptions, bronzes, ceramics, wood carvings, stuccoes, etc., of the Sukhodaya and Ayudhyā periods).

The oldest structure left standing at Sukhodaya is the Śāla Devarakṣa or Sân Dâ Pâ Dèng (San Ta Pha Daeng), a Khmer temple in the northern part of the city dating from the reign of Sūryavarman II (first half of the 12th cent.). Several stone statues of Hindu divinities in the style of Angkor Wat have been discovered in it.

The Khmer temple at Wat Pra Pâi Luang, north of the city, dates from the reign of Jayavarman VII (1181–ca. 1220?). It consisted of a triad of *prāsāda*s of laterite and stucco, only one of which is still standing. The principal object of worship in the temple was a stone statue of the "Jayabuddhamahānātha," the fragments of which were discovered in the ruins. The three *prāsāda*s at Wat Śrī Svāya, in the southern part of the city, were begun in the reign of Jayavarman VII but were left unfinished when the Khmer withdrew.

The *cetiya* of the Mahādhātu (Great Relic), which was the magical center of the kingdom, was probably built by the first king of Sukhodaya (Śrī Indrāditya), in the form of a quincunx of laterite towers of Khmerizing style. In the 1340s Lö Tai remodeled it, using brick and stucco in accordance with the Ceylon tradition, as opposed to the Khmerizing tradition of laterite and stucco that had prevailed before. He encased the central tower in a tall basement, on top of which he built a "lotus-bud" tower (i.e., a miniature *prāṅg* whose false stories are replaced by a bulbous dome in the form of a lotus bud, recalling a reliquary casket). He allowed the laterite towers at the cardinal points to remain but gave them a rich new stucco ornamentation of Singhalese style. At the subcardinal points he added new towers of brick and stucco.

The city was rectangular in plan. It was surrounded by three concentric earthen ramparts with intervening moats (in accordance with the usual practice, the ramparts must have had wooden stockades along the top). The inner rampart measures about 6,000 by 5,400 ft. There was a gate near the middle of each side, protected by a laterite bastion. All this is much as described by Râm Kamhèng in his inscription in 1292.

The physical defenses were supplemented by magical ones. Râm Kamhèng's stone throne, which he installed in the Sugar Palm Grove in the precinct of the Royal Palace in 1292, was charged with such strong magic that the tradition of its potency survived for over six centuries; when the future King Rāma IV discovered it in 1833 in the ruins of the palace it was still an object of fear and reverence to the villagers. The Lak Müang, a pillar animated by a powerful tutelary sprite, stood north of the Mahādhātu. The shrine of the chief tutelary sprite of the kingdom, Pyâ Kapûng, on a mountain southwest of the city, has not survived. The loyalty of the vassals was guaranteed by keeping their palladiums at the capital. Two ancient stone statues discovered at Sukhodaya, of styles quite different from anything else found in the neighborhood, may have been brought there by Râm Kamhèng. One of them, of Dvāravatī style dating from about the 7th century (Bangkok, Nat. Mus.), was perhaps the palladium of Subarṇapurī; the other, of Śrīvijaya style and of somewhat later date (Sukhodaya, Nat. Mus.), may have been the palladium of Nagara Śrī Dharmarāja. After the remodeling of the Mahādhātu in the 1340s, copies of the lotus-bud tower were erected in the principal cities of the kingdom to form a further spiritual link with the capital, assuring the vassals of the king's protection and confirming their loyalty to him.

The palace buildings, being of wood, have vanished; but the site of the most important group of them is marked by a brick platform measuring 40 by 150 ft. and 5 ft. high. The great majority of ancient buildings at Sukhodaya that have left any trace were dedicated to Theravāda Buddhism, and a few to the Hindu cults that were the indispensable support of good government even in Buddhist countries.

The typical Buddhist monastery at Sukhodaya stood in a rectangular precinct, with the main entrance at the east. It was dominated by a *cetiya* that stood on the west–east axis, with a vihara to the east and an *uposathāgāra* to the west. The *cetiya* was most often a stupa of "Singhalese" design, with a bell-shaped dome, a square *karmikā*, and a tapering spire (*chattra*). The vihara (assembly hall) and the *uposathāhāra* (ordination hall) were architecturally similar, but the latter was consecrated and set about with boundary stones (*simā*, *sémâ*) at the cardinal and subcardinal points. These buildings were rectangular in plan, with the long axis following the main west–east axis of the precinct. Their walls, made of wood or masonry, had tall slits in lieu of windows. The interior was a nave, often with one or more pairs of side aisles that were separated from it by rows of wooden posts or masonry columns that helped to support the roof. The latter was of wood, covered with tiles of terra cotta or white-glazed ceramic and terminating at either end in negas or other mythical creatures (either carved in wood or made of glazed ceramic). Sometimes the *uposathāgāra* — or indeed the whole monastery — was built on an island in a pond, as ordinations performed in a place surrounded by water were deemed less liable to be invalidated by some technical flaw. The monks' cells (*kuti*) were wooden huts.

The main *cetiya* was not always a stupa, and many departures from the typical plan are found. At the Mahādhātu after the mid-1340s the main *cetiya* was the lotus-bud tower surrounded by other lesser towers; in the precinct L. Fournereau counted traces of nearly two hundred structures, the majority of them probably small funerary monuments for members of the royal family. Other structures included two *uposathāgāra*s, six viharas, a mandapa, and three libraries. Wat Pra Pâi Luang was another large monastery, to which additions were made over a long period of years; it was dominated at the west end by the Khmer temple and at the other by a pyramidal *cetiya* with rows of niches on each story containing stucco images of the seated Buddha in the preclassic style of the third quarter of the 13th century. A number of viharas and other structures were also erected in the precinct without any rigid plan. At Wat Drapâng Ngön ("silver pond monastery") the *cetiya* was a copy of the lotus-bud tower at the Mahādhātu, but without the lesser towers; at Wat Braḥ Pāda Nòi ("monastery of the smaller footprint"), west of the city, the *cetiya* reproduced the form of a cloth-covered reliquary (probably 16th–17th cent.).

Instead of a *cetiya* there was sometimes a triad of towers. At Śrī Svāya the three half-built laterite *prāsāda*s left by the Khmer faced toward the south, and the Tai did not change the orientation. At first, it seems, they surrounded them with pavilions of light materials and used the place as a Brahman temple; but later on (15th cent.?) they turned it into a Buddhist monastery, completed the *prāsāda*s in brick on a design more like that of a *prāṅg*, and built an *uposathāgāra* and two viharas on the north–south axis.

Another possible substitute for a *cetiya* was a mandapa. The mandapa at Wat Sî Chum ("gathering place of the rishis") has, as its principal object of worship, a huge seated image called "the Unshakable," and there is a famous set of Jātaka engravings on stone inside the tunnel-like stairway within the thickness of the wall. The exterior walls of the mandapa at Wat Drapâng Tòng-lâng ("monastery of the coral-tree pond") are ornamented with false doors treated as niches for beautiful stucco relief scenes from the Buddha's life (mid-14th cent.).

Outside the city were several monasteries of "forest-dwelling" monks (*araññavāsi*). To the west was Wat Sapân Hin ("stone-causeway monastery"), so called because of the stone path leading up to it; it was the seat of the Saṅgharāja (Patriarch) in Râm Kamhèng's time; the remains of a vihara can still be seen there, as well as a colossal stucco Buddha image (several times restored). Also west of the city was Wat Bâ Mamuang ("mango-grove monastery"), founded by King Lö Tai about 1341 and greatly enlarged by his son Lü Tai in 1361 for the Saṅgharāja from the Mòn country, whom he invited to settle there; very little survives of the buildings today. Attached to Wat Bâ Mamuang was the Devālayamahākṣetra, or Hindu temple, built of brick in the form of a mandapa, which contained, in all probability, the magnificent bronze statues of Śiva and Viṣṇu cast by Lü Tai in 1349 (now in Bangkok, Nat. Mus.). South of the city was Wat Jetubana, of uncertain date (probably 14th cent.); the design is unusual, with the walls made of large blocks of schist. Instead

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

of a *cetiya* there was a mandapa (?) containing stucco images of the Buddha in the four *iriyāpatha* (walking, standing, seated, reclining), one on each face of the huge central pier. Also south of the city was Wat Śrībicitrakittikalyārāma, the greater part of which was built by the Queen Mother Tilakaratna in 1403, shortly before Sukhodaya lost its independence for the second time.

North of the city are the remains of a complex of kilns that produced glazed painted stonewares (dishes, bowls, etc.). It is thought they were established by a group of potters imported from Tz'ŭ-chou in China at the end of the 13th century, a little before the group from Lung-ch'üan settled at Śrī Sajjanālaya.

BIBLIOG. L. Fournereau, Le Siam ancien: Archéologie, épigraphie, géographie, 2 vols., Paris, 1895–1908, I, pp. 207, 257 ff., pls. LXXI–LXXXIV; II, pls. I-XXXI; E. Lunet de Lajonquière, Le domaine archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1909, p. 200; E. Lunet de Lajonquière, Essai d'inventaire archéologique du Siam, B. de la Commission Archéol. de l'Indochine, 1912, p. 70; J. Y. Claeys, L'archéologie du Siam, BEFEO, XXXI, 3/4, 1931, pp. 414–20; R. S. Le May, A Concise History of Buddhist Art in Siam, Cambridge, 1938 (2d ed., Rutland and Tokyo, 1963), pp. 77 ff., 112 ff.; A. B. Griswold, The Buddhas of Sukhodaya, Arch. of the Chinese Art Soc. of America, VII, 1953, pp. 5–41; G. Coedès, L'art siamois de l'époque de Sukhodaya (XIIIe–XIVe siècles), circonstances de son évolution, Arts asiatiques, I, 1954, pp. 281–302; A. B. Griswold, L'époque de Sukhodaya, Arts asiatiques, I, 1954, pp. 303–08; G. Coedès, Les premières capitales du Siam aux XIIIe–XIVe siècles, Arts asiatiques, III, 1956, pp. 243–67; A. B. Griswold, New Evidence for the Dating of Sukhodaya Art, AAs, XIX, 3/4, 1956, pp. 240–50; H. G. Quaritch Wales, The Origins of Sukhodaya Art, J. of the Siam Soc., XLIV/2, 1956, pp. 113–24; T. C. Bowie, ed., The Arts of Thailand, Bloomington, Ind., 1960 (cat.), pp. 88 ff., figs. 69, 84–89; C. N. Spinks, A Ceramic Interlude in Siam, AAs, XXIII/2, 1960, pp. 95–110; Silpa Bhirasri, Appreciation of Sukhothai Art, Thai Culture, N.S., XVII, 1962; M. C. Subhadradis Diskul, Guide to the Ramkhamhaeng National Museum, Sukhothai, Bangkok, 1964.

Tonburî (Dhanapurī, Dhon Buri). Situated on the right bank of the Mè Nâm (Jao Pyâ) opposite Bangkok, Tonburî was the capital from the late 1760s to 1782. It is full of beautiful old monasteries, dating from the latter half of the 18th century and the first half of the 19th. Outstanding is Wat Aruṇ, with its huge *prāṅg* incrusted with porcelain and its elaborate mythological figures. Excellent wall paintings are to be seen in several monasteries, including Wat Tòng Suvarṇārāma, Wat Tòng Dharmajāti, and Wat Tuṣitārāma. Others have fine Buddha images brought from Sukhodaya, Biṣṇuloka, and other old cities.

BIBLIOG. D. Yupho, A Literary Excursion in Dhanapurī, Bangkok, 1962 (in Siamese); E. Lyons, Thai Traditional Painting, Thai Culture, N.S., XX, 1963.

Û Tòng (Uthong). The name Û Tòng ("golden boatyard" or "golden cradle") is historically the Siamese equivalent of Sanskrit Subarṇapurī (see above) and hence more or less interchangeable with it. As a toponym, however, the name Û Tòng applies nowadays to an old site about 17 mi. southwest of the present town of Subarṇapurī. The archaeological importance of the site, to which H. R. H. Damrong Rajanubhab first drew attention in the early 20th century, has proven to be far greater than he could have any means of knowing; but his choice of the name Û Tòng for the site was not entirely happy. He believed it was the city abandoned by "Prince Û Tòng" (Rāmādhipati I) when the latter founded his new capital at Ayudhyā in 1350 (see above); but recent studies show that the place was abandoned in the 11th century and not reoccupied until the 17th.

Chance finds and unauthorized excavations at the site revealed much archaeological material during the middle decades of the 20th century. The first official excavation was conducted in 1936 by H. G. Quaritch Wales. A series of excavations conducted by the Department of Fine Arts from 1958 onward and by J. Boisselier in 1964–66 shows that the site was continuously occupied from prehistoric times to the end of the Dvāravatī period. Discoveries include neolithic artifacts; pottery sherds ranging over a long period of time; prehistoric and protohistoric beads, jewelry, seals, lamps, etc. (some of them attributed by Boisselier to the Funan period on the basis of similarity to material discovered by L. Malleret at Oc Èo); terracotta figurines; small terra-cotta Buddhist reliefs of the 4th–5th centuries; and a wealth of bronzes and other material from the Dvāravatī period. Û Tòng was evidently the site of an important town during the Funan period and of one of the greatest cities of the Dvāravatī period. Boisselier's researches (1965) have shed much new light on Dvāravatī architecture (especially the plans and methods of construction of monuments), provided a better chronology, and revealed a strong artistic influence from Śrīvijaya (specially in the Buddhist bronzes) in the 8th–9th centuries. The site has yielded no relics of the Khmer occupation or of the early Ayudhyā period (the name "Û Tòng" given to the antiquities of the early Ayudhyā period discovered elsewhere is taken from that of the "Prince of Û Tòng," not from the topographical site). In the 17th century the site was resettled, and the ruins of at least one old monument (Site 1) were encased in the basement of a new *cetiya* of the style of Prāsāda Tòng (r. 1630–56).

An excellent collection of antiquities brought to light by the official excavations is exhibited on the ground floor of the Û Tòng National Museum. The second floor contains a collection of antiquities of later date (11th–16th cent.) from the town of Subarṇapurī and other parts of the province.

BIBLIOG. H. G. Quaritch Wales, Towards Angkor in the Footsteps of the Indian Invaders, London, 1937, p. 133.

Alexander B. GRISWOLD

NOTE: For the transcription of Siamese names there are numerous different systems, but few authors follow any one of them consistently. In this article those which are borrowed directly from Sanskrit or Pali are written in the standard fashion for those languages, while names of Tai origin are given according to the author's phonetic system (see A. B. Griswold, Afterthoughts on the Romanization of Siamese, *J. of the Siam Soc.*, XLVIII/1, 1960; Bowie, 1960, p. 27), with parenthetical variants for place names representing other forms in common use.

Illustrations: 2 figs. in text.

THORVALDSEN, BERTEL. Danish sculptor (b. Copenhagen, Nov. 19, 1770, or Nov. 13, 1768; d. Copenhagen, Mar. 24, 1844). The son of a carver of figureheads, Thorvaldsen entered the Royal Academy of Fine Arts in 1781 as a protégé of the painter Nicolai Abraham Abildgaard, a leader of the neoclassic movement, whom he assisted in the decoration of Amalienborg Castle in Copenhagen. Awarded the Rome stipend in 1796, he came under the influence of Asmus Jakob Carstens during his early years there. The first results of his study of antiquities were his *Bacchus and Ariadne* (1799) and *Jason and the Golden Fleece* (1802), both in the Thorvaldsens Museum in Copenhagen, which also houses marble replicas, original models, or casts of most of the works mentioned below. *Jason and the Golden Fleece* manifests that cold precision and reasoned clarity which henceforth characterize Thorvaldsen's style, distinguishing it from Canova's more baroque vivacity (see III, PL. 391; VII, PL. 389).

The patronage of Englishmen helped sustain Thorvaldsen through the succeeding productive years, during which he sculptured the *Cupid and Psyche* (1807), *Venus with the Apple* (1813–16), *Ganymede with the Eagle of Jupiter* (1817), and the celebrated *Shepherd Boy* (1817). Most congenial to his striving for abstract purity and archaistic stylization was relief sculpture (X, PLS. 252, 279), in which he executed some characteristic compositions: *Briseis Being Led Away from Achilles by the Heralds of Agamemnon* (1803), *A Genio Lumen* (1808), and *Priam Supplicating Achilles for Hector's Body* (1815). In 1812, for a visit of Napoleon, he executed a 105-ft.-long relief frieze, *The Triumphant Entry of Alexander the Great into Babylon* (gesso model, Rome, Palazzo del Quirinale; cast, Copenhagen, Thorvaldsens Mus.). When the newly excavated sculptures from the Temple of Aphaia in Aegina passed through Rome on their way to Munich in 1816, Thorvaldsen restored them for the Bavarian king. This close occupation with Greek originals left its mark on Thorvaldsen's work and, unfortunately, on the Greek originals as well.

Meanwhile official recognition had come his way. In 1805 the Royal Academy of Fine Arts in Copenhagen named him professor, and in 1808 he was appointed to the Accademia di S. Luca in Rome. His voyage to Copenhagen in 1819 was a triumph. Kings and emperors vied with one another to give him commissions and bestow high honors on him, and upon his return to Rome in 1820 he had to employ numerous assistants to satisfy the demand for his work. Among the sculptures executed in the following years were the monument of Włodzimierz Potocki (1821) in the Cathedral of Kraków; the Copernicus monument (1823) and the equestrian statue of Prince Józef Poniatowski (1826–27) in Warsaw; the monument of Eugène de Beauharnais, Duke of Leuchtenberg (1827), in the Jesuit Church of St. Michael in Munich and the equestrian statue of Maximilian, Elector of Bavaria (1833–35), in Wittelsbacherplatz, also in Munich; the Byron monument (1829) in the library of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Trinity College, Cambridge; the Schiller monument (1835) in Stuttgart; and the funeral monument of Pope Pius VII (1824–31) in St. Peter's in Rome. For the Church of Our Lady in Copenhagen he modeled statues of Christ (1821) and the Twelve Apostles (1821–27; figures of Thaddaeus and Andrew, 1841–42), as well as the baptismal font (1828).

The most celebrated artist of his time, Thorvaldsen was apotheosized by the Danes, who brought him home in 1838 aboard a warship specially sent. The Thorvaldsens Museum was built (1839–48) to house his tomb and enshrine his sculptures. Later generations have dealt harshly with Thorvaldsen; his work has come to be considered lifeless and inexpressive, an adaptation of classical forms to the taste of the cultivated *bourgeoisie*.

BIBLIOG. J. M. Thiele, Thorvaldsen Biographi, Copenhagen, 1851–56 (Eng. ed., London, 1865); T. Oppermann, Thorvaldsen, 3 vols., Copenhagen, 1924–30; P. O. Rave, Thorvaldsen, Berlin, 1944.

Lorenz EITNER

TIBET. Since 1951 Tibet has been an autonomous region of the People's Republic of China; its administrative center is the city of Lhasa. The area of Tibetan culture — in which there is notable linguistic and ethnic homogeneity — extends to some districts that even prior to 1951 were nominally part of China and also to some areas which are in the Indus basin and which have been part of India since the 19th century.

SUMMARY. Cultural and artistic development (col. 57). Monumental centers (col. 60): *Western Tibet: Ladakh; Spiti; Kunawar; Ngari; Central Tibet: Ü; Tsang; Eastern Tibet: Amdo; Kham.*

CULTURAL AND ARTISTIC DEVELOPMENT. Tibet (Bod) is located on a plateau north of the Himalaya mountain chain. Its average altitude of about 16,000 ft. discourages agriculture except in the lower regions and on the floors of the larger valleys. The principal product is barley, and the principal occupation of the inhabitants is raising livestock (sheep and yak). The Himalayas act as a barrier against the monsoons and their humidity, and the climate is an arid one. Tibet is battered by strong, sometimes violent winds.

The population, which is small and is concentrated in the more fertile broad valleys, speaks a monosyllabic language belonging to the Sino-Tibetan family. Until a few years ago, Tibetan society had a feudal-theocratic character and was dominated by the lay and monastic aristocracies.

Modern political divisions do not coincide with the linguistic and cultural boundaries of Tibet. This article, therefore, includes not only the central part of Tibet, but also vast zones on the eastern borders that are now part of the Chinese provinces of Chinghai, Szechwan, and Sikang; the modern states of Bhutan and Sikkim, which are Indian protectorates; and various Himalayan zones such as Spiti, Kunawar, and Ladakh that are part of the Indian Union.

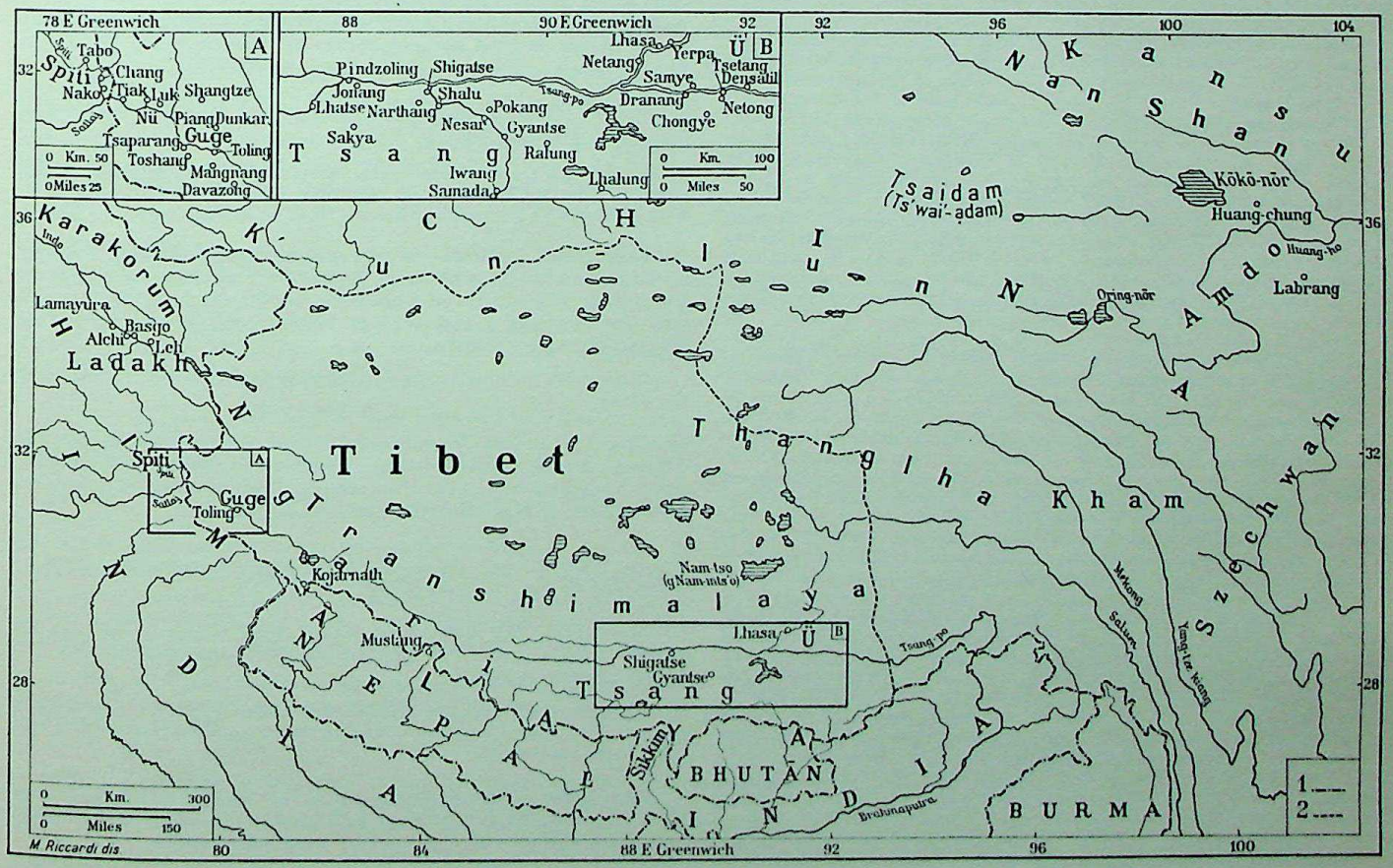
Tibet emerged from prehistory at the end of the 6th century when a solid feudal monarchy was established there. For two centuries it was one of the most important forces in Asia, attaining the height of its power under King K'ri sroṅ lde btsan (755–97), who profoundly affected the country's religious and artistic development when, after a dispute between Indian and Chinese monks, he decided in favor of the former, adopting Indian Mahayana Buddhism (see BUDDHISM) as Tibet's state religion.

After the decline of the monarchy (842), the country was broken up into several small states. The monarchic tradition survived primarily in western Tibet, where the kingdom of Guge, which existed until 1630, was the site of a revival of Buddhism in about the year 1000 and of the consequent flourishing of Tibetan art.

The history of central Tibet is instead essentially linked to ecclesiastical developments. From the 11th century on, various Buddhist sects coexisted with and became more powerful than the old lay aristocracy. As a result artistic achievements were centered in the monasteries and temples; the most noteworthy architecture, apart from strictly functional military architecture, was of a sacred nature.

After 1260 the Sakya (Saskya) abbots supported the Chinese Mongols, who conceded to them the temporal rule of central Tibet. But in the following century all tendencies toward unity disappeared, and regions such as Tsang, in which art flourished during the 15th and 16th centuries, asserted themselves.

Within the framework of fragmentary authority divided between Tibetan aristocracy and clergy, there slowly emerged the Yellow sect, or Dge lugs pa, founded by Tsoṅk'a pa (1357–1419). In 1578, the third of this sect's leaders, who are believed to be incarnations of a



Area of expansion of the Tibetan culture. *Key*: (1) Modern political boundaries, (2) Sino-Tibetan boundary prior to 1951.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

deity, converted the Mongols; a Mongolian prince conferred on him the title of Dalai Lama, a name by which his successors have since been known in China and in Europe. In 1642, a Mongolian chief entrusted the temporal rule of Tibet to the fifth Dalai Lama. In the first half of the following century, after a period of unrest, China established a protectorate over the territory that endured until the fall of the Chinese Empire in 1912. An ill-fated attempt to maintain Tibet's precarious independence ended in 1951 with a treaty that made it part of the Chinese People's Republic.

BIBLIOG. *General*: N. J. Bičurin, Opisanie Tibeta v nynešnem ego sostojanii, s kartoju dorogi ot Čen-du do Hlassija [Description of Tibet as it is today, with a map of the road from Ch'eng-tu to Lhasa], 2 vols., Saint Petersburg, n.d.; N. J. Bičurin, Istorija Tibeta i Huhunora [History of Tibet and of Kokonor], 2 vols., Saint Petersburg, n.d.; W. Moorcroft, A Journey to the Lake Manasarovar in Un-des, A Province of Little Tibet, Asiatic Researches, XII, 1816, p. 375f.; A Csoma de Körös, Geographical Notice of Tibet, J. of the Asiatic Soc. of Bengal, I, 1832, pp. 121–27; A Gerard, An Account of Koonawur, London, 1841; H. H. Strachey, Narrative of a Journey to the Cho Lagan (Rakas Tal), Cho Ma-pan (Manasarovar) and the Valley of Pruang in Ghari, Hundes, in September and October 1946, J. of the Asiatic Soc. of Bengal, XVII, 1946, 2 pp. 98–120, 127–82, 327–551; A. Cunningham, Ladak, Physical, Statistical and Historical; with Notices of the Surrounding Countries, London, 1854; S. C. Das, Early History of Tibet, J. of the Asiatic Soc. of Bengal, L. 1881, 1, pp. 211–34; S. C. Das, Tibet in the Middle Ages, J. of the Asiatic Soc. of Bengal, L, 1881, 1, pp. 235–51; W. W. Rockhill, The Land of the Lamas, New York, 1891; W. W. Rockhill, Tibet, A Geographical, Ethnographical and Historical Sketch, Derived from Chinese Sources, JRAS, 1891, pp. 1–133, pp. 185–291; W. W. Rockhill, Diary of a Journey through Mongolia and Tibet in 1891 and 1892, Washington, 1894; V. Vasil'ev, Geografija Tibeta perevod iz tibetskago sočinenija Min'čžul-Hutukty [The Geography of Tibet, translated from the Tibetan work of Mints'ul Hutuktu], Saint Petersburg, 1895; G. Bonvalot, L'Asie inconnue: À travers le Tibet, Paris, 1896; S. C. Das, A Journey to Lhasa and Central Tibet, London, 1902; G. Sandberg, The Exploration of Tibet, Its History and Particulars from 1623 to 1904, Calcutta, 1904; C. Puini, Il Tibet (geografia, storia, religioni, costumi), secondo la relazione del viaggio del P. Ippolito Desideri (1715–21), Rome, 1904; S. D. Das, The Monasteries of Tibet, J. and Proc. of the Asiatic Soc. of Bengal, N.S., I, 1905, pp. 106–16; A. H. Francke, Archaeology in Western Tibet, Indian Antiquary, XXXV, 1906, pp. 237–41, 325–33, XXXVI, 1907, pp. 85–98, 148; A. H. Francke, History of Western Tibet, London (1907); N. V. Kjuner (Kühner), Opisanie Tibeta [Description of Tibet], Izvestija Vostočnago Instituta (Vladivostok), XXI, 1907, XXII, 1907, XXVI, 1908, XXVI, 1908; E. Kawaguchi, Three Years in Tibet, Madras, London, 1909; B. Laufer, Der Roman einer tibetischen Königin, Lepzig, 1911; A. H. Francke, Antiquities of Indian Tibet, I, Personal Narrative, Mem. of the Archaeological Survey of India, N.S., XXXVIII, Calcutta, 1914; B. Aoki, Chibetto yuki (Journey to Tibet), Tokyo, 1920; E. Haenisch, Eine chinesische Beschreibung von Tibet, vermutlich von Julius Klaproth nach Amiot's Übersetzung bearbeitet, in S. Hedin, Southern Tibet, IX, Stockholm, 1922, IV, pp. 3–66; A. Tafel, Meine Tibetreise, 2 vols., Stuttgart, Berlin, Lepizig, 1923 (2d ed.); C. Wessels, Early Jesuit Travellers in Central Asia, 1603–1721, The Hague, 1924; A. H. Francke, Antiquities of Indian Tibet, II, The Chronicles of Ladakh and Minor Chronicles, Mem. of the Archaeological Survey of India, N.S., L, Calcutta, 1926; C. Bell, Tibet Past and Present, Oxford, 1931; E. Obermiller, History of Buddhism (Chos-ḥbyung) by Bu-ston, 2 vols., Heidelberg, 1931–32; G. N. Roerich, Trails to Inmost Asia, New Haven, London, 1931; D. Macdonald, Twenty Years in Tibet, London, 1932; G. Tucci and E. Ghersi, Cronaca della Missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934; J. Schubert, Der Bericht uber die Tibetreise des japanischen Priesters Yekai Kawaguchi. Aus dem Tibetischen übersetzt und erklärt, AAs, VI, 1936–37, pp. 91–110; G. Tucci, Santi e briganti nel Tibet ignoto. Diario della spedizione nel Tibet Occidentale, 1935, Milan, 1937; F. De Filippi, An Account of Tibet. The Travels of Ippolito Desideri of Pistoia, S. J., 1712–27, rev. ed., London, 1937; W. Filchner, Om mani padme hum. Meine China- und Tibetreise, Leipzig, 1938; G. Tucci, Indo-Tibetica, IV; Gyantse ed i suoi monasteri, II, Rome, 1941; J. Bacot, F. W. Thomas, and C. Toussaint, Documents de Touen-Houang relatifs à l'histoire du Tibet, Paris, 1946; G. N. Roerich, The Blue Annals, 2 vols, Calcutta, 1949–53; H. E. Richardson, Three Ancient Inscriptions from Tibet, J. of the Asiatic Soc. of Bengal, XV, I, 1949, pp. 45–64; G. Tucci, A Lhasa e oltre. Diario della spedizione nel Tibet, 1948, Rome, 1952 (2d ed.); L. Petech, I Missionari italiani nel Tibet e nel Nepal, I–IV, I Cappuccini marchigiani, Rome, 1950–3, V–VII, Ippolito Desideri, S. J., 1954–6; F. Maraini, Segreto Tibet, Bari, 1951; G. M. Toscano, La prima missione cattolica nel Tibet, Parma, Hong Kong, 1951; H. E. Richardson, Ancient Historical Edicts at Lhasa and the Mu Tsung-Khri Gtsug Lde Brtsan Treaty of A. D. 821/3 from the inscriptions at Lhasa, London, 1952; H. E. Richardson, Tibetan Inscriptions at Žwahi Lha Khan, JRAS, 1952, pp. 133–54, 1953, pp. 157–73; G. Tucci, A Lhasa e oltre. Diario della spedizione nel Tibet, 1948, Rome, 1952; F. W. Thomas, Tibetan Literary Texts and Documents Concerning Chinese Turkestan, 3 vols., London, 1955; Li Fang-kuei, The Inscription of the Sino-Tibetan Treaty of Lhasa, TP, XLVI, 1956, pp. 1–99; L. Petech, Le civiltà dell'Oriente, I, Rome, 1956, pp. 1123–40; P. Aufschnaiter, Prehistoric Sites Discovered in Inhabited Regions of Tibet, East and West, VII, 1956–7, pp. 74–88; H. E. Richardson, A Tibetan Inscription from Rgyal Lha Khan, JRAS, 1957, pp. 57–78; A. Ferrari, mK'yen brTse's Guide to the Holy Palaces of Central Tibet (completed and ed. by L. Petech, with the collab. of H. Richardson), Rome, 1958; L. Petech, Tibet, Storia Universale, VIII, 1, Milan, 1960, pp. 269–85; B. I. Kuznecov, Tibetskaja letopis' Svetloe zerkalo carskih rodoslovnyh [The Tibetan Chronicle Entitled A Short Account of the Royal, Genealogies], Leningrad, 1961; P. Pelliot, Histoire ancienne du Tibet, Paris, 1961; R. A. Stein, Une chronique ancienne de bSam-yas: sBa-bžed, Paris, 1961; H. E. Richardson, Tibet and its History, London, 1962; R. A. Stein, La civilisation tibetaine, Paris, 1962; T. V. Wylie, The Geography of Tibet According to the 'Dzamgling-rgyas-bshad, Roe, 1962. *Special Studies*: C. Bell, Portrait of the (13th) Dalai Lama, London, 1946; G. Tucci, The Tombs of the Tibetan Kings, Rome, 1950; H. Hoffmann, Die Graber der tibetischen Könige im Distrikt'P'yons-rgyas, Nachr. der Ak. der Wissenschaften in Gottingen, 1950, pp. 1–14; H. Hoffmann, Tibets Eintritt in die Universalgeschichte, Saeculum, I, 1950, pp. 258–79; L. Petech, China and Tibet in the Early 18th Century, Leiden, 1950; P. Demiéville, Le Concile de Lhasa, I, Paris, 1952; Li Tieh-tseng, The historical status of Tibet, New York, 1956; G. Schulemann, Geschichte der Dalai-Lalas, Leipzig, 1958 (2d ed.), (cf. L. Petech, TP, XLVI, 1958, pp. 465–83); L. Petech, The Dalai-Lamas and the Regents of Tibet, A Chronological Study, TP, XLVII, 1959, pp. 368–94. *Bibliographies*: H. Cordier, Bibliotheca Sinica, IV, Paris, 1907–08; cols. 2877–940, V, 1922, cols. 4361–406; J. Van Manen, A contribution to the Bibliography of Tibet, J. and Proc. of the Asiatic Soc. of Bengal, XVIII, 1922, pp. 445–525; A. Vostrikov, Some Corrections and Critical Remarks on Dr. Johan Van Manen's Contribution to the Bibliography of Tibet, BSOAS, VIII, 1935–37, pp. 51–76; S. Chauduri, Bibliography of Tibetan Studies, Sup. to J. of the Asiatic Soc., XXIV, I, 22, 1958, N.S., I, 1–4, 1959, II, 1, 1960, III, 2, 1961, IV, 1, 1962; A. Vostrikov, Tibetskaja historiceskaja literatura [Tibetan Literary History], Moscow, 1962.

See also the bibliog. for TIBETAN ART.

MONUMENTAL CENTERS. Tibet consists of three large geographical divisions: western, central, and eastern Tibet. Western Tibet includes the three districts of Ngari, of which the most important artistically is Guge; it also includes the Indian provinces of Spiti, Kunawar, and Ladakh. Central Tibet includes the provinces of Ü (Lhasa is its administrative center and the capital of Tibet), Tsang, K'oṅ po, and Dvags po. Eastern Tibet, whose many subdivisions reflect its uneven topography, includes a large number of districts that can be grouped together into the two large provinces of Amdo in the northeast and Kham in the east. These three geographical divisions have been followed in the list of monumental centers.

Until recently, archaeological excavations have not been permitted in Tibet because of religious bans against provoking the earth spirits. One of the few Western travelers to make a historico-artistic study of Tibet has been the Italian Giuseppe Tucci. The artistic history of the western region of Tibet is fairly well documented but it is incomplete for central Tibet and almost nonexistent for the eastern region. It is not yet possible accurately to define the regional characteristics of Tibetan art, apart from the rather obvious observation that the Indian influence is stronger in the west and that of Chinese art is stronger in the east.

Only those localities of acknowledged artistic interest are included in this article; omitted are monasteries or cities that may be of religious importance but are little-known artistically.

Western Tibet. Ladakh. An independent kingdom until 1841, Ladakh is presently part of India.

BIBLIOG. A. Cunningham, Ladak, London, 1854; A. H. Francke, Antiquities of Indian Tibet, 2 vols., Calcutta, 1914–26; L. Petech, A Study of the Chronicles of Ladakh (Indian Tibet), Calcutta, 1939.

Alchi (Alci). The rNam par snan mdsad monastery, founded by Rin c'en bzaṅ po (958–1055), contains six temples, of which the gSum thsag is decorated with elaborate wood carvings in the Kashmir style and contains a 17th-century picture cycle influenced by the Moghul style (see MOGHUL SCHOOL).

BIBLIOG. A. H. Francke, Antiquities of Indian Tibet, I, Calcutta, 1914, pp. 88–92.

Basgo. This was the capital for a time during the 17th century. Although it is in ruins, the temple dedicated to Byams pa (Maitreya), from the second half of the 16th century, is noteworthy. The ancient royal palace is now the monastery of Seljang.

BIBLIOG. A. H. Francke, Archaeology in Western Tibet, Indian Antiquary, XXXVI, 1907, pp. 87–89; A. H. Francke, Antiquities of Indian Tibet, I, Calcutta, 1914, pp. 86–88.

Lamayura. The monastery, of the 'aBri khung pa sect, is the oldest in Ladakh; the Seṅ ge sgaṅ temple is the most ancient part of the existing complex.

BIBLIOG. A. H. Francke, Antiquities of Indian Tibet, I, Calcutta, 1914, pp. 96–98; J. Schubert, Der tibetische Māhātmya von Lamayury, AAs, VII, 1937, pp. 205–09.

Leh (sLes). The capital of Ladakh, it is dominated by the ancient royal palace on the slope of the rNam rgyal rtse mo hill. This building is a good example of 17th-century civil architecture.

BIBLIOG. A. H. Francke, Antiquities of Indian Tibet, I, Calcutta, 1914, pp. 68–80.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Spiti (Spyi-ti). Although this broad, inaccessible valley was first ruled by the kings of Guge and then by those of Ladakh, it succeeded in preserving its autonomy to a great extent.

BIBLIOG. G. Tucci, Indo-Tibetica, III: I templi del Tibet Occidentale ed il loro simbolismo artistico, 1, Spiti e Kunavar, Rome, 1935.

Lhalung (Lha luṅ). A small temple founded by Rin c'en bzaṅ po contains various plaster statues (cycles representing Vairocana, Mañjuśrī as Dharmadhatu Vāgīśvara, and Prajñāpāramitā); these works are closely related stylistically to the sculpture cycle in Tabo.

BIBLIOG. H. L. Shuttleworth, Lha-lun Temple, Spyi-ti, Mem. of the Archaeological Survey of India, XXXIX, Calcutta, 1929; G. Tucci, Indo-Tibetica, III, 1, Rome, 1935, pp. 116–21.

Tabo (Ta p'o). This is the site of the principal monastery of the valley, which also was founded by Rin c'en bzaṅ po. Within its enclosure there are eight temples. The plaster statues in the central temple (a cycle representing Vairocana) are restorations of originals probably of the 11th–12th century. They reflect the influences of both Kashmir art (q.v.) and Pala art (see PALA-SENA SCHOOLS). The frescoes (ca. 1300) are the first and best-known examples of the work of the Guge school, which is essentially of Indian derivation. The frescoes in the gSer k'aṅ (16th cent.) belong to the second period of the Guge school's activity.

BIBLIOG. A. H. Francke, Antiquities of Indian Tibet, I, Calcutta, 1914, pp. 37–43; G. Tucci, Indo-Tibetica, III, 1, Rome, 1935, pp. 21–115.

Kunawar (K'u nu). At one time this region was part of Ladakh; since 1685 it has been a province of what is now the Indian state of Bashahr.

BIBLIOG. A. Gerard, An Account of Koonawur, London, 1841; J. D. Cunningham, Notes on Moorcraft's Travels in Ladakh, and on Gerard's Account of Kunawar, Including a General Description of the Latter District, J. of the Asiatic Soc. of Bengal, XIII, 1, 1844, pp. 172–222, 223–53; G. Tucci, Indo-Tibetica, III: I templi del Tibet Occidentale e il loro simbolismo artistico, 1, Spiti e Kunavar, Rome, 1935.

Chang (Can mk'ar). The small temple at the center of the village contains a cycle of representations of the Na rag (nāraka, or infernal deities).

BIBLIOG. A. H. Francke, Antiquities of Indian Tibet, I, Calcutta, 1914, p. 34; G. Tucci, Indo-Tibetica, III, 1, Rome, 1935, pp. 122–40.

Nako (Na go). The monastery outside the town has been dated back to Rin c'en bzaṅ po. The plaster statues in the central temple (*gTsug lag k'aṅ*) represent the gods of medicine (sMan bla); they have been extensively restored and are much cruder than those of Tabo. The statues in the so-called "Temple of Lotsāva" representing the Pañcatathāgata (the five Buddhas) are older and of better workmanship.

BIBLIOG. A. H. Francke, Antiquities of Indian Tibet, I, Calcutta, 1914, pp. 32–34; G. Tucci, Indo-Tibetica, III, 1, Rome, 1935, pp. 141–74.

Ngari (mṄa' ris skor gsum). An independent kingdom from the 9th century until 1630, it later was part of the Ladakh region and since 1638 has been part of Tibet.

Davazong (Zla ba rdsoṅ). The small temple, which was formerly part of the royal palace, has fine frescoes of the Guge school and gilded bronze statues that are the work of Indian artists.

BIBLIOG. G. Tucci, Santi e briganti nel Tibet ignoto, Milan, 1937, pp. 148–51.

Kojarnath (ąK'or c'ags). The Lotsāva temple contains three gilded silver statues of Mañjuśrī, Avalokiteśvara, and Vajrapāṇi; they are the work of Indian artists. The very finely sculptured wooden portal of the Ducàn (adus k'aṅ) was also executed by Indian artists.

BIBLIOG. G. Tucci, Santi e Briganti nel Tibet ignoto, Milan, 1937, pp. 38–43; G. Tucci, A Hindu Image in the Himalayas, Asia Major, N. S., VII, 1959, pp. 170–75.

Luk. The temple of the abandoned monastery contains fresco paintings (similar to those at Tabo and Nü) of scenes from the life of the Buddha that are closely related to Indian models.

BIBLIOG. G. Tucci, E. Ghersi, Cronaca della missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934, pp. 210–19.

Mangnang (Maṅ naṅ). The city is in ruins. A temple contains frescoes of the mature period of the Guge school that depict the legend of the Buddha and terrifying divinities. A chapel in the main temple contains an 11th-century fresco cycle that is the work of Indian masters, perhaps from Kashmir, who were closely connected with the school of Ajanta (q.v.).

BIBLIOG. G. Tucci, ILN, Jan. 28, 1936; G. Tucci, Santi e briganti nel Tibet ignoto, Milan, 1937, pp. 157–63.

Mustang (Klo sman t'aṅ). This center is in Nepalese territory. In the large temple of Tugcèn (T'ugs rje c'en po) and in the temple dedicated to Maitreya, there are frescoes from the 15th or 16th century. Those in the temple of Tugcèn depict the paradise of Akṣobhya, and those in the second represent the mandala of Vajrasattva; they are quite similar to those of the *žiṅ k'ams* in the *sKu abum* (stupa) in Gyantse. Some of the artists were Nepalese.

BIBLIOG. G. Tucci, Tra giungle e pagode, Rome, 1953, pp. 86–88; G. Tucci, Preliminary Report on Two Scientific Expeditions in Nepal, Rome, 1956, pp. 15–16.

Nü. The dGa' ldan p'un ts'ogs temple contains frescoes from the late Guge school (early 17th cent.) that are noteworthy for their landscape details. There are two imposing ruined castles in the town.

BIBLIOG. G. Tucci, E. Ghersi, Cronaca della missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934, pp. 191–204.

Piang Dunkar (p'yi dbaṅ Duṅ dkar). Once the site of a populous city, it is now occupied by two small neighboring villages. In the abandoned monastery of Piang there are various wooden, gilded bronze, and plaster statues from the early period of the Guge school. Some are of Indian origin, specifically, of the Pala school (11th–13th cent.). In the temple (Zecàn; rtse k'aṅ) on top of the hill there is an extremely elegant and carefully executed pictorial cycle of the Sixteen Arhats. Large areas of the grottoes around Dunkar, which were formerly occupied by ascetics, are decorated with 15th-century frescoes that are examples of the painting of the Guge school in its most mature period.

BIBLIOG. G. Tucci, Santi e briganti nel Tibet ignoto, Milan, 1937, pp. 170–75.

Ri. In a ruined temple, attributed to Rin c'en bzaṅ po, there are remains of frescoes and plaster statues of the Sarvavid Vairocana cycle. The frescoes in the *mgon k'aṅ* are of a later date and are greatly deteriorated.

BIBLIOG. G. Tucci, E. Ghersi, Cronaca della missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934, pp. 359–63.

Shangtze. The monastery temple is a royal sacrarium whose walls are covered with 16th-century frescoes, some of which portray the eight gods of medicine.

BIBLIOG. G. Tucci, E. Ghersi, Cronaca della missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934, pp. 248–62.

Tiak (Ti yag). This is the site of a temple founded by Rin c'en bzaṅ po that contains a statue cycle of the most ancient Guge school.

BIBLIOG. G. Tucci, E. Ghersi, Cronaca della missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934, pp. 191–204.

Toling (mT'o gliṅ). The plan of the large walled royal monastery of Guge is based on the symbolism of the mandala. The central temple of Ye ses' od has the same form. The temple and its chapels contain a large and complex group of well-preserved frescoes (depicting the Vairocana, Guhyasamāya Tantra, and Saṁvaratantra cycles) that date to the early period of the Guge school, perhaps to the 11th century. Frescoes in another temple depict the ascetic exaltation and penitential mortifications of the Buddha and include realistic representations of wild beasts loosed in burial grounds. In the so-called "Temple of the Sixteen Arhats" there are historical representations of the kings of Tibet and Guge who protected Buddhism; these are extremely interesting as records of ancient customs. The most sacred temple (gSer k'aṅ) has three stories that taper in the form of a truncated pyramid; it was probably based upon the model of the Indian temple at Odantapuri. The cells on each story are decorated with frescoes.

BIBLIOG. G. M. Young, A Journey to Toling and Tsarapang in Western Tibet, J. of the Punjab Historical Soc., VII, 1919, pp. 177–99; G. Tucci,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

E. Ghersi, Cronaca della missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934, pp. 296–329; G. Tucci, Santi e briganti nel Tibet ignoto, Milan, 1937, pp. 164–67; B. R. Chatterji, Tholing Monastery in Western Tibet, J. of the Historical Soc., XIII, 2, 1940, pp. 30–34.

Toshang (do žaṅ). In a temple attributed to Rin c'en bzaṅ po, there are 16th-century frescoes depicting the eight gods of medicine and terrifying divinities.

BIBLIOG. G. Tucci, E. Ghersi, Cronaca della missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934, pp. 351–54.

Tsaparang. Formerly the capital of the kingdom of Guge, the city is now deserted and in ruins. Together with nearby Toling, it was the principal center of the Guge school of painting. Drawing inspiration from Indian models, this school first produced the small, almost miniature, paintings of the so-called "White Temple" (lha k'aṅ dkar po) that depict the Vairocana, Mahādevī, and Sarvavid Vairocana cycles. The frescoes of the temple of bDe mc'og in the ruins of the royal palace are of a slightly later date and are noteworthy for their softness of line and skillful composition. In the so-called "Red Temple," the work of the school seems to reflect the decline into which the kingdom of Guge had fallen during the same epoch (16th–17th cent.). A strong tendency toward the monumental took the place of the elegant forms which the members of the school were no longer capable of producing. Other noteworthy painting cycles are that of Vajrabhairava (rDo rje ạjigs byed) in the temple dedicated to that divinity and that of Tārā in the so-called "Temple of the Prefect." Stuccoes were used as integrating elements in the large painting cycles. The heavy bronze baroque images in the "Red Temple" are relatively recent.

Central Tibet. Ü (dBus). In the heart of Tibet, this district was at first the home of the headquarters of the monarchy and later of the Dalai Lamas.

BIBLIOG. A. Ferrari, mK'yen brTse's Guide to the Holy Palaces of Central Tibet, Rome, 1958; G. Tucci, Forme dello spirito asiatico, Milan, Messina, 1940, pp. 191–215.

Chongye (aP'yoṅ rgyas). In the vicinity tumulus tombs of ancient Tibetan kings are still extant.

BIBLIOG. H. Hoffmann, Die Gräber der tibetischen Könige im Distrikt 'P'yons-rgyas, Nachr. der Ak. der Wissenschaften in Göttingen, 1950, pp. 1–15; G. Tucci, The Tombs of the Tibetan Kings, Rome, 1950; G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 119–21; H. Richardson, Early Burial Grounds in Tibet and Tibetan Decorative Art of the VIIth and IXth Centuries, CAJ, VIII, 1963, pp. 73–92.

Densatil (gDan sa mt'il). This was the seat of the dynasty founded by Pagmotry that ruled central Tibet in the 14th and 15th centuries. The entrance court of the central temple contains the tombs of these rulers, in the form of large gilded-bronze stupas that were executed by Nepalese artisans. The large central image of the Buddha, which dates from the 14th century, is also by Nepalese artists.

BIBLIOG. G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 109–10.

Dranang (Grva naṅ). In the frescoes in the central temple can be seen traces of the Hellenistic and Byzantine trends that arrived through Central Asia (see ASIA, CENTRAL). The statues of Gonkang are lively representations of the terrifying divinities.

BIBLIOG. G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 125–26.

Lhasa (lHa sa, "land of the gods"; originally Ra Sa, land "enclosed by walls" or "by buildings"). This has been the capital of Tibet since the 7th century. It has been repeatedly subjected to war and sacking, and is more important politically than artistically. The large Potala Palace, which dominates the city, is of characteristic architectural style and was built in the 17th century, partly on the foundations of the ancient royal palace. Until recently Potala Palace was the residence of the Dalai Lama. In the city, the most important sanctuary is the Jo k'aṅ (aP'rul snaṅ), which contains the Jobo, an image of the Buddha that, according to legend, dates from the 7th century; the statue probably was reworked in the 13th and 17th centuries. Some wooden pillars by Nepalese artists are among the few ancient remains in this temple. The same is true of the Ramoche temple, founded in the 7th century. The large monasteries in the vicinity, Sera (Se ra), Drepung (aBras spuṅs), and Ganden (dGa'ldan), have great religious importance but are of little artistic interest.

BIBLIOG. L. A. Waddell, Description of Lhasa Cathedral, J. of the Asiatic Soc. of Bengal, LXIV, 1895, I, pp. 259–83; L. A. Waddell, Lhasa and its Mysteries, London, 1904; S. C. Das, The Monasteries of Tibet, J. and Proc. of the Asiatic Soc. of Bengal, N. S., L, 1905, pp. 108–16; F. S. Chapman, Lhasa the Holy City, London, 1938; A. C. Walsh, Lhasa, JRAS, 1946, pp. 23–31; G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 74–87.

Netang (sNe t'aṅ). This is the site, south of Lhasa, where the Indian scholar Atīśa died in 1054. In the temples, which have been rebuilt and destroyed several times, there are some statues of Indian origin.

BIBLIOG. G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 61–62.

Samye (bSam yas). There is a royal temple of the Tibetan monarchy, whose construction was commissioned by King K'ri sroṅ lde btsan. The five-storied central temple is surrounded by four major and eight minor chapels that symbolize the major and minor continents of Indian cosmology. The temple has suffered fire damage several times and contains no noteworthy frescoes or ancient sculptures.

BIBLIOG. G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 103–5; G. Tucci, The Symbolism of the Temple of bSam-yas, East and West, VI, 1955–56, pp. 279–81; G. Tucci, Minor Buddhist Texts, II, Rome, 1958, pp. 26–28; R. A. Stein, Une chronique ancienne de bSam yas: sBa-bzed, Paris, 1961.

Tsetang (rTse t'aṅ). It is situated at the entrance to the Yarlung (Yar kluṅs) Valley, which was the cradle of the Tibetan monarchy. The Ngacho (lNa c'os) temple contains noteworthy statues and bronze stupas of Nepalese workmanship.

BIBLIOG. G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 115–16.

Yerpa (Yer pa). A complex of rock-cut hermitages is located here; these are noteworthy primarily for some statues contemporary with Atīśa (11th cent.) that were perhaps executed by Indian artists among his followers.

BIBLIOG. G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 92–95.

Tsang (gTsaṅ). The political conflict that has always existed between this region and Ü has influenced Tibetan history almost up to the present.

BIBLIOG. G. Tucci, Indo-Tibetica, IV; Gyantse ed i suoi Monasteri, 3 vols., Rome, 1941.

Gyang (rGyaṅ). In the vicinity of Lhatse is the large *sKu ạbum* of Gyang, which was built in the last decades of the 14th century (that is, after Shalu and before Gyantse). Although it is in a poor state of conservation, it is one of the most important monuments of Tibetan art. The painting cycles are by local artists who followed various trends (Central Asian, Nepalese, and, to a lesser extent, Chinese).

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 179–85.

Gyantse (rGyal rtse). The city is the commercial center of the Tsang district. Its large monastery complex (dPal ạk'or c'os sde) was begun in 1427, suffered war damage in 1904, and was later restored. It includes one of the major monuments of Tibetan art — the central temple and, even more important, the large *sKu ạbum*. The domed, four-storied stupa contains a total of 73 chapels and an almost complete pictorial representation of Mahāyāna doctrines; these representations culminate in the statue of Vajradhara (rDo rje ạc'aṅ) in the highest cell. The frescoes reflect the Khotanese style (see KHOTANESE ART).

BIBLIOG. S. C. Vidyabhusana, On Certain Tibetan Scrolls and Images Brought from Gyantse, Mem. of the Asiatic Soc. of Bengal, I, 1, 1905, pp. 1–23; G. Tucci, Indo-Tibetica, IV, 1, Rome, 1935, pp. 146–300.

Iwang (gYe dmar). A little-used small temple contains a series of statues in the Central Asian style representing the cycle of the Seven Buddhas. The walls of the central chapel are decorated with frescoes depicting the cycle of the prayers for the purification of sins (ltuṅ bšags). The paintings are poorly designed and composed but contain fine effects of color; they were executed in an Indian style that was strongly influenced by the Chinese and Central Asian manner. The statues and frescoes in the chapel to the right of the central one are clearly of Central Asian derivation.

BIBLIOG. G. Tucci, Indo-Tibetica, IV, 1, Rome, 1941, pp. 134–40; G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 32–34.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Jonang (Jo naṅ). The headquarters of the historian Tāranātha (17th cent.) and the mother house of the Jo naṅ pa sect are located here. The large *sKu ạbum* contains ancient paintings of the Nepalese school, others similar to those in Gyang, and still others that are the result of a restoration by Tāranātha in 1621. Central Asian influences are dominant in the upper stories of the *sKu ạbum*.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 190–96.

Lhatse Dyong (Lha rtse). The sanctuary has been modernized, but a rock-cut chapel contains sculptures and also a wooden door that is certainly the work of Indian artists and is not later than the 13th century.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 204–05.

Narthang (sNart t'aṅ). The monastery located here is the headquarters of a famous printing shop and contains a two-storied *sKu ạbum*, which is of no architectural interest but is richly decorated with 15th-century frescoes that show a well-assimilated and pure Chinese influence; these are similar to the almost contemporaneous frescoes at Gyantse.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 186–89.

Nesar (gNas gsar). This is the site of a very ancient temple, in almost total ruin. The large gilded statues in the rta mgrin lha k'aṅ are very similar to those in Iwang and are probably the work of the same artists.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, p. 201.

Pindzoling (Pun ts'ogs gliṅ). The monastery located here was dependent on that of Jonang and derives its art from the same source. The paintings are distinguished for the precision of their design, which predominates over the color. The frescoes of the cycle of Raktayamāri (gŠed dmar) in the *mGon k'aṅ p'ar* are noteworthy. Their airiness, mobility, and luminosity are almost unique in Tibet. The mK'a' spyod temple contains a cycle of paintings executed between 1631 and 1639 that marks a rebirth of the Indian traditions. Nearby, the paintings (ca. 1617–18) in the rJe btsun Tāranātha p'o braṅ show the influences of the schools of central and southern India.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 196–201.

Pokang (sPos k'aṅ). The monastery founded on this site in 1213 is largely modern in its present structure, but it contains a portrait of Atīśa that dates from the beginning of the 16th century and a statue of Maitreya that originated in southern India. The meeting room (*ts'ogs k'aṅ*) is the oldest part of the monastery; its frescoes are partly in the Nepalese style and partly the work of a delicate painter who signed himself dGe legs bšes gñen and whose art clearly shows Chinese influences.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 201–04.

Potong (Po toṅ). The two temples of the monastery situated here are damaged, but there remain fragments of frescoes that are similar and in some instances superior to those of Gyantse.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, p. 205.

Ralung (Rva luṅ). At an altitude of about 14,800 ft., this is the site of a large monastery. The imposing central temple, the Tsuglakang (*gtsug lag k'aṅ*), contains large statues of Tsepame (Ts'e dpag med; Amitāyus) and Champa (ạ Byams pa; Maitreya), among others; there is also a series of paintings of the masters of the Bka brgyud pa sect. The older part, the *mgon k'aṅ*, contains deteriorated frescoes. The *sKu ạbum*, which is similar to that in Gyantse, contains later frescoes (18th cent.).

BIBLIOG. G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 47–48, 53–56.

Sakya (Sa skya). This is the site of the principal monastery of the Sa skya pa sect, whose abbots were the temporal rulers of Tibet in the 13th and 14th centuries and who maintained a form of independence until 1951. Founded in 1073, the monastery was almost completely rebuilt in the 16th century. It is made up of somewhat dissimilar groups of buildings containing rich collections of art objects, mainly Indian in origin. The best example is the gilded-bronze statue of Mañjuśrī, of Kashmirian workmanship, that is in the dBu rtse gsar ma temple. There are also some Pala bronzes and various objects of Nepalese origin. The Blo blaṅs temple has a magnificent door of carved wood. The ancient frescoes have been completely destroyed in the numerous wars fought around the rich monastery.

BIBLIOG. S. C. Das, A Journey to Lhasa and Central Tibet, London, 1902, pp. 312–16; G. Tucci, Un principato indipendente nel cuore del Tibet: Sachia, Asiatica, VI, 1940, pp. 353–60; G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 172–76.

Samada. In the vicinity there are two important temples. The rKyaṅ p'u temple is very old and dates from the time of the monarchy or, more probably, from the 11th century; its present form is a 14th-century reconstruction. However, the entrance court and the chapel on the first story contain paintings in the Indian style, dating perhaps from the 11th century, that are similar to those of Mangnang. The temple of Dregun (ạbras k'ud) contains a cycle of paintings of Gur mgon, of a terrifying and demonic nature. The frescoes are based on Central Asian models of Chinese inspiration. The statues in both temples are also in Central Asian style.

BIBLIOG. G. Tucci, Indo-Tibetica, IV, 1, Rome, 1941, pp. 93–132.

Shalu (Žva lu). Constructed through the initiative of the great writer Bu-ston (1290–1364), the monastery has remained practically intact. The architecture is clearly of Chinese derivation. The central temple (gSer k'aṅ) is decorated with frescoes depicting the hundred moments in the life of the Buddha. In these frescoes the Chinese influence is in large part outweighed by Indian, specifically Nepalese, influences.

BIBLIOG. G. Tucci, Tibetan Painted Scrolls, Rome, 1949, pp. 177–78.

Shigatse (gŽis ka rtse). The capital of the Tsang region, the city contains nothing of interest except the large fort, which was rebuilt in the 18th century on the ruins of the palace of the ancient kings. Nearby is Tashilumpo, headquarters of the Tashi or Panchen Lama, one of the two great dignitaries of the Yellow sect that is predominant in Tibet (the other is the Dalai Lama). The monastery, founded in 1447, is of no great artistic interest; the most important temple and the chapels built over the tombs of Panchen Lamas are extremely rich in gold and precious stones.

BIBLIOG. S. Hedin, Transhimalaya, I, Leipzig, 1909, pp. 263–349; G. Tucci, A Lhasa ed oltre, Rome, 1952 (2d ed.), pp. 131–33.

Eastern Tibet. Almost no historico-artistic information is available for this vast region. The existing temples seem to be mainly of recent construction (16th–18th cent.). Some of the oldest were completely destroyed in various wars during the present century and were then completely or partially reconstructed, as were Litang (Li t'aṅ), founded about 1100; Chamdo (C'ab mdo), founded in 1437; and Choni, which until its destruction in 1928 was the seat of an independent principality.

BIBLIOG. P. K. Kozlov, Mongolija i Amdo i mertvyj gorod Hara-Hoto. Ekspedicija Russkogo Geograficeskaja Obscestva v nagornoi Azii 1907–09 [Mongolia, Amdo and the dead city of Qara-qoto. The expedition to further Asia of the Russian Geographical Society in 1907–09], Petrograd, 1923.

Amdo (*A mdo*). Huangchung. A huge monastery founded in 1537 on the borders of the Tibetan linguistic territory in the Chinese province of Chinghai (Ch'ing-hai) rises here on the site of the birthplace of Tsoṅ k'a pa.

BIBLIOG. W. Filchner, Das Kloster Kumbum in Tibet: Ein Beitrag zu seiner Geschichte, Berlin, 1906; W. Filchner, Kumbum Dschamba Ling, Leipzig, 1933; W. Filchner, Kumbum: Lamaismus in Lehre und Leben, Zurich, 1954.

Labrang. This large monastery was founded in 1708 in the Hsia Ho Valley in eastern Chinghai province; it is noteworthy for an enormous image of Maitreya in its gSer k'an.

BIBLIOG. B. Baradijn, Statuja Majtrei v zolotom hrame v Lavrane [The Statue of Maitreya in the temple of gold at Labrang], Leningrad, 1924; E. Furholzer, Arro, Arro: So sah ich Tibet, Berlin, 1942; J. F. Rock, The Amnye Ma-Chhen Range and Adjacent Regions, Rome, 1956, pp. 33–47.

Kham. Its most important monasteries were in large part destroyed during the border wars with China, and the existing constructions are modern.

BIBLIOG. G. N. Potanin, Tangutsko-Tibetskaja okraina Kitaja i Central'naja Mongolija [The Tanguto-Tibetan area of China and Central Mongolia], 2 vols., Saint Petersburg, 1893.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Kandzego (dKar-mdzes-sgo). This is the site of the large monastic complex of T'eg c'en T'ar pa'i gliṅ, which was constructed on a hilly area.

BIBLIOG. V. Sis, J. Vanis, Der Weg nach Lhasa, Praha, 1956, pls. 26, 27, 36, 60.

Luciano PETECH

Illustrations: 1 fig. in text.

TIBETAN ART. Tibetan art is largely derived from two major currents — Indian art (q.v.) and Chinese art (q.v.). It accepted and freely elaborated the elements of both, and although its sources of inspiration are clearly evident, Tibetan art has retained a marked individuality. Like Nepal (see NEPALESE ART), Tibet preserved and further developed such Indian artistic traditions as those of Kashmir art and the Pala-Sena schools (qq.v.) after these had become weakened or had disappeared in their places of origin.

SUMMARY. Religious and historical background (col. 67). Prehistory and protohistory (col. 68). Architecture (col. 69). Painting (col. 73). Sculpture (col. 77). Minor arts and handicrafts (col. 80).

RELIGIOUS AND HISTORICAL BACKGROUND. Tibetan artistic expression is inspired solely by religion; art serves cult as a means of bringing man into contact with the divinities. Thus, in order to understand Tibet's art, it is necessary to consider briefly Tibet's religion. The religious history of Tibet is usually divided into two main currents: one that centered in the autochthonous religion called Bon, which existed prior to the advent of Buddhism; and the other that developed around Buddhism, which in its Tibetan form is generally called Lamaism, from the word *bla ma* (supreme one); this appellation is incorrect in that, though Tibetan Buddhism is of a monastic nature, not all of the monks (*grva pa*) are *bla ma*. Bon (whose followers are called *Bon po*) is fundamentally a shamanistic religion but has infinite local varieties that at some undetermined time assumed a systematic form; its official form should be distinguished from its popular form, which has infinite nuances and varieties. Bon survives in many areas of Tibet but has been strongly influenced by Buddhism, to the point that many of its doctrines are difficult to distinguish from some of those of the schools of Tibetan Buddhism (such as the rÑiṇ ma pa school). In addition to Bon and Buddhism there exists *mi c'os*, the religion of the people, which is both a survival of the most ancient beliefs (celebrated in magical, apotropaic, and seasonal rites) and a compromise with Buddhism. In its expansion, Buddhism, rather than set itself against such an ancient and deeply rooted religious tradition, embraced it and imposed on it the stamp of legitimacy.

Buddhism (q.v.) first appeared in Tibet during the early period of the monarchy, but it did not become firmly established (after conflicts and reversals) until the time of King K'ri sroṇ lde btsan (742–97), when the temple of bSam yas was built and the monastic order was founded. This is called the period of the first introduction (*sṅa dar*) to distinguish it from the period of the second introduction (*p'yi dar*), which began at the time of Atīśa, who was sent by the kings of western Tibet to spread Buddhist doctrine throughout central Tibet and who died at Netang in 1054. The second introduction occurred after Buddhism had been persecuted and declined under King gLaṅ dar ma. The revival was centered in western Tibet and was attributable not only to Atīśa but also to Rin c'en bzaṅ po (958–1055), founder of the temple of Toling. In Kham in eastern Tibet also, the Buddhist religion was revived in some centers. It slowly began to flourish again as the number of Indian missionaries to Tibet increased and as social and political conditions gradually made Buddhism unsafe on the Indian subcontinent. The *lotsāva* (translators) contributed to this revival when they undertook the immense task of translating the works that were to be contained in two large collections, the *bKa'ạgyur*, which contains the revelation attributed to the Buddha, and the *bsTan ạgyur*, which includes Buddhist doctrinal works and commentaries, as well as poetic, scientific, and prose works that introduced many diverse aspects of Indian thought into Tibet.

The revival had reached its peak by the 13th century, when such large monasteries as as Sakya Ts'al, Reting, Drigunpa, and Densatil had become important centers of political power as well as of religious influence, since they sought to maintain relations with India and Nepal. The history of Tibet centered in these monasteries and their rivalries until the advent of the 5th Dalai Lama in the 17th century. In the monasteries arose particular predilections for diverse schools of thought and mystical experience that had come to Tibet from India; each of these schools proclaimed itself to be directly derived from the Indian masters by means of a well-defined spiritual succession and in an uninterrupted continuity. With few exceptions the doctrine remained basically the same, but different trends gave varying emphasis to particular points of dogma and liturgy. The most important of these trends were rÑiṅ ma pa, the oldest, related to the literature and doctrines introduced into Tibet at the time of the kings; Sa skya pa (from the name of the monastery), also known as the lam ạbras school (with its subsect of Ṅor pa); Bka brgyud pa, which gives great importance to the doctrines of Hathayoga and whose best-known representatives were Marpa and the poet-mystic Milaraspa; and Dge lugs pa, the reformed sect, usually called the Yellow sect, from the cap that distinguishes its members. This sect, founded by Tsoṅ k'a pa (1357–1419), emphasizes a very strict monastic life and places great stress on logic. The Tantric cycles that predominate in these schools, their *yi dam* (patron divinities), their *c'os skyoṅ* (protecting deities), and their most illustrious masters are the subjects most often treated in Tibetan painting and sculpture.

PREHISTORY AND PROTOHISTORY. Very little is known about Tibetan prehistory and protohistory. The only evidence of early civilization seems to be some megalithic monuments, which cannot, however, be dated with absolute certainty. Some, such as those at Doptra (rDo k'ra), no longer have sacred significance, while others, such as those at Po, still preserve their religious character. Po, though outside the political boundaries of Tibet (in Bashahr State), has a Tibetan culture. Every year it is (or was) the custom of the village people to gather in a sacred area delimited by a circle of stones. At the center of this circle are two monoliths, one taller than the other. The taller one symbolizes the *axis mundi* and, therefore, the ritual ascent. Chants sung during the ritual dances reflect this symbolism and reveal pre-Buddhist origins. Circular areas delimited by stones are found in many parts of Tibet (there is a noteworthy example atop a mountain near Sab dge ldiṅ) and are surely of a sacred or funerary nature.

The existence of some caves has been noted in western Tibet (Tucci and Ghersi, 1934). The most important of these are near Luk and look down on the river. They are isolated caves that are not related to troglodytic cities such as those located at Tsaparang and Mustang on the Nepal border. Given their location, they could be prehistoric; but this will remain only a hypothesis until scientific research can demonstrate their age. No more precise chronology can be deduced from the tombs discovered by P. Aufschnaiter (1956–57) near Lhasa.

Among the doubtful evidence of the prehistoric and protohistoric periods are some objects, generally of bronze, sometimes of copper, that have been unearthed in great numbers during cultivation of the fields. The Tibetans call them "little stones dropped from the sky" (*t'og rdeu*), and they are analogous to the "lightning stones" found in the West. They bear representations of the K'yuṅ (Garuḍa), a mythical bird, symbol of celestial powers; crosses (such as those studied by Janse, 1932); animals (monkeys, horses); rings and circles with various decorations; and animal fights, evidently inspired by steppe art (see STEPPE CULTURES). Some of these objects clearly were inspired by Tibetan religious traditions and are, therefore, indigenous. Others may have been imported or are imitations of foreign themes. Some of the circular ornaments formed of stylized figures are similar, as Goldman (1961) has demonstrated, to some Luristan bronzes. This similarity is in no way surprising; Tibet had commercial ties with the rest of the world,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and nomadic migrations of various origins may have come through the mountains since early times.

Also noteworthy are the *gzi* (beads) often found in Tibet. Of a whitish vitreous paste with striations and small circles in black and dark brown, they are much sought after for their supposed protective powers. They are unearthed in the fields and are surely of Western origin.

ARCHITECTURE. The earliest information about Tibet comes from the Chinese, who refer to the rise of the dynasty that, having unified the country, soon afterward became a power with which China herself had to reckon. The Chinese chronicles report that the Tibetans led a pastoral life and had no fixed habitations. Yet some sites were encircled by walls, and, of the houses that existed, some had flat roofs while others reached a height of several meters. Members of the aristocracy lived in large felt tents (Pelliot, 1961, p. 2).

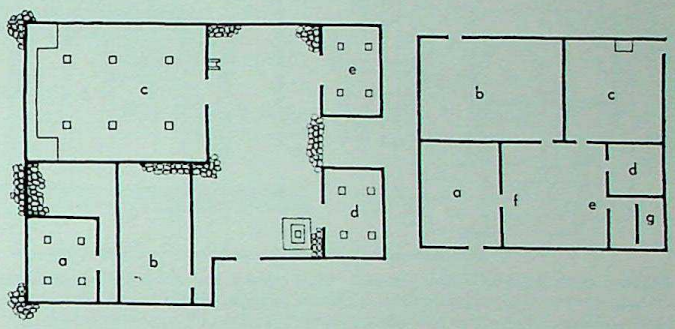
Tibet's rapid expansion and the clashes and encounters with those cultures bordering on its new empire soon changed native customs. The nomadic chiefs began to use fortresses (*mk'ar*) as temporary residences. There are no extant remains of a castle that can with certainty be attributed to the ancient epoch, although Bon po tradition affirms that each king had his own castle. Some buildings that have a special sacred character, though destroyed and reconstructed many times, probably retain the ancient plan. An example is the Yumbukalang in Yarlung, which tradition says was the palace of the king Lha t'o t'o ri. In Chongye, probable site of the palace of Sroṅ btsan sgam po, there are extensive ruins, but they are undoubtedly the remains of more recent fortifications. The Yumbukalang is a bold construction with a high tower and stands on the rocky spur of a mountain overlooking a river. The influence of Chinese military architecture is evident in this building.

Nevertheless, because the Tibetans were warriors and hunters they continued for a long period of time to use tents as their habitual residences. The Bon po called their temples *gSas k'aṅ*; their shape is not known. In western Tibet a circular building at Kyun lung is indicated by some as a Bon po temple; however, its relation to the founder of systematic Bon, claimed by local tradition, is doubtful. Any enclosed space intended for ritual purposes can be called *gSas k'aṅ*, or *lha k'aṅ*. The ritual areas with megaliths encircled by stones, mentioned above, may be of this type and perhaps also served as places of burial or laying-out. The tombs of the Tibetan kings are to be attributed to this early period. These tumuli, of various proportions, contained a funerary chamber, whose arrangement or form is discussed in literary sources which were compiled at a later date but which were certainly drawn from ancient texts, such as the *bKa' t'an sde lṅa*. The only visible part of these tombs (still standing in some of them) is the pillar that surmounts the tumulus. Sometimes, but not always, this pillar bears a carved funerary inscription and is crowned by a tiny roof with raised corners in the Chinese fashion. At the center of the roof there is a spherical or semispherical stone, and the base of the roof may be covered with Chinese-inspired designs that are symbols of water. Their similarity to Chinese funerary steles is evident. There is no doubt that these pillars (*rdo riṅ*) not only served for the funerary inscription of the dead king but also had a complex religious significance (as center, *axis mundi*, mountain, mountain-ancestor). Unfortunately, as Tibetan historical tradition testifies, these tombs were repeatedly desecrated. The castle of Leh, constructed by King Seṅ ge rnam rgyal (1580–ca. 1640), is one of the most important works of Tibetan architecture. It is both palace and fortress and contains many temples whose walls are covered with paintings. It is nine stories high and dominates the hill on which it stands. In this work Tibetan architects demonstrated a remarkable ability to use the rolling nature of the land to good advantage. Walls and counterforts run along the rock, rising to the site of the palace they protect.

The Potala Palace (PL. 52), begun by the 5th Dalai Lama in 1643 on the site of ancient constructions (some of which can be seen on the interior of the palace and seem to date back to the time of Sroṅ btsan sgam po), was finished at a later date, in the time of the regent Saṅs rgyas rgya mts'o. The grandeur of the nine-story building is enhanced by its position on the dMar po ri (Red Hill), from which it dominates the city of Lhasa and the entire valley as far as the lCags po ri (Iron Hill; PL. 53), with its large medical college. These large buildings were built in sun-baked bricks that were smoothed and then whitewashed. The structures almost always rest on stone walls.

The native tradition, strengthened through its contacts with Chinese architecture, gradually became more refined as the construction of religious buildings gave a major stimulus to building activity. Such constructions were, according to Tibetan religious beliefs, a source of great merit for the person who commissioned them and for those who worked on them; the *corvée* exacted by the heads of convents and by the state became tolerable in this guise since it entailed a spiritual reward that would assure a better destiny in future lives.

Tradition assigns the earliest Buddhist temples to the time of Sroṅ btsan sgam po and maintains that the aP'rul snaṅ gi



Tibetan architecture. *Left*: Nako, the monastery, plan: (*a*) small temple of Purgyul; (*b*) entrance with terrace; (*c*) Lotsāvai lha k'aṅ; (*d*) rGya dpag pai lha k'aṅ; (*e*) gTsug lag k'aṅ (*from G. Tucci, Indo-Tiberica, III, 1, 1935*). *Right*: Upper story of a typical house in the Spiti region, plan: (*a*) mC'od k'aṅ (chapel); (*b*) ts'oms (veranda); (*c*) me k'aṁ (kitchen); (*d*) dbyar sa (summer residence); (*e*) entrance; (*f*) k'a t'og (terrace roof); (*g*) stairway (*from G. Tucci, E. Ghersi, 1934*).

gtsun lag k'aṅ and the Ramoche temple of Lhasa were founded by the king's two wives, who were Nepalese and Chinese. It is highly probable that these two temples have undergone many successive renovations and reconstructions. The same is also true of the temple of bSam yas, which was erected by King K'ri sroṅ lde btsan (755–97) after he had proclaimed Buddhism the state religion. The bSam yas temple was destroyed by fire many times, but ancient texts and the description of its plan indicate that the surviving temple, which, in the mind of its creator and consecrator, must have been conceived as a magical projection of the Buddhist world, has preserved the original design. Though the plans of all the temples are based on mandalas (psychocosmograms), this is especially evident, and is clearly noted by ancient sources, in bSam yas. This temple followed the model of the Indian temple of Odantapuri, which had a great influence on Tibetan sacred architecture. It was used as the model also for the temple at Toling; the Jo k'aṅ in Lhasa probably reproduces a temple in Vikramasila. The temple of bSam yas represents the world with its four principal and four secondary continents (*gliṅ*). This construction symbolized the magical substitution of the new world established by Buddhism for the old world dominated by Bon and therefore assured its royal builder, the Lord of the Law (c'os rgyal ba), and his family of the establishment of a new order.

It is known that many *lha k'aṅ* (places of worship) and *gtsug lag k'aṅ* (monastery schools) were instituted in western Tibet by Rin c'en bzaṅ po, who was sent by the king of Guge to Kashmir to learn the Buddhist Law, to master Sanskrit, and to introduce Buddhist art and thought into that region. Many of these temples and religious complexes are still almost intact. Some, such as that at Mangnang, are decorated with frescoes of the period. The plan of these buildings is almost always the same, although the proportions are different. There is a pronaos, supported by piers or wooden columns, from which

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

a door (sometimes three doors, symbolizing the three accesses to liberation) leads to the temple proper, which is rectangular in shape. Along the back wall is the altar, or a cella that contains the altar (FIG. 71 center and right). On the altar is a representation of the divinity (*gtso bo*) to whom the temple is dedicated. Often the cella is surrounded by a narrow ambulatory (*skor lam*). In the larger temples the *skor lam* is the continuation of the two side aisles into which the temple is divided by a double series of piers or columns that support the ceiling. The center of the roof is open to admit light.

Though the *lha k'aṅ* is rectangular rather than square, it reflects the symbolism that marked the temples of India; for this reason it is considered a *t'ugs rten*, the Receptacle of the Spiritual Plane of the Buddha. The *gsuṅ rten* is the Receptacle of the Word, that is, the repository of the books containing the revelations of the Buddha, and the *sku rten* is the Receptacle of the Physical Plane. The *mc'od rten*, the Tibetan adaptation of the Indian stupa, is also considered a *t'ugs rten*. The monastic complexes extend around the large temples, surrounding them with constructions built one against the other; these constructions house various colleges (*grva ts'aṅ*). Generally the *lha k'aṅ* dominates the mass of buildings and is easily recognized by its size and its gilded roof. In large monasteries the *lha k'aṅ* — or one of them, if there are several — serves as a meeting place to which the monks are called for the many religious functions, and in this case it is called *ạdus k'aṅ* (or *ts'ogs k'aṅ*; "meeting place"). Especially in the large monastic complexes, the *ts'ogs k'aṅ* is an imposing building; it has a large central opening (*bsil yaṅ*) in the roof that serves to admit light. Pillars (*ka ba*) with capitals made up of a square element (*bre*), a small curved element (*gžu t'uṅ*), and a larger curved element (*gžu riṅ*; PL. 54, below) support the beams (*gduṅ ma*). The images are arranged along the back wall. During the ceremonies the monks read the sacred books and recite the office while seated on rows of cushions arranged below the opening in the roof. At the corners of the temple roof (*k'yams*) are the *t'ug*, wooden frameworks that are covered with cloth and yak hair and are surmounted by a skull and trisula (PL. 53, below). The *t'ug* serves as a dwelling place for the tutelary demons, which usually vary from sect to sect. Also on the roof are the small square bases that hold the *dar c'en*, flags that are believed to have protective powers, and a symbolic wheel between two gazelles (cf. PL. 43, left).

The roof often overhangs the topmost part (*dbu rtse*) of the temple, reproducing the Chinese pagoda model; such a roof is known as *rgya p'ibs*, or *rgya p'ubs*. At the center of the central rib of the roof, which is almost always gilded, are ornamental turrets or spires (PL. 53, below).

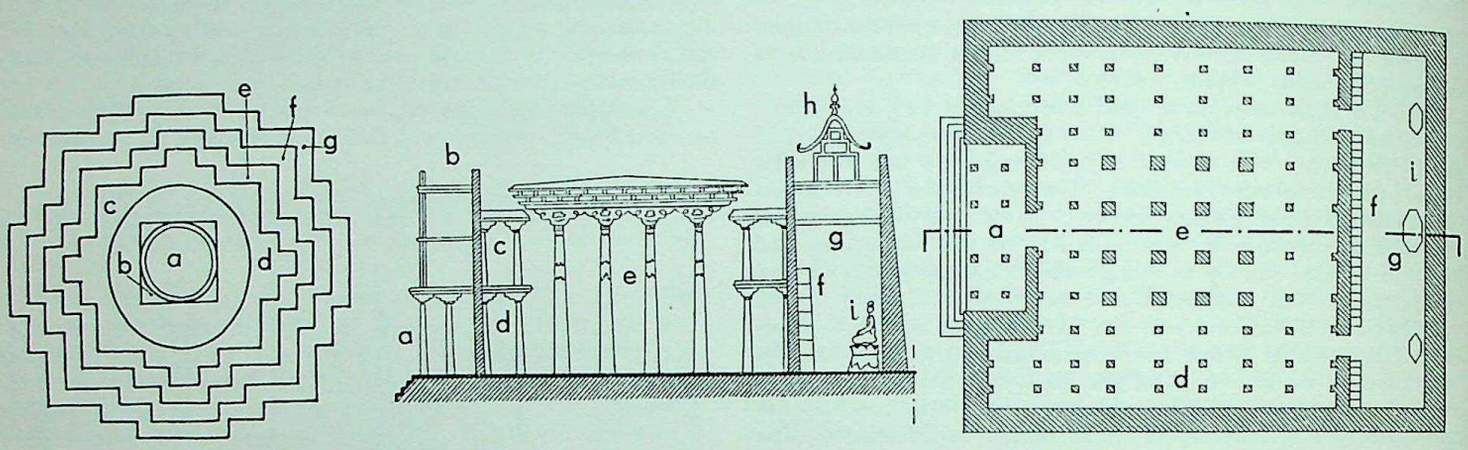
Many statues are so large that they must be placed in special temples, which are built in several stories so that the pilgrim may have a complete view of the image in its various parts.

Among the other noteworthy buildings that either stand alone or are included as freestanding elements in the larger complexes are the *maṇi k'aṅ*, with their prayer wheels; these are large cylinders that contain paper scrolls on which the formula "Oṃ maṇi padme hūm" is written hundreds of thousands of times (cf. BUDDHISM, col. 695). The formula invokes the divinity sPyan ras gzigs (Avalokiteśvara), protector of Tibet, and is recited by Tibetans every day. It is also inserted into more modest metal prayer wheels. The cylinders contained in the *maṇi k'aṅ* are often several yards high; they turn easily on iron or wooden pivots at their center. A chain or cord attached to the base of the cylinder sets the machine in motion when it is pulled.

The *mc'od rten* is derived from the Indian stupa; because it was introduced into Tibet at the time when Mahayana Buddhism was fostering new ideas and new architectural concepts in India, it assumed forms different from those which prevailed during the most ancient period of Buddhism. There are eight principal types of *mc'od rten*; following the Indian tradition, these correspond to the different places at which the Buddha performed his twelve memorable works, as reflected in the picture cycles (*mdsad pa bcu gñis*; from birth to death). The *mc'od rten* in the form of a stairway is related to the city of Sankasya, to which the Buddha descended after having ascended to heaven to preach the Law to his mother. Another type is called *sgo maṅ* ("of the many doors") and has many niches that sometimes took the form of true chapels. Among the most important examples of this type is that of rGyaṅs ạBum mo c'e, founded by bSod nams bkra šis (1352–1417), and those of K'ro p'u, of Gyantse (FIG. 71), and of Byams pa gliṅ, founded in 1472. All of them have a succession of stories leading to the cella on top. The pilgrim progresses from one story to another according to the ritual route, passing through chapels richly decorated with mural paintings in which images are used to represent the various phases of the mystical experience, from the most limited to the supreme. The *sgo maṅ* type of *mc'od rten*, with interior chapels of the type described, is generally called *sKu ạbum* (of the hundred thousand images).

These buildings are believed to gain great merit for those who commission them. Sometimes the donor uses the length of his own arm as a unit of measurement in order to identify himself ideally with the construction. The *mc'od rten* do not always rise near monasteries but are often found at the sides of roads, on the roads themselves, or at the ends or the center of bridges. They often have the appearance of large domed portals; the interior of the vault is usually covered with cycles of paintings representing the divinity to whom the construction is dedicated.

A *mc'od rten* that contains relics of a person considered particularly holy is called *gduṅ rteṅ* and is usually built inside a temple. The *gduṅ rteṅ* is made of metal, usually bronze, and sometimes even of precious metals adorned with precious or semiprecious stones (e.g., the *gduṅ rteṅ* that contains the re-



Tibetan architecture. *Left*: Gyantse, sKu ạbum (*a*) image of Vajradhara; (b) bell; (c) cupola; (d–g) stepped terraces (*from G. Tucci, Indo-Tibetica, IV, 1, 1941*). *Center and right*: Tibetan temple, section and plan: (*a*) peristyle; (*b*) terrace roof; (*c*) gallery; (*d*) aisles; (*e*) central aisle; (*f*) library; (*g*) sanctuary; (*h*) pagoda; (*i*) statues (from *RAA, IV, 2, 1927*).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

mains of the Panchen Lamas in Tashilumpo and that which holds the remains of the Dalai Lamas in the Potala Palace). Sometimes the *gduṅ rteṅ* contains books or written formulas (*gzuṅs*) that express in a series of phonemes the essence of a particular teaching or summaries of especially important texts, such as the Prajñāpāramitā in one verse. More often it contains *ts'a ts'a*, molds of clay mixed with the ashes of saintly lamas or fragments of books. On these *ts'a ts'a* are stamped some of the above-mentioned formulas as well as images of divinities or representations of famous stupas of both Tibet and India (IV, PL. 205). The more ancient *ts'a ts'a* were made with stamps imported from India, as can be inferred from the Indian characters on them.

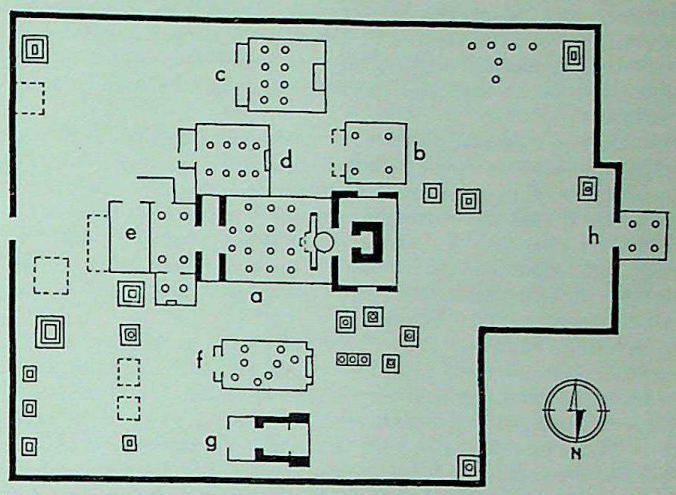
PAINTING. Tibetan art achieves noteworthy results in painting (ri mo) on walls as well as on canvas, silk, and wood. In Tibetan painting the conception must be distinguished from the execution. The inspiration is firmly founded in religious experience; unless he is dealing with representations of the Buddha, the bodhisattvas, and the Masters (for which there are helpful rules of iconography), the painter depicting the great tantric cycles must follow very complicated liturgical schemes that are described by these cycles. The artist, therefore, must have a knowledge of tantric literature and doctrine or he must let himself be guided by an expert. In the latter case, a lama outlines the compositional scheme (*bkod*) of the cycle to be depicted, designating the proper places for the various images or their symbols. The tantric masters must know how to draw the mandala that is part of the various rites to which only the initiates and those being initiated are admitted; the mandala is traced with colored powder on the ground inside a special temple (*dbaṅ skur lha k'aṅ*, as at Toling). When the rite is ended, the mandala is rubbed out. When the mandala is painted on the walls of temples, the lama and the artist cooperate closely, the former supplying the suggestions and outlines and the latter executing the painting. In some cases, however, both functions are carried out by the same person, especially in large monasteries, where there are always some lamas who are also artists.

Paintings on canvas or silk (tankas; *sku t'aṅ* or *t'aṅ sku*) are generally hung in temples but may also be rolled up and can be carried on journeys as protection against possible dangers. The material, usually rectangular in shape (in older paintings it is almost square), is carefully soaked in a lime solution and then treated by rubbing it with a smooth object (such as a shell). After this preparation, the outline of the figure is drawn on it; then the colors are added to the drawing. A cloth frame is sewed around the painting. In ancient times these frames were of cotton and later were made of precious Chinese damask. Finally, a fine silk flap is sewed on the top part of the frame to protect the painting (PLS. 35–42, 44, 46, 47; II, PLS. 385–387; XIII, PLS. 461–463).

Temple walls are usually covered with paintings (PL. 43). In their execution, a rather thick plaster, generally a mixture of earth and finely chopped straw, is spread on the wall. On this background, well-smoothed so as to remove all porousness, the design is outlined as for the tanka and then the colors are applied. An oily substance that gives the painting greater sheen is usually spread on the finished work.

The tradition transmitted by the Tibetan historian Tāranātha, which probably derives from older sources of Nepalese origin, indicates that the Tibetans received their artistic training from Indian masters. The monastery of Nalanda, considered one of the most important centers from which Buddhist culture spread into Tibet, not only gave form to the religion, but also inspired the art of Tibet. Tāranātha relates that, under King Dharmapāla of the Pala dynasty, two artists who were so expert that their ability was credited to miraculous teaching worked at Nalanda; these artists, Dhīmān and Bitpālo, both executed paintings and modeled statues at the same time. Their statues were in the style of the so-called "Eastern school." In their paintings, however, they followed two different directions. Dhīmān remained faithful to the tenets of the "Eastern school," while Bitpālo was greatly influenced by the art of Madhya Pradesh (central India).

The tradition handed down by Tāranātha can be considered reliable, since Pala and Sena art (see PALA-SENA SCHOOLS) undoubtedly had a great influence on the development of Tibetan art; it must be remembered, however, that many other regions of India and other countries influenced Tibet not only in its culture and religion but also in its art. Apostles and masters came to Tibet from Central Asia, Swat, Kashmir, and Nepal and also from China during its periods of political expansion. The contemporaneous existence of many styles is proved by some inscriptions on temple paintings (e.g., those at Iwang),



Tabo, monastery complex with eight temples: (*a*) gTsug lag k'aṅ; (*b*) dkyil k'aṅ; (*c*) gSer k'aṅ; (*d*) ạBrom ston lha k'aṅ; (*e*) Sgo k'aṅ; (*f*) Byams pai lha k'aṅ; (*g*) ạBrom ston lha k'aṅ (c'uṅ); (*h*) dkar ạbyuṅ (*from G. Tucci, Indo-Tibetica, III, 1, 1935*).

where it is written that some of the works were executed in the style of *Li lugs* and others in that of *rGya lugs*. [*Li* means Khotan, and Central Asia in general, and *lugs* means manner or school; *rGya* is an ambiguous word that may signify *rGya nag* (China) or *rGya gar* (India). It seems clear from the surviving works that the artist at Iwang was referring to India and not China.] This temple dates back to a period much later than the Tibetan conquest of Central Asia and belongs to the time of Sa skya pa (13th cent.). Some paintings discovered by Tucci (*Santi e Briganti nel Tibet ignoto, Diario della spedizione nel Tibet Occidentale*, 1935, 1937, p. 161) in the small temple at Mangnang, in western Tibet, can be considered originals or accurate imitations of a style of painting that probably existed in Kashmir in about the 12th century. The paintings of the *lha k'aṅ* of Alchi, in Ladakh, can also be attributed to the Kashmir school, but to a much later period.

Although the influence of Kashmir gradually became weaker as it mixed with the increasingly important Nepalese style, it extended to almost all of western Tibet and the neighboring regions (e.g. Spiti). Standing figures were elongated, and a tendency toward the narrative was emphasized, especially in tankas depicting the lives of saints or themes from sacred books. Each episode is self-contained and is enclosed in a frame. Thus the painting seems to be divided into many small panels.

With the advent of the Sa skya pa and the consolidation of their power, the China of the Yüan made its influence felt. While the Sa skya pa maintained close contact with Nepal for religious reasons — because they had begun the work of revising the sacred writings, later completed by Bu-ston (1290–1364), and because they had tried to foster a knowledge of Sanskrit by enriching their libraries with original texts in that language — for political reasons they appointed "imperial masters" (*ti shih*), who maintained continuous contact with the Mongolian dynasty. Many of them made frequent trips to China, sojourning there for long periods of time. This situation resulted in a cultural revival that affected all aspects of life and was especially notable in the arts. For example, the Chinese influence in the monastery of Shalu (residence of the writer Bu-ston) and its decoration is evident: sources assert that artists

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

were called from China and Mongolia to work on its construction (*Myaṅ c'uṅ*; Tucci, 1932–41, IV, p. 25).

This stylistic synthesis was checked and later definitively overcome by the prevalent Nepalese style, to which the great Sakya abbots were closely linked culturally because of their ties with the schools and masters of Nepal. In the 17th and 18th centuries, when contacts with China became more frequent and intense and Tibet finally came under Chinese rule, the Chinese provincial style became predominant, especially in the eastern regions (e.g., Kham). The prevalence of one style over another often depended upon the cultural links of the monasteries and upon the places with which they had greatest contact. The development in Tibet of these various styles does not depend only on historical events, but is also related to geographical factors and the cultural trends of the various monasteries.

Although Tibetan painting was influenced by various foreign styles, it was not lacking in a character of its own. Tibetan painting is religious painting that translates an experience symbolically by means of images, aiming at a religious and not an esthetic impact on the viewer. It follows mandatory schemes that had been established and elaborated in India in a well-known iconographic literature (*pratimālakṣaṇa*), which had been translated into Tibetan.

Painting in Tibet is not regarded as an expression of the creative imagination. It is an act of cult and therefore must conform to fixed norms, precisely defined in that literature which established the proportions in which the image is to be constructed. These paintings generally are rich compositions; Buddhas, bodhisattvas, and other divinities are almost never depicted alone but are portrayed with impressive retinues of acolytes. In other representations these deities dominate the composition amid a choir of elect in their own paradises (žiṅ kīams; II, PL. 385). The essential schemes of these paradises also are defined by a literature dedicated to them that sets forth the manner in which they must be depicted. Everything that is divine is unalterable and cannot be left to the artist's choice, lest the sacred character of the painting be diminished.

Except for gold, the colors, too, are unalterable. Gold represents all colors and is used in a particular type of tanka (*gser t'aṅ*), in which figures outlined in black stand out distinctly against a gold background; other colors are added to give the figures emphasis (PL. 35). Colors are important as indications of the aspect under which the divinity is represented. For example, a god in his calm aspect (*ži*) is represented in white; in a combative or terrifying aspect (*k'ro bo*) he is depicted in red or dark blue (II, PL. 387). Bodhisattvas are separated into groups according to their dependence on the five Buddhas of the supreme pentad (see BUDDHISM). The Buddhas and all the bodhisattvas and other divinities descended from them or connected with them through spiritual links or relationships have each their own particular color. Even in the choice of color, therefore, the artist is not free.

These inviolable rules resulted in the often inexpressive, conventional, and hieratic images of the Buddha or of other divinities that are the principal elements in the paintings. They are flat, remote projections, without chiaroscuro and relief; rarely do they suggest that interior reflectiveness that was expressed so well in Indian painting, as in the Bodhisattva with flower (Padmapāni ?) of Ajanta (I, PL. 48). The artist is generally free to follow his creative imagination in the details and the arabesques that adorn garments; for this reason Tibetan artists were able to make an easy transition into decorative art and miniatures.

These restrictions did not completely prohibit the painter from showing his inventive ability and skill in composition. This type of artistic expression can be found primarily in paintings dedicated to the lives of the Masters. The above-mentioned older examples, divided into separate sequences, were supplanted by paintings of greater breadth, in which schematic treatment is avoided and themes are freely developed. Aspects of Tibetan life and landscape are depicted with lively colors and much animation: there are processions of chanting monks or of pilgrims, small white houses hidden in green meadows, racing horsemen, and dream landscapes with rolling mountains and capricious clouds hovering in the infinite turquoise sky (PLS. 46, 47). As early as the period of the Sa skya pa these landscapes showed the Chinese influence which later became increasingly strong and precise, especially in the schools that grew up in the large monasteries (as in Tashilumpo), and which culminated in the painting of Kham. The landscape became an echo of Chinese landscape, and although sometimes remote, is always recognizable. However, it lacks the lightness of the Chinese landscape; everything — figures, mountains, and animals (phoenix, peacock, and gazelle) — becomes heavier but does lose a certain childlike grace. The Tibetan artist gloried in pure color; his palette had no nuances, and the only gradations were achieved by mixing different amounts of lime with the colors. The undeniable fascination of these paintings lies not only in their revelation of the life of the people but also in their brilliant colors, sometimes vivacious and always artfully juxtaposed in masses of green, red, and turquoise.

As the Chinese influence gradually grew stronger, another characteristic of Tibetan painting became evident. In ancient paintings almost no part of the surface is left free; it is completely covered with images, figures, and symbols, and the colors have an almost uniform tonality in which red dominates. This dense and monotonous composition gave way to a more airy conception, in which the figure stands alone in a space that gives breadth and emphasis to the work. Sometimes a bird is shown flashing through the air or the bare outlines of a flower are drawn in swift strokes. The style of the tanka sometimes depends on the subject depicted. In representations of the cycles of the *c'os skyoṅ*, the *sruṅ ma*, and the terrifying deities worshiped in the *mgon k'aṅ*, violent tones — especially red and black — predominate, and the symbols reproduced (skulls, offerings strewn with intestines and bloody flesh, and skulls brimming with blood) evoke the terrifying world that inspires them.

Though Tibetan painting is derived from or influenced by Indian and Chinese painting, it cannot be favorably compared with either. It suffers from overproduction. Only the poorest monasteries and private houses are without an abundance of tankas, and their quantity is overwhelming. Moreover, the mandatory sacred themes left little margin of creativity for the artist. With rare exceptions, the tankas, as acts of faith and devotion, are anonymous. Artists' names are found only occasionally in frescoes on the walls of large temples or in palace chapels. Many painters are named in the inscriptions of the *sKu ạbum* in Gyantse. As mentioned above, in these cases a distinction is made between the person who conceived the plan and the artist who executed it. The former is a monk; the latter is the painter, whose skill is generally measured by his ability to combine colors. The anonymous authorship and the lack of any chronological information make any dating of the tankas exceedingly difficult, unless some pertinent information can be drawn from the biographies of some of the Masters or from reports made by the donors about works commissioned by them.

Theoretically it is easier to date the wall paintings, because they are often accompanied by inscriptions that contain the name of the donor (*sbyin bdag*) in addition to that of the designer or painter. Frequently they also name the lamas who dictated the inscriptions or consecrated the paintings. Like all other images, a painting has no liturgical significance if it has not first been consecrated in a ritual ceremony (known as *rab gnas*). During the rite three symbolic syllables are written on the back of the image, at its head, neck, and heart; in special cases dedicatory inscriptions and the hand prints in red of the lama who consecrated them are added.

The painters are not always monks; some are laymen whose art has been handed down from father to son and whose textbooks are Tibetan versions of Indian iconographic treatises. In some monasteries, however, there are monks who have learned the art of painting along with other disciplines. In the printing shops of the larger monasteries, texts and tankas or series of tankas are engraved on wooden matrices (subjects include the lives of the Buddha, of the 16 or 18 arhats, of the great Masters, and of the Panchen Lama). Pilgrims carry copies of these back to their own districts; the result is a widespread

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

uniformity of execution of the schemes. Local painters were inspired by those woodcuts, which had prestige because they originated in the famous monasteries, and often they actually copied them. Thus in the most diverse parts of Tibet are reproduced, without any variations, the same versions of identical subjects.

In illuminated manuscripts, which are common in Tibet, Tibetan artists have imitated the Indians and Nepalese (cf. VIII, PL. 358). Whereas images of divinities and the Buddhist Masters appear on the first and last pages of printed texts, there are many manuscripts in which the inside pages also are decorated with miniatures. Many books, especially those which contain widely read works, such as the *Šer p'yin* or *Pīar p'yin*, are written in characters of silver or gold on large sheets of paper that are often tinted dark blue (with a mixture of water and powder of lapis lazuli). These works are often protected by finely carved and gilded wooden end boards (*glegs šin*), derived from the Indian *pālaka*. The predominant motifs on these end boards are the five Buddhas and the goddess Šer p'yin, surrounded by minor divinities and by carefully executed floral motifs. Some end boards were imported from India and Nepal and were used as models by Tibetan artists.

SCULPTURE. The term sculpture is inappropriate to Tibetan images in metal, because they are made by the lost-wax process. The preferred metal is bronze (*li*), which is used in various alloys and colors (PLS. 48, 49). Copper (*zaṅs*) and brass (*ra gan*) are also used. The most valuable statues are made of an alloy of eight metals similar to the *aṣṭadhātu* of India. There is very little stone sculpture, but technical treatises mention, in addition to alabaster, soft stone (*rdo mñen*). Rock-crystal images are imported from Nepal or made by Nepalese artists. Many images are made of terra cotta. Others, modeled of a mixture of earth and straw mounted on a wooden armature, are spread with a thin layer of plaster to receive the color; the technical term for such images is *bzo sku* or *lde sku*. Still other images are fashioned of papier-mâché.

Most of the bronze statues are gilded in painstaking processes that are not completely known. Often, in statues used for liturgical purposes, temporary gilding is added; it is limited to the face (*žal gser*) and is renewed regularly.

In sculpture, too, Tibet is indebted to those countries from which it drew its religion. According to Tibetan tradition, many statues have been imported into Tibet since the time of the first introduction of Buddhism and even since the time of King Sroṅ btsan sgam po. One of these is the Jobo, an image of the Buddha which the king's Chinese wife is said to have brought with her from China (it had originated in India) and which tradition attributes to Viśvakarma, the "architect of the gods." Presently in the Jo k'aṅ (aP'rul snaṅ) in Lhasa, it is certainly not the original. The statue of sGrol ma (Tārā) was brought to Lhasa by the king's Nepalese wife, along with the statue of Jo bo mi bskyod rdo rje, which is also attributed to Viśvakarma and worshiped in the Ramoche temple. The statue of Avalokiteśvara in the Jo k'aṅ is said by some writers to have appeared miraculously together with statues of acolytes while a Nepalese artist was preparing to model it, but according to Bu-ston it came to Tibet from southern India. The treatise writers have traced the various styles to their origins in Indian schools. These styles had initially been inspired by others in use in India, among the Uigurs, in Tibet at the time of the royal dynasty, and in ancient and in modern China. The styles that came to Tibet from India were many, differing according to the region from which they came: central, eastern, northern, southern, and western India, the latter including Kashmir.

Especially during the early years of the spread of Buddhism, there was a large-scale importation of Buddhist statues to Tibet from India and elsewhere that was fostered by the missionaries and Buddhist Masters, each of whom brought with him the image of his own *yi dam* (protective deity), which, upon his death, remained as an object of veneration in the temple where he had lived. An example is the image of Tārā which, according to tradition, belonged to Atīśa and which is now at Netang, where the Master is buried. It is also known that Rin c'en bzaṅ po sent for artists from Kashmir; some of them are named in sources. There is no doubt that the doorposts of Tabo with panels illustrating the life of the Buddha are the work of artists from Kashmir.

Some bronze statues surviving in the ruins of the temples of Tsaparang and Toling reveal the same origins, though it is not certain whether these came to western Tibet at the time of Rin c'en bzaṅ po or later. Some bronze statues that can be seen at bSam yas reveal the influence of Pala art; but some statues recently discovered in Swat are similar to others from the temples of western Tibet. This confirms the fact that art followed the same path of penetration as religion. Tibetan sculpture became increasingly indebted to that of Nepal, under whose influence an artistic koine was gradually established, enduring until new manners and trends from China modified sculpture as they did painting. Nepalese artists were active throughout Tibet at Sakya and then at Lhasa (where even now the Nepalese are primarily jewelers and metalworkers), at Tsetang, and at Tashilumpo.

According to tradition Luk, in western Tibet, now a modest village, was, at the time of the kings of Guge, an important center for the production of statues. There was another center at rTa nag in Tsang; many other production centers were in Kham and were, naturally, strongly subject to Chinese influence.

Like painting, and perhaps to an even greater degree, sculpture is bound by a strict iconography. Because of this there is considerable rigidity in the statues, and only a few succeed in expressing the serene contemplation of the Buddha: the mood of contemplative absorption that the images should portray is almost always weakened by an abstract, conventional scheme. The artists achieve more powerful representations in their depictions of terrifying deities (XIII, PL. 466) either prepared to meet the assault of demoniacal forces or performing a frenetic dance after having exterminated them (see TERROR AND THE MALIGN). Also more effective are the coupled statues of Tantric deities that represent the fusion of the active force, the method, with the compassion and gnosis that must be pervaded by the method in order to attain nirvana. These images are generally endowed with many heads and often with arms that are raised, each hand holding a weapon or ritual object; the resulting rhythms of moving masses are striking in their effect.

In some cases, as in the images of the *dvārapāla* (custodians of the doorway), which are believed to maintain the sacred character of a place, the influences of Chinese art are evident; however, the Tantric divinities, though primarily inspired by Nepalese examples, are stamped with a particular character that is a creation of the Tibetans. The same is true of painting, which achieves its greatest power of expression in its depictions of the Tantric cycles, demonstrating the tendency of the Tibetan artist to be most affected by and therefore to depict appropriately the demonic or the monstrous. His work is constantly inspired by the belief, fostered by Buddhism, that these divinities, whose appearance is so frightening, are basically only combative aspects of essentially merciful and protective deities. The images represent the vast pantheon of the Mahāyāna and the Vajrayāna and are inspired by the literature of the *sādhana*, which gives minute instructions about the liturgical rites that accompany the evocation and describes in detail the color, throne (*k'ri*), ornaments, the position in which the divinity sits, the *p'yag rgya* (gestures; cf. II, FIG. 690), the hair style, shape of the diadems and jewels, number of heads and arms, and the objects, symbols, or weapons held. These elements, which are immutable, make up the iconography of each divinity. When there are no inscriptions, these are the only data that permit certain identification of the god represented. The iconographic literature of Tibet is much more vast than that preserved in Sanskrit, and it constitutes an indispensable guide for recognizing the various divinities.

Among the divinities most often represented are sPyan ras gzigs (Avalokiteśvara), patron of Tibet, and sGrol ma (Tārā); both are invoked against the eight principal dangers that threaten man (e.g., fire, water, thieves). Together with aJam dpal (Mañjuśrī, PL. 48, right), they constitute the triad of deities (*rigs gsum mgon po*) who protect Tibet. Representations of

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

sPyan ras gzigs may take many forms, from the most common, with four arms, to another with eleven heads (Žal bcu gcig) and still another with a thousand arms and a thousand eyes (an eye in the palm of each hand, P'yag stoṅ spyan stoṅ). Images of Tārā, in one of 21 principal manifestations, of Ša kya t'ub pa (Šākyamuni), and of the *yi dam*, personal protective divinities, are generally found in private chapels. The images of Rin po c'e (the precious master), Padmasaṃbhava (the second Buddha), and, for the followers of the dGe lugs pa school, the image of Tsoṅ k'a pa, are also common.

Tibetan artists excelled in the execution of portraits and achieved much more striking effects in sculpture than in painting. The images of great Buddhist Masters and ascetics are innumerable (PL. 49). Though the subjects are wrapped in their garments and seated in the hieratic position, these statues have none of the conventionality of the images of the gods, because the artists succeeded in capturing the spiritual as well as the physical qualities of the persons represented.

Statues were also executed in richly painted clay and terra cotta. Some of the temples in Tsaparang contain fine examples of this type of image. They stand out against backgrounds frescoed with myriad small figures of divinities. Another example is to be found in the temple of Chasa (Bya sa), which dates back to the early times of the second introduction of Buddhism (12th–13th cent.). Along its walls are aligned large images of standing bodhisattvas in luxurious garments that reproduce Sassanian fabrics.

As the proportions of these statues were magnified (they often were several meters high), they came increasingly under the category of artisan work and occupied many craftsmen simultaneously. The iconographic schemes were still scrupulously respected, and the primary factor in the work was its grandiosity, which assured greater merit to its creator and to its patron. The craftsman could give free rein to his ability and skill only in the decoration and ornamentation.

Although this art is generally anonymous, the names of some artists are mentioned in scientific treatises; two such artists — Pad ma mk'ar pa and sLeu c'uṅ — are praised as founders of a school of art. The Tibetan artistic criteria of the beauty of a statue are always based on the exactness of the proportions, the care with which minor details — such as fingers, toes, embroidery, and fabric designs — are executed, and the smoothness and finish of the surface, which must be polished and nonporous (PL. 49, right).

An exact chronology of Tibetan sculpture is difficult to establish. Rarely do the statues bear datable inscriptions. Since the works are without the elements that are helpful in dating paintings (e.g., colors, landscape, perspective), it is much more difficult to distinguish schools and traditions in the large artisan production of sculpture. However, Tibetan tradition established the date of the oldest statues, those executed at the time of the kings of Tibet, as being immediately after the introduction of Buddhism and before the attempt of Glaṅ dar ma to suppress this religion. It has divided this ancient period into three phases: that of the most ancient kings, that of the kings of the middle period, and that of the last c'os rgyal. The criteria used are primarily extrinsic, but there are references to the Indian styles that influenced Tibetan statues (the oldest statues are compared to those of southern India). All this is mentioned very generally in the treatises; however, the oldest statues that survived the successive destruction and ruin of the monasteries, even when not actual originals, can easily be traced to Indian models and can be dated approximately on the basis of similarities and differences. This is true of the oldest examples, in which Tibetan artists followed their models, with the same fidelity with which they translated sacred texts and in which the influence of frequent political and cultural contacts with bordering countries was notable. Within a short time these influences were crystallized in a conventional art that, with rare exceptions, stifled almost completely all creative impulse. Once this koine had been established, any basis for comparison disappeared, and only such elements as weight, gilding, patina, and inscriptions remained as aids in dating the works.

Stone sculpture in the round is rare in Tibet, not because of a lack of raw material but because copper and bronze images were easily transportable by the Indian Masters and Tibetan pilgrims returning from India. These images were immediately taken up as models, and their style and popularity soon spread. The art of metalworking, primarily in its application for military purposes and in the decoration of weapons, had long flourished in Tibet; it was a simple matter to apply the established techniques of the art to religious ends.

Among the few examples of stone sculpture, literary sources cite a statue of Sroṅ btsan sgam po on his tomb and statues of the rigs gsum mgon po and rGyal ba rigs lṅa in Tantrup (K'ra ạbrug), attributed to the same epoch. That this art actually existed is confirmed by the stone lion recently published by H. Richardson (1936). This lion is from the tomb of King Ral pa can and is surely derived from Chinese models of the T'ang period (e.g., the guardian lion on the tomb of Kao-tsung).

The use of sculptured reliefs is limited to symbolic decorative elements [e.g., the base of the stele of Karchung (sKar c'uṅ)]; they have appeared since the time of the kings on pillars surmounting tombs or on those bearing engraved edicts.

MINOR ARTS AND HANDICRAFTS. The Tibetan's native taste for decoration, his technical skill, and his love of beautiful objects (even though these may sometimes be overloaded and rather baroque) find expression in handicrafts and the minor arts. Two types of objects are noteworthy in this respect: those devised for everyday domestic use and those created for liturgical use (see LITURGICAL AND RITUAL OBJECTS). Among the domestic objects are brass and copper teapots (PLS. 50, below right; 51). The handle and neck are often of finely engraved and embossed silver. Equally remarkable are the *takia* (more properly known as *žal k'yog*). These consist of a round plate on a cylindrical base; the plate has a depression in the center to hold the cup (*dkar yol*). They are often of jadeite or agate, with a lid that terminates in a piece of coral. Both the support and lid are embossed. The decoration is inspired by religious or auspicious motifs such as the seven gems (symbol of regal dignity) or the eight symbols of good omen (*bkra šis rtags brgyad*; umbrella, vase, fish, wheel, shell, lotus, standard, knot), surrounded by friezes, decoratve scrolls, and floral motifs. There are *takia* in gold and silver and also in thin steel with damascening in gold. Large copper vases (silver is used by wealthy families) keep food warm; sword scabbards are richly decorated with arabesques and set with turquoises and coral. The Tibetans wear a *gau*, or charm box, hanging from their necks or on their belts, especially when traveling. The *gau* is rounded on the top and contains formulas or, more often, small images wrapped in pieces of cloth. The image is visible through a small glass window on the lid of the box. Most *gau* are made of copper, copper and silver, or embossed silver decorated with the abovementioned symbols or, as also is true of the sword scabbards, with motifs derived from steppe art. The objects executed in Kham are particularly outstanding.

There are many kinds of liturgical objects. Among the most common, because it is indispensable for worship, is the lamp (*mar me*) that must always be lit on the altars in front of the images. These lamps are bowl-shaped and rest on a base at whose center often appears the motif of the *bum pa*, the vase of celestial ambrosia. Other indispensable objects are the *dřil bu* (small bell; IX, PL. 176) and the *rdo rje*, which is shaped like the double thunderbolt of Zeus and is inspired by the club held by Indra in traditional Indian iconography (II, FIG. 686). These objects have a complex symbolism; one is held in the left hand and the other in the right, in the various *p'yag rgya* (hand positions) without which the rite would not achieve its purpose. Also noteworthy is the *rus rgyan*, a kind of breastplate worn by the officiant during particular rites, primarily of an exorcizing nature. It is made of bone plaques (often of human bone) on which Tantric divinities are sculptured in relief. The plaques are held together by strings of bone beads. Equally important are the trays used for arranging the offerings (*gtor ma*) on the altars and the vases (*bum pa*) for sacrificial water (IX, PL. 177). In the decoration of this work the Chinese influence rather than the Indian predominates.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

BIBLIOG. W. Moorcroft, G. Trebeck, Travels in the Himalayan Provinces of Hindustan and the Punjab; in Ladakh and Kashmir; in Peshawar, Kabul, Kunduz and Bokkara from 1819 to 1825, Prepared from the Original Journals by H. M. Wilson, 2 vols., London, 1841; E. Schlaginweit, Buddhism in Tibet, Atlas of Objects of Buddhist Worship, Leipzig, 1863; E. Pander, Das lamaistische Pantheon, ZfE, XXI, 1889, pp. 44–78; W. W. Rockhill, Notes on the Ethnology of Tibet, Washington, 1895; L. A. Waddell, The Buddhism of Tibet or Lamaism, London, 1895, Cambridge, 1935 (2d ed.); A. Grunwedel, Mythologie des Buddhismus in Tibet und der Mongolie, Leipzig, 1900; S. C. Das, A Journey to Lhasa and Central Tibet (ed., W. W. Rockhill), London, 1904 (2d ed.); S. C. Das, A Tibetan-English Dictionary with Sanskrit Synonyms, Calcutta, 1903; S. F. Oldenburg, Sbornik izobrazenij 300 Burhanov (Collections of paintings of 300 Burquan), Saint Petersburg, 1903; S. C. Vidyabhusana, On Certain Tibetan Scrolls and Images, Mem. of the Asiatic Soc. of Bengal, I, 1, Calcutta, 1905; J. Hackin, L'art tibetain, Paris, 1911; J. C. White, Art in the Hill States of Nepal, Sikkim, Bhutan and Tibet, JIAI, XV, 1911, pp. 38–39; A. Grunwedel, Padmasambhava und Verwandtes, BA, III, 1913, pp. 1–37; B. Laufer, Dokumente der Indischen Kunst. Malerei: Das Citralakshana nach tibetischen Tanjur, Leipzig, 1913; A. H. Franke, Archaeology of Indian Tibet, Calcutta, 1914; A. H. Franke, Antiquities of Indian Tibet, 2 vols., Calcutta, 1914–19; Pennsylvania, The University Museum: The Alexander Scott Collection, by C. W. Bishop, The Museum Journal, V, 2, 1914, pp. 55–114; J. Hackin. Les scènes figurées de la vie du Buddha d'après des peintures tibétaines, Mém. concernants l'Asie Orientale, II, 1916, pp. 1–116; S. H. Ribbach, Vier Bilder des Padmasambhava und seiner Gefolgschaft, Mit. aus Museum fur Volkerkunde in Hamburg, V, Sup. 5, 1917; J. Hackin, Guide-Catalogue du Musée Guimet: Les collections bouddhiques, Paris, 1923; B. Laufer, The Use of Human Skulls and Bones in Tibet, Chicago, 1923; L. J. L. D. Ronaldshay, Lands of the Thunder-bolt: Sikkim, Chumbi and Bhutan, London, 1923; A. Salmony, L'art platique au Thibet, RAA, I, 1, 1924, pp. 25–29; G. N. Roerich, Tibetan Paintings, Paris, 1925; G. A. Combe, A Tibetan on Tibet, being the travels and observations of Mr. Paul Sherap, New York, 1926; A. K. Coomaraswamy, History of Indian and Indonesian Art, London, 1927; R. F. G. Müller, Die Krankheits und Heilgottheiten des Lamismus, Anthropos, XXII, 1927, p. 956f; P. Rousseau, L'art du Tibet, RAA, IV, 1, 1927, pp. 21–39; IV, 2, 1927, pp. 83–97; A. Getty, The Gods of Northern Buddhism, Oxford, 1928; G. N. Roerich, Tibetan Paintings, Paris, 1928; G. N. Roerich, Le Bouddha et seize grands Arhats, RAA, VI, 1929–30, pp. 94–100; G. N. Roerich, The Animal Style among the Nomad Tribes of Northern Tibet, Prague, 1930; M. Lalou, Iconographie des étoffes peintes dans le Manjusrimulakalpa, Paris, 1930; J. Hackin, La sculpture indienne et tibétaine au Musée Guimet, Paris, 1931; E. Boerschmann, Chinesische Pagoden, Berlin, Leipzig, 1931; C. Bell, The Religion of Tibet, Oxford, 1931; G. N. Roerich, Trails to Inmost Asia, New Haven, London, 1931; R. Linossier, Les peintures tibétaines de la Collection Loo, Études d'orientalisme presentées par le Musée Guimet à la memoire de Raymonde Linossier, I, Paris, pp. 1–97; The Chinese Lama Temple Potala of Jehol, A Century of Progress Exposition, Chicago, 1932; O. Janse, Tubes et Boutons cruciformes trouvés en Eurasie, BMFEA, IV, 1932, p. 187f; G. Tucci, Indo-Tibetica, 4 vols., Rome, 1932–41; W. Filchner, KumBum Dschamba Ling, Leipzig, 1933; G. Tucci and E. Ghersi, Cronaca della Missione scientifica Tucci nel Tibet Occidentale (1933), Rome, 1934; G. Tucci, On Some Bronze Objects Discovered in Western Tibet, AAs, V, 1935, pp. 105–16; R. H. Van Gulik, Hayagrīva, IAE, Sup. to vol. XXXIII, 1935; F. Lessing, Wesen und Sinn des lamaistischen Rituals, Hyllningsskrift tillagnad Sven Hedin, Stockholm, 1935; G. Tucci, Indian Paintings in Western Tibetan Temples, AAs, VI, 1937, pp. 151–204; W. E. Clark, Two Lamaistic Pantheons, 2 vols., Cambridge (Mass.), 1937; A. K. Gordon, The Iconology of Tibetan Lamaism, New York, 1939; S. Van Ranssalaer Cammann, Catalogue of the Tibetan Collection at Peabody Museum, Cambridge (Mass.), 1939; F. D. Lessing, Yung-Ho-Kung, An Iconology of the Lamaist Mythology and Cult, Stockholm, 1942; E. Boerschmann, Pagoden in nördlichen China, Orient in der deutscher Forschung, Leipzig, 1944; W. Asboe, Pottery in Ladakh, Man, 1946; G. Tucci, Tibetan Book-covers, Art and Thought, London, 1947, pp. 63–68; G. Tucci, Tibetan Painted Scrolls, 2 vols., Rome, 1949; M. Bussagli, Bronze Objects Collected by Prof. Tucci in Tibet, AAs, XII, 1949, pp. 331–47; G. Tucci, The Tombs of the Tibetan Kings, Rome, 1950; Catalogue of the Tibetan Collection and other Lamaist Articles in the Newark Museum, Newark (N. J.), 1950; P. H. Pott, Introduction to the Tibetan Collection of the National Museum of Ethnology, Leiden, 1951; A. K. Gordon, Tibetan Religious Art, New York, 1952; T. Schmid, The Cottonclad Mi la: The Tibetan Poet-Saint's Life in Pictures, Stockholm, 1952; G. Tucci, A Lhasa e oltre, Rome, 1952 (2d ed.); W. G. Van Meurs, Tibetan Temple Paintings, Leiden, 1953 (2d ed.); F. Lessing, The Eighteen Worthies Crossing the Sea, Stockholm, 1954; S. Hummel, Die Lamaistische Kunst in der Umwelt von Tibet, Leipzig, 1955; E. Bryner, Thirteen Tibetan Tankas, n.p., 1956; P. Aufschnaiter, Prehistoric Sites Discovered in Inhabited Regions of Tibet, East and West, VII, 1956–57, pp. 74–88; T. Schmid, The Eighty-five Siddhas, Stockholm, 1958; R. A. Stein, Peintures tibetaines de la vie de Gesar, Arts Asiatiques, V, 1958, pp. 243–71; G. Tucci, A Tibetan Classification of Buddhist Images According to their Style, AAs, XXII, 1959, pp. 179–87; B. Goldman, Some Aspects of the Animal Deity: Luristan, Tibet, and Italy, Ars Orientalis, IV, 1961, pp. 171–86; P. Pelliot, Histoire ancienne du Tibet, V, Paris, 1961; T. Schmid, Saviours of Mankind: Dalai Lamas and Former Incarnations of Avalokitesvara, Stockholm, 1961; rGyan drug mc'og-gñis, Namgyal Institute of Tibetology, Gangtok, 1962; H. Richardson, Early Burial Grounds in Tibet and Tibetan Decorative Art of the VIIth and IXth Centuries, CAJ, VIII, 1963, pp. 73–92; I. M. Casanowicz, Catalogue of the Collection of Buddhist Art in the U. S. National Museum, USMB, LIX, pp. 291–348.

Giuseppe TUCCI

Illustrations: PLS. 35–54; 3 figs. in text.

TIEPOLO, GIOVANNI BATTISTA, GIOVANNI DOMENICO, LORENZO BALDISSERA. Venetian painters of the 18th century, dominated by the personality of Giovanni Battista, one of the greatest exponents of 18th-century painting, who brought Venetian art back to a position of European importance, renewing the tradition of the great painters of the 16th century, in particular of Paolo Veronese (q.v.).

SUMMARY. Giovanni Battista (col. 82). Giovanni Domenico (col. 90). Lorenzo Baldissera (col. 94).

GIOVANNI BATTISTA. Born in Venice on Mar. 5, 1696, son of Domenico Tiepolo, a merchant and co-owner of a ship. In 1719 Giovanni Battista married Maria Cecilia Guardi, sister of the painters Giovanni Antonio and Francesco; she bore him nine children, including Giovanni Domenico and Lorenzo Baldissera, who later became his assistants. He died on Mar. 17, 1770, at Madrid, while in the service of the king of Spain.

Giovanni Battista was apprenticed at an early age in the workshop of Gregorio Lazzarini, from whom he learned a grandiose decorative style; but he soon surpassed his master's teaching, his nature, all "fire and spirit" (Moschini, 1806), preferring a bolder and more fluent style. His name appears in the Venetian painters' confraternity in 1717, but even prior to this date he had given proof of his independence and talent in *The Sacrifice of Abraham* (1715/1716) in the Church of S. Maria dei Dereletti (of the Ospedaletto), Venice, and in the lost *Crossing of the Red Sea* (1716), exhibited on the feast day of St. Roch in front of the Church of S. Rocco, Venice. (The painter remained particularly faithful to St. Roch and later painted a number of small canvases representing the pilgrim saint.) However, the earliest surviving signed and dated work by Giovanni Battista is the *Repudiation of Hagar* (1717/1719; Milan, Coll. Rasini), which reveals a taste for compositions using diagonal perspective and for large masses forming sharp contrasts of light and shade. Other commissions followed shortly, confirming the success of the young artist: the *Martyrdom of St. Bartholomew* (XII, PL. 368), the *Madonna of Mt. Carmel and the Souls in Purgatory* (PL. 57), and the works (1720–22) executed for Doge Giovanni II Cornaro, consisting of "overdoors with portraits and paintings of great accomplishment" that have since disappeared.

The earliest of Giovanni Battista's surviving frescoes is the *Apotheosis of St. Theresa* (ca. 1720) in the Church of S. Maria di Nazareth (of the Scalzi), Venice. This work marks the first documented instance in Tiepolo's career of the collaboration, in the ornamental and perspective parts, of the painter Girolamo Mingozzi (Colonna). This perspectivist, who worked in the tradition of Galli Bibiena, was Tiepolo's partner in all the more important frescoes.

The period of Giovanni Battista's youthful activity in Venice closed with the frescoes (ca. 1724–25) for Palazzo Sandi (now Cipollato), *The Power of Eloquence* (PL. 65), a sketch for which is in the Seilern Collection, London. For the same palace he supplied three canvases: *Ulysses Discovering Achilles among the Daughters of Lycomedes*, *Hercules and Antaeus*, and *Apollo and Marsyas* (now Castelgomberto, Vicenza, Coll. Schio). Despite baroque residuals and a certain tendency to exaggeration typical of his early years, the impetuous and forceful style of the young artist as a fresco painter in the grand heroic style was already fully developed.

About 1725 Archbishop Dionisio Dolfin summoned Tiepolo to fresco the Palazzo Arcivescovile, Udine. The decoration of the grand staircase, with the *Fall of the Rebel Angels*, of the Galleria, with *Rachel Hiding the Idols* (PL. 57), and of the Sala Rossa, with the *Judgment of Solomon*, represents a decisive moment in the history of Venetian painting, for the imaginative pictorial interpretation combined with passages completely new to the artistic repertory of the period. During the years at Udine Tiepolo also painted frescoes (1726) in the Chapel of the Sacrament in the Cathedral and various decorations, also in fresco, in the great hall of the castle.

Commissions outside Venice followed one another in quick succession. In 1731 the artist was in Milan, where he frescoed

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

five ceilings in the Palazzo Archinto: *Triumph of the Arts, Phaeton and Apollo, Perseus and Andromeda, Juno with Fortune and Venus*, and *Nobility* (all completely destroyed during World War II). He also painted the main hall of Palazzo Dugnani (formerly Casati) with the allegory of Magnanimity on the ceiling and, on the walls, Scipio in scenes illustrating his magnanimity and Sophonisba receiving the poison from Massinissa (VII, PL. 269). In both these Milanese decorative groups another step toward the control of light, a more ethereal interpretation of pictorial masses, a clearer break from tradition, and a greater coherence in the over-all conception are evident.

In September, 1732, he was in Bergamo, where he frescoed the vault of the Cappella Colleoni with allegorical figures of Justice, Wisdom, Faith, and Charity; in the lunettes of the choir he painted a St. Mark and the *Martyrdom of St. Bartholomew*. In the autumn of the following year he was again employed in the same chapel painting scenes from the life of John the Baptist: *John the Baptist Preaching*, the *Baptism of Christ*, and the *Decapitation of John the Baptist*. Tiepolo's works made a strong and deep impression on the painters of Bergamo, where he had a number of pupils and imitators.

The orientation of Giovanni Battista's style toward the formal classicism that later characterized his mature works began to manifest itself in the frescoes of Villa Loschi at Biron (Vicenza), on which he worked for three months in the autumn of 1734. The themes suggested by the patron were secular allegories: on the ceiling of the staircase Time unveiling Truth and on that of the main hall the allegory of Justice, Fortitude, Temperance, and Truth, with various scenes representing the Triumph of the Virtues along the walls.

The painter's fame was such that in 1736 the Swedish ambassador to Venice, Count G. de Tessin, attempted to negotiate a commission for him to decorate the Royal Palace at Stockholm, but without reaching an agreement. One of the Count's letters states that Tiepolo was working for the Cornaro family for six months in 1736, most probably on the frescoes executed for Palazzo Cornaro di S. Maurizio at Merlengo (Treviso), illustrating the story of Iphigenia (now too damaged to permit critical evaluation).

In 1737 Tiepolo was again in Milan, where he frescoed the Chapel of S. Vittore in the Church of S. Ambrogio (*Martyrdom of St. Victor, Shipwreck of St. Satirus*) and the ceiling of the sacristy (*Glory of St. Bernard*; destroyed during World War II). Simultaneously he was drawing up the contract for the vault decoration of the Church of the Gesuati (S. Maria del Rosario), Venice, on which he worked sporadically, completing it in October, 1739. In the three compartments of the vault — *St. Dominic Instituting the Rosary* (PL. 59), *St. Dominic in Glory*, and the *Virgin Hearing the Saint's Prayers* — he adopted a strongly foreshortened perspective, achieving a dazzling spatial illusionism. Immediately afterward Tiepolo suggested the themes for the paintings for the Scuola dei Carmini, of which the ethereal and radiant *Madonna of Mt. Carmel* is dated 1740. Also from 1740 are the frescoes of Palazzo Clerici at Milan, where he painted the *Course of the Sun on Olympus*, of unparalleled imaginativeness. The artist was, in fact, at the threshold of his full maturity and success. In the 1740s he accepted a great many commissions; religious and secular subjects followed one another uninterruptedly, constantly renewed by his inexhaustible inventiveness. The religious masterpiece of these years, also his most complex work, is the vault of the Church of the Scalzi, Venice (1743–44), where, with the help of Mingozzi, he painted a fresco (destroyed during World War I) of the miracle of the Holy House of Loreto, placing the composition in the infinite vastness of a sky imbued with an intense luminosity.

From this period onward Giovanni Battista was to dedicate his major efforts in fresco painting almost exclusively to secular subjects. In the summer and autumn of 1743 he decorated Villa Cordellina at Montecchio Maggiore (Vicenza) with historical subjects. The villa has been restored and the ceiling fresco representing Nobility and Virtue, transferred in 1917 to the Museo Civico at Vicenza, has been returned. The two vast scenes on the walls of the villa (*The Magnanimity of Scipio* and *The Family of Darius before Alexander*), in the luminosity of their colors, preface the frescoes at Palazzo Labia. During this decade he executed numerous large-scale secular decorations for Venetian palaces: the frescoes for Palazzo Barbarigo, *Time Revealing Truth* and the *Allegory of Fortitude and Wisdom* (1744–45; the latter, on canvas, now at Venice, Ca' Rezzonico); the *Triumph of Zephyr and Flora* for Palazzo Pesaro (now also at Ca' Rezzonico); the admirable ceiling fresco of Mars and Venus for Palazzo Pisani Moretta; and the important complex for Palazzo Barbaro, comprising the ceiling fresco, the *Apotheosis of Francesco Barbaro* (Met. Mus.), and four overdoors on canvas: the *Gifts Offered to Cleopatra* (Pavia, Coll. Necchi), *Timoclea and the Thracian Commander* (Washington, Nat. Gall.), *Tarquin and Lucretia* (Augsburg, Bayerische Staatsgemäldesamml.), and the *Betrothal* (Copenhagen, Statens Mus. for Kunst). To these are to be added the frescoes for Palazzo Papadopoli; those for Palazzo Sagredo (now Milan, Coll. M. Crespi; Bergamo, private coll.); and two splendid ceiling canvases — *The Triumph of Fortitude and Virtue*, originally painted for Palazzo Servi-Manin, and the *Marriage Allegory of the Casa Cornaro*, executed for Palazzo Corner Mocenigo (both, Florence, Coll. Contini Bonacossi).

To this period belongs the most famous cycle of frescoes executed by Tiepolo in Italy: that for Palazzo Labia, with the story of Anthony and Cleopatra (PL. 60), completed before his journey to Germany and not in 1757 as claimed by H. Modern (1902), who based his argument on a misread date. With the collaboration of Mingozzi on the ornamental parts, Tiepolo realized a beautiful example of pictorial illusionism. The strong lines are of crystalline purity; the colors are vivid and luminous and the skies increasingly transparent. Shortly before leaving for Germany, possibly in the summer of 1750, the painter completed the frescoes of Villa Contarini at Mira (now Paris, Mus. Jacquemart-André), commemorating the visit of Henry III in 1574. Never has historical reality been interpreted with such immediacy and richness of detail as in the exact descriptions of a society that Tiepolo noted with good-natured malice.

Toward the end of 1750 Tiepolo left for Würzburg, engaged by the prince-bishop, Carl Philipp von Greiffenclau, to decorate his sumptuous Residenz, which was being completed by the gifted architect Balthasar Neumann. Tiepolo's sons Giovanni Domenico and Lorenzo accompanied him. The artist began by frescoing the Kaisersaal, with, on the ceiling, *Apollo Conducting to Barbarossa His Bride, Beatrice of Burgundy*, and on the walls the *Wedding of Barbarossa* (X, PL. 312) and the *Investiture of Bishop Harold* (PL. 60), dated 1752 and completed on July 4. In the same year he sketched the designs for the large fresco for the staircase, executed in 1753.

The frescoes at Würzburg mark one of the most successful phases of Tiepolo's career. Confronted with a difficult iconographic theme, the artist succeeded in creating, in the Kaisersaal, a decorative complex that, in its combination of the white of the stuccoes set off by gold and in the sparkling gaiety of the colors, forms one of the most striking creations of the period. An even more formidable achievement is the decoration of the great staircase, in which the four parts of the world then known (XI, PL. 109) are exalted in a sort of pagan-Christian cosmorama. Tiepolo here brought together a whole iconographically fantastic congeries of races, costumes, and fauna and flora, with multicolored crowds of pagan deities and mythological, symbolical, and allegorical figures alternating with splendid groups of contemporaneous court figures who convey a note of out-of-place reality in this immense aerial stage. In the Residenz frescoes Tiepolo's technique reached its peak. Light has a crystal transparency; the figures, apparently floating in space, are set off by their brilliant tones. The two pictorial complexes completed by Tiepolo during his three years at Würzburg were to provide a durable and unsurpassed model for German art, as Tiepolo's influence surpassed local limits and extended throughout southern Germany and to Austria in particular.

After leaving Franconia for Italy toward the end of 1753, Tiepolo worked without pause. In June, 1754, he began the vault decoration of the Church of S. Maria della Pietà, and by August of the following year he had completed the large central

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

fresco (*The Triumph of Faith*; PL. 59) and the two minor scenes, one depicting Faith, Hope, and Charity and the other David and the Angel. His usual themes were combined with fresh inventions creating a mystical, religious vision of rhythmic tonalities and an ever-increasing transparency that finally dissolves into infinity. Most probably the frescoes of Villa Soderini, Nervesa (destroyed 1917), date from 1754. In the great hall Tiepolo, in collaboration with Mingozzi, returned to the representation of a historical theme, the exploits of the Soderini, with the Apotheosis of the Soderini family on the ceiling, and on the walls the entry of the Gonfaloniere Pier Soderini into Florence and Nicola Soderini in the Roman senate.

After his stay at Würzburg Tiepolo entered a new stylistic phase represented, in its maturity, by the frescoes of 1757 for Villa Valmarana ("Villa of the Nani") at Vicenza (PL. 61), formerly dated twenty years earlier. The discovery of their exact dating has contributed greatly to the understanding of Tiepolo's artistic evolution, making it possible to distinguish the style of Giovanni Battista from that of his son Giovanni Domenico, who collaborated with his father in the so-called "Foresteria" (guesthouse). In the frescoes of Villa Valmarana (Sala dell'Iliade, Sala dell'Eneide, Sala dell'Orlando Furioso, Sala della Gerusalemme Liberata, in the Palazzina; Sala dell'Olimpo, in the "Foresteria"), the unusual subjects drew completely new solutions and ideas from Tiepolo's inexhaustible imagination: his palette of delicate tones is exceptionally refined and sparkling; the line is vibrant, fragile, and exquisite in its lightness, the figural and decorative ensemble leaning toward the playfulness of the French rococo.

Also of this period is the decoration of the great hall of Palazzo Trento-Valmarana, Vicenza, on the ceiling of which the artist painted four allegorical tondos with, in the center, the *Triumph of Truth over Error*, a work of admirable invention (destroyed 1945). The following year he began the decoration of two ceilings in fresco with a nuptial allegory and an allegory of Merit in Ca' Rezzonico, Venice, reviving with new themes the Würzburg compositions. In 1759, after more than thirty years, he returned to Udine and painted, with the collaboration of Giovanni Domenico on the monochromes, the Assumption on the vault of the Church of the Purità; this work, of sensitive line and diaphanous tonality, was executed in the incredibly short space of 32 days. Tiepolo's art, especially in his ceiling frescoes, was at this point entirely aimed at rendering the extreme delicacy of atmospheric tones in the figures, which become increasingly light in weight, enveloped in an iridescence of color.

In the next two years, before his departure for Spain, Tiepolo continued to work incessantly. In 1761 he painted the frescoes in Palazzo Canossa, Verona, with the marvelous *Triumph of Hercules*, which in some ways anticipated the imposing works realized later at Madrid. Between autumn of the same year and the first months of 1762 he completed the ceiling of Villa Pisani at Strà, with the *Apotheosis of the Pisani Family* (PL. 61), one of his most complex pictorial creations, also a prelude to the Spanish works.

In 1761 Charles III of Spain asked Tiepolo to decorate the new Royal Palace in Madrid. The negotiations were protracted until the painter was ordered by the Doge of Venice to abandon his work at Villa Pisani and leave for Spain in April, 1762. He was accompanied by his sons Giovanni Domenico and Lorenzo. The difficult journey lasted until June and Tiepolo arrived ill and tired at Madrid. His most difficult undertaking was the vast fresco for the Throne Room, the *Apotheosis of Spain*, dated 1764, in which Tiepolo seems to reecho, almost as if in a last summing-up, all the creations of his imagination, alternating allegorical and symbolical episodes. This was followed by two minor frescoes representing, in the Guardroom (Hall of the Halberdiers), *Aeneas Led to the Temple of Venus*, and in the Queen's Antechamber, the *Apotheosis of the Spanish Monarchy*.

The painter seemed to withdraw into himself, his creative force ebbing and the impetus of his fantasy no longer at its former strength. The story of Tiepolo's last years in Spain is a sad one. At the close of his brilliant career the great painter found himself misunderstood, opposed, and obstructed. A shadow was cast on his fame by the presence at court of Anton Raphael Mengs, the promoter of a return to classicism, who was protected by important prelates who did not approve of the pagan flavor of Tiepolo's works. But the old painter, although embittered, continued to work. In 1769 he was commissioned to fresco the apse of the Church of S. Ildefonso, Aranjuez, and he immediately presented the preparatory designs to the king. Death overcame him on Mar. 27, 1770, at work at his easel; he was probably giving the finishing touches to the *St. Pascal Baylon*, which was later engraved by Giovanni Domenico with the moving attestation that the painting was completed "ante suum decessum."

Although Tiepolo's most successful achievements were his fresco paintings, his almost limitless creativity was no less forceful or intense in his easel paintings: from the great scenographic schemes to the numerous smaller canvases, whether sketches, projects, or studies for paintings or frescoes. Wherever he poured out the boundless vitality of his pictorial world, whether in profane, sacred, heroic, or historical and anecdotal themes, his imaginative and original ardor of expression, his immediate spontaneity, and his easy and fluid narrative style are evident.

Closely connected with his activity as a fresco painter are the innumerable preparatory sketches that Tiepolo presented to his patrons for their approval. There are often two, three, or more preliminary sketches for a single composition, an indication of the artist's urge to perfection, his self-critical approach, more exacting than his patrons'. The preparatory sketches constitute an illuminating appendix to Tiepolo's decorative complexes, attesting the scrupulous care with which the painter studied his themes, the compositional solutions and the changes to be made.

Among the preliminary oil sketches of larger dimensions, almost paintings in their own right, is the recently discovered large canvas representing the Olympus (New York, Wrightsman Coll.), a preparatory study for the staircase fresco at Würzburg presented to Greiffenclau in April, 1752. Other oil sketches for the complex of the Kaisersaal are in Stuttgart (Staatsgal.), Boston (Gardner Mus.), and London (Nat. Gall.). Among the more remarkable smaller sketches are those for Palazzo Labia (Edinburgh, Nat. Gall. of Scotland; Stockholm, Konsthistoriska Inst., Stockholms Univ.). Sketches for secular subjects include one for the Olympus of Palazzo Clerici (Zurich, Hausammann Coll.); those for the cycle at Palazzo Archinto (PL. 58; Lisbon, Mus. Nac. de Arte Antiga; Vienna, Ak. der Bildenden Künste; Durham, Bowes Mus.; New York, Frick Coll.) and that of Villa Cordellina (Stockholm, Nationalmus.; Milan, Coll. M. Crespi; London, Dulwich College Picture Gall.); that for the fresco at Palazzo Canossa at Verona (Manchester, N.H., Currier Gall. of Art); and those for the Spanish frescoes, now in Washington (Nat. Gall.), Boston (Mus. of Fine Arts), Cambridge (Fogg Art Mus.), and New York (Met. Mus.; Wrightsman Coll.). Preliminary sketches for religious subjects include the splendid ones for the fresco of the Church of the Scalzi (Venice, Acc.; London, Rosebery Coll., where there is also a sketch for the fresco of the Church of the Pietà) and those for the vault decoration of the Church of the Gesuati (formerly Berlin, Staat. Mus., now destroyed; Milan, Coll. M. Crespi). Sketches also exist for decorations that either were never executed or have been destroyed; these are of great interest for completing the vast panorama of Tiepolo's work.

Tiepolo painted preparatory studies not only for his frescoes but also for his more important canvases. Among the most significant are the sketch (London, Nat. Gall.) for the altarpiece of Pope Clement adoring the Trinity, painted for the Convent of Schloss Nymphenburg (1734–37; now in Munich, Alte Pin.); the small canvas of the *Martyrdom of St. Sebastian* (Cleve. Mus.), a sketch for the altarpiece at the church of the convent at Diessen (1739); the sketch (1759; Amsterdam, Rijksmus.) for the altarpiece (now Dresden, Gemäldegal.) with the Presentation of the Virgin; and the moving, dramatic *St. Thecla Praying for the Plague-stricken* (1759; PL. 62), a sketch for the altarpiece at the Cathedral of Este.

The easel paintings permit a chronological study of Tiepolo's

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

stylistic development. Among the most important examples from his earliest years are *Diana and Callisto*, *Diana and Actaeon*, *Apollo and Marsyas*, and the *Rape of Europa* (Venice, Acc.), all formerly attributed to Sebastiano Ricci; the *Rape of the Sabines* at The Hermitage, Leningrad, where there is also a striking *Annunciation*, one of his earliest works, only recently identified; *Jugurtha before the Roman Consul* (Baltimore, Walters Art Gall.); and two recently discovered ovals with St. Martin of Tours and St. Blaise (Venice, Mus. Correr) flanked by two lively portraits recalling the pharmacist-donor of the Burano *Crucifixion* (S. Martino), also dating from his early years. These works testify to the artist's search for a personal style, to his innate pictorial force, and to his sharp wit, which are evident in canvases such as the *Temptation of St. Anthony* (PL. 55), the *Venus at the Mirror* (Milan, Coll. Gerli di Villagaeta), and the *Alexander and Campaspe in the Studio of Apelles* (Montreal, Mus. of Fine Arts), in which Tiepolo, with simple straightforwardness, opens the doors to the intimacy of his studio, picturing himself before his easel with his wife, Maria Cecilia Guardi, as the posing model, the blackamoor Ali, and their white Pekingese.

About 1725–30 Tiepolo completed for Ca' Dolfin, Venice, a series of ten canvases of subjects from Roman history, five of which (the *Triumph of Scipio*, *Volumnia before Coriolanus*, *Mucius Scaevola and Porsenna*, *Fabius Maximus at the Carthaginian Senate*, and *The Dictatorship Offered to Cincinnatus*) are at The Hermitage, Leningrad; two others (*Eteocles and Polyneices* and *Hannibal Contemplating the Severed Head of Hasdrubal*) are at the Kunsthistorisches Museum, Vienna; and the remaining three (the *Triumph of Marius*, the *Battle of Vercelli*, and the *Taking of Carthage*) were formerly in the Castiglione Collection, New York.

Tiepolo was influenced by Giovanni B. Piazzetta (q.v.), as is evident in works such as the *Adoration of the Christ Child* (1732; Venice, S. Marco, sacristy); *Abraham and the Angels* and *Hagar and Ishmael*, executed for the Scuola di S. Rocco, Venice; and the *Education of the Virgin* (Venice, S. Maria della Fava). But Piazzetta's influence diminished and Tiepolo reached a new stylistic balance with the altarpiece (1734) of the parish church at Rovetta (Bergamo), representing the Virgin adored by Apostles and saints. In the same year he engaged to paint the much-admired *Martyrdom of St. Agatha* for the Church of S. Antonio at Padua, completed in 1737. Tiepolo's canvases of this period reveal a tendency toward classicism, already present in the *Gathering of the Manna* (PL. 58) and the *Sacrifice of Melchizedek*, both in the parish church at Verolanuova, and more pronounced in the four canvases formerly in Villa Girola, near Como, classical also in subject: the *Birth of Venus* (Dresden, Gemäldegal.); *Danaë* (PL. 55), in which is to be found a new ideal of opulent feminine beauty; and *Juno and Luna* and *Bacchus and Ariadne* (formerly New York, Timken Coll.).

Between 1743 and 1746 Count Francesco Algarotti was in Venice, sent by Augustus III, Elector of Saxony, to buy paintings for the royal gallery at Dresden. Certainly the contact with Algarotti — man of the world, scholar, connoisseur, and *bel esprit* — must have influenced the artistic development of Tiepolo, who, already tending toward classicism, emphasized it with a cosmopolitan elegance in works painted for the Count. In 1743–44 Algarotti commissioned two paintings that he intended to give to Prime Minister Heinrich von Brühl: *Maecenas Presenting the Arts to Augustus* (Leningrad, The Hermitage) and the *Triumph of Flora* (San Francisco, M. H. De Young Memorial Mus.). At the same time Algarotti acquired for the Dresden gallery the *Banquet of Cleopatra* (1743–44; Melbourne, Nat. Gall. of Victoria). Algarotti saw in Tiepolo a second Veronese, and he found the artist fully up to his expectations in the *Rape of Europa* (1743; London, Runciman Coll.), which the Count had acquired for Augustus III — inspired by, almost a copy of, Veronese's original — and *Christ and the Magdalen in the House of the Pharisee* (1760–61; Dublin, Nat. Gall. of Ireland), copied by Tiepolo for Algarotti from the canvas by Veronese now at Turin (Gall. Sabauda). Another painting of pronounced Veronesean influence is the *Finding of Moses* (Melbourne, Nat. Gall. of Victoria), which until a short time ago was attributed to Sebastiano Ricci. Also belonging to this period is the canvas with Neptune offering Venice the riches of the sea, painted for the Palazzo Ducale, Venice.

The elegant and slightly superficial style of the secular paintings was tempered by a more profound religious sentiment in paintings such as the *Martyrdom of St. Agatha* (PL. 56) and the series of the *Passion of Christ* (comprising canvases now at Hamburg, Kunsthalle; Louvre; St. Louis, City Art Mus.), dominated by the pathos of the Christian drama, already expressed in the Passion triptych in the Church of S. Alvise, Venice (ca. 1730–40). In this triptych there are echoes of Titian and Rembrandt; and the figures, of great evocative power, illustrate the sacred themes with a strong and human realism.

During the three years Tiepolo spent in Würzburg he executed numerous works on canvas: from the series of *Rinaldo and Armida*, painted for the Residenz (now Munich, Alte Pin.) to the two large altarpieces (1752), depicting the fall of the rebel angels and the Assumption, at the Residenz chapel. A masterpiece belonging to the German period is the *Adoration of the Magi*, painted for the Benedictine Abbey at Schwarzach (1753; Munich, Alte Pin.).

Tiepolo's sojourn in Würzburg suggested not only purely decorative secular works of refined elegance and consummate bravura such as another series of *Rinaldo and Armida* painted for Palazzo Serbelloni, Venice (ca. 1755; Chicago, Art Inst.), but also religious works such as the *Finding of Moses* (Edinburgh, Nat. Gall. of Scotland). Before leaving for Spain Tiepolo executed one of his most moving examples of sacred art: the altarpiece of St. Thecla for the Cathedral of Este (1759), in which all pictorial sensuality is subordinated to a profound religious atmosphere and a deeply felt human emotion.

The number of Tiepolo's religious works dating from his stay in Spain is remarkable. After having completed the frescoes at the Royal Palace, he was commissioned to paint seven altarpieces for the Church of S. Pascual, Aranjuez, depicting St.Paschal Baylon, St. Francis of Assisi, and the Immaculate Conception (all, Prado), St. Joseph with the Christ Child (Detroit, Inst. of Arts), St. Charles Borromeo (Cincinnati, Art Mus.), St. Peter of Alcántara (Madrid, Royal Palace), and St. Anthony of Padua (Madrid, Rodríguez Banza Coll.). The hostility of Fray Joaquín de Eleta caused the seven altarpieces to be removed from the altars and replaced by canvases by Mengs, Francisco Bayeu, and Mariano Salvador de Maella. Another altarpiece belonging to the Spanish period is that with St. James of Compostela (PL. 63), painted in silvery and pearly colors. Among the religious paintings in which Tiepolo expressed himself with deep dramatic feeling are the *Annunciation* and *Abraham and the Angels* (Madrid, Villahermosa Coll.); the two canvases with the Flight into Egypt, both at Lisbon (Mus. Nac. de Arte Antiga, PL. 63; Pinto-Basto Coll.), which herald Goya in their tragic quality; and the *Entombment* (Lisbon, Pinto-Basto Coll.), pervaded with mystical resignation. Tiepolo must inevitably have felt the influence of the severe Catholic environment in Spain, for in the canvases of this period there is an unusual renunciation of spectacular elements. But it is equally true that he greatly influenced Spanish neoclassical painters and especially Goya (q.v.), whose tumultuous spirit must have well understood the innate pictorial vitality and the coloristic sensuality of the Venetian master.

Tiepolo's activity as a portraitist deserves mention, although few of the portraits painted by him survive. From the first, Tiepolo revealed a perceptive skill in character portrayal, as can be observed from his numerous self-portraits, beginning with those of the Udinese period. V. da Canal (1732) recorded that Tiepolo executed several portraits in Ca' Cornaro, Venice, today unfortunately lost but probably not very different from the portrait of the pharmacist-donor represented in the *Crucifixion* at Burano. So absorbed was the painter in his large decorative tasks, however, that he gave little time to portraiture, and the only known examples on canvas are the half-figure of Antonio Riccobono (Rovigo, Pin. dell'Acc. dei Concordi) and the portrait of the procurator Giovanni Querini (Venice, Gall. Querini Stampalia), the first imaginary and vigorous, the second, from life, an unequaled example of the painter's subtly humorous

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

psychological penetration. In addition there are two enchanting female portraits: an early one representing a peasant girl with a basket of fruit and flowers (ca. 1720–25; Zurich, private coll.) and another of a young woman playing the mandolin (ca. 1755–60; Detroit, Inst. of Arts). Despite their slightly idealized character, paintings such as the *Euterpe* (Barcelona, Mus. de Arte de Cataluña) and the *Young Woman with a Macaw* (Oxford, Ashmolean Mus.), once a companion piece to the *Young Woman with a Fur* (location unknown), should also be regarded as portraits. In fact, portraiture, considered as a human and finely satirical record, is evident in all Tiepolo's frescoes. From the youthful frescoes at Udine and those in Villa Contarini (a true collection of contemporary manners) to the unforgettable examples at Würzburg and those at Villa Pisani, there are self-portraits and portraits of well-known figures, patrons, and friends. Also related to the artist's predilection for character portrayal are his numerous *têtes de caractère*, of evident Rembrandtian inspiration, generally represented with heavy beards and robed in Oriental fashion wearing turbans, gold chains, or jewels.

An immensely rich collection of drawings parallels Tiepolo's activity as a painter: every principal step of his career is documented by sketches or preparatory studies, in sanguine, in charcoal, in pen, or in sepia wash (PL. 64). Although more than a thousand sheets of drawings and sketches are extant, they are probably only a part of the actual production of this dynamic artist. The most important groups of drawings by Tiepolo, who as a draftsman is on the level of Tintoretto, Rubens, and Rembrandt, are to be found in Trieste (Mus. Civ. di Storia ed Arte), in Florence (Fondazione Horne; Uffizi), in Bassano del Grappa (Mus. Civ.), in London (Vict. and Alb.), in New York (Met. Mus.; Pierpont Morgan Lib.), and in Vienna (Albertina).

A chronological study of Tiepolo's graphic work reveals the artist's search for a style. His early drawings show his concern for anatomy, drawn with a bold sureness of rippling line that gives an immediate measure of his "Tintorettesque" potentiality. Toward 1730 one sees the beginning of a firmer and more decisive line and a new manner of shading from the half-tones to the denser shadows. These innovations are particularly apparent in the group of sketches for the frescoes of Villa Loschi at Biron (1734). Shortly after 1740 the artist adopted a new style of pen drawing that was more rapid and summary, aimed at capturing the essence of the principal forms and movements. The most interesting of this type are the studies for Villa Valmarana (1757), which seem to fix the flashing visions of the artist's fantasy with bare suggestions of lines and chiaroscuro in lightning strokes — a type of figural shorthand that Tiepolo retained until his last works. Often Tiepolo's drawings were inspired simply by the wish to fix the play of light, movement, or various aspects of nature, as, for instance, in his "rural" works, which vibrate with a sincere love and deep feeling for landscape, or in his numerous caricatures, in which the comic side of humanity is laid bare with a good-natured Goldonian spirit.

Tiepolo left an indelible mark as an engraver, rendering sunshine and magical lighting effects with unmatched skill. His light, rapid touch gives a sort of luminous vibration to the composition (IV, PL. 437). He was doubtless familiar with Rembrandt's engravings, but he replaced their dramatic somberness with a joyous effect of light. Among the most significant examples by the Venetian master are the spirited and fantastic *Capriccii* (V, PL. 241), certainly conceived before 1740 and published by A. M. Zanetti in 1749, and the later *Scherzi di Fantasia*, surprising for their whimsical character.

Tiepolo was not an artist misunderstood by his own time; on the contrary, he expressed the ideals of the 18th century with such liveliness, force, and fantasy that all Europe, with the possible exception of France, saw him as the leading painter of his day. In his youth he was a revolutionary painter, rebelling against the baroque stereotypes of official art (as represented by Onofrio Loth, G. A. Fumiani, Nicolò Bambini, and Antonio Zanchi) and joining innovators such as Piazzetta, Ricci, and Federico Bencovich. He was absolute master of the whole range of his art, bringing fresco painting back to the artistic level of Giorgione, Titian, and Veronese; by 1720–30 he had surpassed anything being produced in Italy, from G. M. Crespi to Piazzetta, from Alessandro Magnasco to Ricci, from Francesco Solimena to Corrado Giaquinto. One of the chief reasons for his success was certainly the way he used his colors: in the first place, giving the figures bright and lively colors in close juxtaposition with cool colors to impart to them a joyous vitality; and in the second, achieving in his compositions an exact balance of tones to create a perfect harmonization of the figures in perspective so that they are absorbed into the atmospheric distance. It has been said that Tiepolo introduced in painting a sun that had never before been seen; certainly, with him began the conquest of light and atmosphere in which only the names of Canaletto and Guardi rank beside his and which determined the pictorial current that was to be a forerunner of the modern plein-air school of impressionism.

Yet his own contemporaries who had followed his success with such admiration tired of the intense and insistent rhythm of his work. Neoclassicism, fatally declining into academic dogmatism and no longer understanding the elements of the imaginative world of baroque art, relegated Tiepolo's work to obscurity. Only toward the end of the 19th century did a keen interest in the art of the master arise after a few painters, including Delacroix, had recognized his virtuosity and, later, the impressionists had begun to admire his clarity and ethereal transparency. The reappraisal of Tiepolo's art coincided with the critical reexamination of the baroque, due in particular to Alois Riegl and Max Dvořák, which introduced into the field of art history the weight of a new historical and scientific objectivity in relation to this period and to its artistic expression.

The question remains whether Tiepolo was in fact a baroque artist. Although undoubtedly baroque at first, he later reached a level of such balance, measure, and rare luministic expression that he transcends this classification, just as he transcends the classification of "classical," since his was a personal and subjective classicism that escapes any precise definition. Because he was not neoclassical, it is understandable that the neoclassicists, the theorists, and the academic painters of the late 18th and the 19th century were unable to understand the art of the great Venetian. However, his revaluation, once begun, was rapid and decisive. The first noteworthy monograph on Tiepolo, written by F. H. Meissner, appeared in 1897; in 1898 came H. de Chennevières's, in 1902 H. Modern's, P. Molmenti's monumental work in 1909, and the well-documented volume by E. Sack in 1910 — these last two marking a great step forward in the study of Tiepolo. Studies of the artist have grown progressively more numerous, clarifying points such as the dating of the frescoes at Villa Valmarana and the various aspects of his earliest works and finally distinguishing between the works of Giovanni Battista and those of his son Giovanni Domenico.

GIOVANNI DOMENICO. Son and chief collaborator of Giovanni Battista, born Aug. 30, 1727, in Venice, where he died Mar. 3, 1804.

Although Giovanni Domenico profited much from his close association with his father, he was handicapped by the weight of the latter's fame. It is not in the works reflecting Giovanni Battista's style, however, that Giovanni Domenico displayed his special talent, which was directed toward genre painting in the form of small anecdotal or satirical paintings of everyday Venetian life, observed with a fresh and acute humor. Undoubtedly a precocious artist, at the age of twenty he was commissioned to paint the 14 Stations of the Cross (1747–49) for the Oratory of the Crucifix in the Church of S. Polo, Venice. For the same Oratory he executed two ceiling canvases and seven religious paintings, some of which are now lost. Despite the limitations of these beginnings, his pictorial idiom, while remaining faithful to his father's forms, is nevertheless punctuated here and there by a strongly personal tendency toward the episodic and picturesque, revealing a lively narrative vein.

In 1748 Giovanni Domenico was working on the fresco with St. Francis curing a possessed man, for the Church of S. Francesco di Paola, Venice, and the following year he was

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

summoned to fresco the chapel of Villa Duodo, Zianigo, with episodes from the life of S. Girolamo Emiliani (Miani). In this villa, later acquired by the Tiepolo family, he was on various occasions to express his artistic soul in the most genuine way, improvising a pictorial world of clowns, laughing punchinellos, and creatures springing from an imagination too long constrained. Also from this period is the *Consilium in Arena* (Udine, Mus. Civ.). The commission for this celebrative painting had been entrusted to Giovanni Battista in 1749 by Count Antonio de Montegnacco, but, judging from the style, it is probable that Giovanni Domenico, under his father's supervision, was responsible for its execution. The two canvases (New York, private coll.) depicting the Infanta of Spain at Parma, perhaps only slightly later in date, are undoubtedly by Giovanni Domenico (one of them bears his signature), although they, too, were commissioned from Giovanni Battista. Before the Tiepolos' trip to Würzburg, Giovanni Domenico painted for the parish church of Merlengo, near Treviso, the altarpiece depicting St. Oswald. Faithful hitherto to his father's formulas, his style here gives indications of those personal characteristics that were to take form in the following years, especially the pungent realism that constitutes the principal element of his artistic individuality.

During his stay at Würzburg (1750–53) Giovanni Domenico for the first time worked at his father's side on a decorative cycle of considerable importance; his collaboration is evident throughout the less important parts of the frescoes. Commissions were also given him independently, such as the overdoors for the Residenz, representing Justinian as lawgiver, St. Ambrose, and the emperors Theodosius and Constantine, all dating from 1751, which are overshadowed by his father's frescoes. In 1752 he painted four other overdoors for Von Greiffenclau for the castle of Veitshöchheim, two of which are perhaps the *Christ and the Magdalen* and the *Last Supper*, signed and dated in that year (Munich, Alte Pin.). During this period Giovanni Domenico also executed other religious paintings of Biblical subjects, among them *Christ and the Adulteress* (1751; New York, Harrison Williams Coll.), *Rebecca* (Paris, private coll.), another *Christ and the Adulteress* (1752) in a French private collection, *Christ Healing the Blind Man* (1752; Hartford, Wadsworth Atheneum), and the *Institution of the Eucharist* (1753; Copenhagen, Statens Mus. for Kunst). Giovanni Domenico's style, although technically more sinewy and animated, is so similar to his father's in these Veronese-like compositions that many canvases of this religious series were for a considerable time regarded as masterpieces of Giovanni Battista. Thus the canvas depicting the miracle of the pool at Bethesda (Philadelphia, Mus. of Art), the *Christ and the Adulteress* (Paris, private coll.), and two other canvases of these same subjects (private coll., bequeathed to Louvre subject to usufruct) were for a long time admired as among the most beautiful of Giovanni Battista's works. Also dating from the Würzburg period are the *Alexander and the Daughters of Darius* (Detroit, Inst. of Arts), to which *The Magnanimity of Scipio* (Frankfurt am Main, Städelsches Kunstinst.) is a companion piece.

Also to be included in the group of works of the German period are paintings such as the *Birth of the Virgin*, the *Presentation in the Temple*, and the two scenes with Abraham and Lot (Rome, Coll. L. Albertini) as well as the *Adoration of the Shepherds* and another *Presentation in the Temple* (Stockholm, Konsthistoriska Inst., Stockholms Univ.). Critics still attribute these sometimes to Giovanni Battista and sometimes to Giovanni Domenico. But they were undoubtedly executed by the latter during his stay at Würzburg, and they are testimonials to his narrative power, expressed in a spontaneous vein almost free of his father's influence. Such works as these, in fact, are the very ones that afford a fuller understanding of Giovanni Domenico's power, foretelling the artist who was to paint the frescoes at Villa Valmarana.

In fresco decorations, which patrons commissioned mostly to obtain "copies" of his father's celebrated creations, Giovanni Domenico imitated his father. Thus, on his return from Würzburg, he frescoed (1754–55), with the help of the perspectivist Mingozzi and making use of portions taken whole from his father's works, the presbytery and dome of SS. Faustino e Giovita, Brescia, with scenes from the lives of the two titular saints. (Some of the studies for these Brescian frescoes are by Giovanni Battista, which suggests that he may originally have been commissioned to do them.) Giovanni Domenico's style is freer in the frescoes of the presbytery, with those delicate and sensitive forms already developed in the moving engravings of the Flight into Egypt (PL. 64).

In 1756 Giovanni Domenico was elected, together with 36 other painters, to constitute the Accademia di Belle Arti of Venice. The following year he was again working with his father on another very important fresco cycle: that of Villa Valmarana, where he was able, however, to express his own bent for genre painting, since they were working in different rooms. The two carnival scenes in the "Foresteria" of the villa, signed by Giovanni Domenico, provide the key to the recognition of his work in the other rooms. He was responsible for the exotic scenes in the Sala Cinese, the Arcadian visions of the Sala delle Scene Campestri, the bizarre and slightly affected compositions of the Sala Gotica (PL. 66), the vivacious figures of the Stanza della Loggia, and the joyous putti in the medallions of the Sala dei Putti: altogether a lively figural world, depicted with inventiveness and ingenuity, far removed in character from the classical heroes that Giovanni Battista was idealizing in the same villa.

The proper attribution of such an important pictorial complex to Giovanni Domenico — on both stylistic and documentary grounds, especially on the correct reading of the date, previously interpreted as 1737 and therefore excluding his collaboration — raises the possibility of including in Giovanni Domenico's *œuvre* a controversial group of lively carnival pictures. For the *Minuet* (VI, PL. 76) and the *Charlatan* (Louvre) a reading of Giovanni Battista's initialed signature and a date of 1754 had been sustained, for the *Ballet* and the *Charlatan* (both, Barcelona, Mus. de Arte de Cataluña) a date of 1756. The dates (no longer visible) may be acceptable from a stylistic point of view; but the initials (if indeed they ever existed; they are no longer visible) may well have been altered with the intention of increasing the value of the paintings. In fact, if stylistic analysis is insufficient to establish their correspondence to the Valmarana frescoes definitively by Giovanni Domenico, further evidence is provided by comparison with the four well-known later canvases of this series: the *Charlatan*, the *Tooth Puller*, the *Triumph of Punchinello*, and the *Ballad Singer* (1765?; Rome, private coll.). The last-mentioned was engraved by Joseph Wagner in 1771 with Giovanni Domenico's name; the *New World* (Madrid, Balboa Coll.) was engraved in 1777 with the inscription "Jo. Dominicus Tiepolo pinx." It may be added that the delightful *Departure of the Gondola* (New York, Wrightsman Coll.) is signed in full, and *The Burchiello* (PL. 63), which provides a poetic glimpse of 18th-century Venice, is clearly signed with his initials. Among Giovanni Domenico's lively narrative paintings should also be mentioned the *Encampment of Gypsies* (Mainz, Altertumsmus.) and the *Minuet* (New York, Wrightsman Coll.).

In 1758 the artist painted the apse of the parish church of Meolo with monochrome frescoes (Baptism of Christ) similar in style to the eight monochrome frescoes painted on the walls of the Church of the Purità, Udine, the vault of which Giovanni Battista decorated with the Assumption. The frescoes at Udine constitute a turning point in Giovanni Domenico's stylistic development, insofar as he adopted certain almost neoclassical attitudes that were developed in his later works. Giovanni Domenico's collaboration in the monochrome decorations that formed part of his father's fresco cycles began as early as 1754, when he executed a large part of the monochromes of mythological subjects at Nervesa (Berlin, Staat. Mus.). The Metropolitan Museum of New York has a series of monochromes, partly by Giovanni Domenico, that supposedly come from a villa on the Brenta River frescoed by Giovanni Battista. Other instances of similar collaboration between the two artists are the six monochromes painted for Palazzo Porto (now Biego), Vicenza (Stockholm, Nationalmus.), and those for Palazzo Trento-Valmarana, Vicenza.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Giovanni Domenico's partnership with his father was intensified before their departure for Spain, in the decorations of Palazzo Canossa, Verona, and of Villa Pisani, Strà, where he assisted with the grisailles; these, designed almost as bas-reliefs, are neoclassical in conception, confirming this trend in the painter's style. (Related to these, although of a later date, are the two monochromes of Cicero and Demosthenes, executed by Giovanni Domenico for the Palazzo Ducale, Venice, in 1775.) The son must have worked with his father also in 1761 on the commissions for the Scuola di S. Giovanni Evangelista, Venice, the contract for which dates from September, 1760. However, Giovanni Domenico was solely responsible for the paintings of the Immaculate Conception and St. Michael the Archangel, as Giovanni Battista had to give up the commission for lack of time.

In April, 1762, Giovanni Domenico accompanied his father to Madrid, where he was active both as his assistant and independently. Among his most important commissions was the ceiling fresco for the Saleta of the Royal Palace, a celebration of the Glory of the Spanish Monarchy (XII, PL. 179), almost completely dependent on Giovanni Battista (who was concurrently painting the same subject on the ceiling of the Queen's Antechamber) for the composition but differing entirely in its use of chalky-gray tones. In Spain Giovanni Domenico was also commissioned to paint the Stations of the Cross for the Church of S. Felipe Neri, Madrid. The eight extant paintings, now at the Prado, reveal a rather engorged design, a certain pictorial flatness, and a decline in quality compared with his earlier works, repeating but not improving those concepts of frontality and overcrowding of the foreground typical of his early years. The last painting bears the date 1772, which indicates that Giovanni Domenico completed it after his return to Venice.

Giovanni Domenico's close association with his father during the sojourn in Spain enabled him to absorb his father's final stylistic legacy: those intimate expressions of deep feeling, the restless and jagged line, and the silvery atmosphere that characterize Giovanni Battista's last works. Their influence is evident in the small canvases with scenes from the life of Christ (various private collections) persistently attributed to Giovanni Battista but undoubtedly by Giovanni Domenico, which include genuine little masterpieces such as the *Christ Calming the Tempest* (Paris, Fodor Coll.). Giovanni Domenico also assisted his father in the ceiling paintings commissioned by the Russian court. The titles of the four canvases, executed in Spain, are known from the engravings made after them by Giovanni Domenico himself: *Mars with the Three Graces, The Chariot of Venus with the Graces, The Magnificence of the Princes,* and *The Triumph of Hercules.* The last, according to the inscription of the engraving, was entirely "invented" and painted by Giovanni Domenico, who also made a preparatory study in oils (Lugano, Thyssen-Bornemisza Coll.).

After his return to Italy in 1770 Giovanni Domenico's line became still more delicate and fragile, creating a "liquid" composition, as in *The Preaching of John the Baptist* (Treviso, Mus. Civ.) and *The Baptism of Christ* (Florence, Mus. Stibbert), in which the atmosphere becomes increasingly silvery, achieving an almost monochrome bluish tonality and making his paintings more and more like drawings. He was elected as a master to the Venetian Academy in 1772. In 1773 he executed the *Abraham and the Angels* (Venice, Acc.), and in 1777 the altarpiece of the Holy Family with St. Francesca Romana and St. Eurosia for the Church of S. Agnese, Padua. In 1778 the *Institution of the Eucharist* was listed as a diploma work by the painter at the Academy, of which he was named president in 1780, as his father had been before him.

Giovanni Domenico completed, in 1783–84, the decoration of the ceiling of the Church of S. Lio, Venice, with the *Glory of Pope Leo IX* (oil sketch, Vict. and Alb.). In August, 1782, he entered a competition for the painting of a fresco in the Sala del Gran Consiglio of the Palazzo Ducale, Genoa. His sketch (Met. Mus.) won third place, and in 1784 he was commissioned to execute the fresco. The work, later destroyed, representing the Apotheosis of Jacopo Giustiniani, was unveiled to the public on Nov. 14, 1785; it revealed anew that Giovanni Domenico, however different his work, was heir to his father's artistic glory, a fact that never failed to influence his patrons. In 1789 he was again in Venice and active at Palazzo Contarini dal Zaffo, where he frescoed an allegorical ceiling and lively decorations and monochromes. This is the last known official work by Giovanni Domenico, who led an increasingly retired life in his villa at Zianigo, which he decorated with frescoes variously dated between 1749 and 1793 but belonging, for the most part, to his last years; these frescoes depict scenes of Venetian life and groups of punchinellos, satyrs, and centaurs painted in an unconventional style.

Giovanni Domenico was prolific in the production of drawings, particularly in his last period. The subjects are varied: animal studies connected with the decorations at Zianigo, crowded groups of satyrs and fauns, religious themes, sketches for fresco compositions, and historical scenes, from an almost inexhaustible repertory. Special mention should be made of the fantastic drawings illustrating the life and death of Punchinello, which, with their frank and earthy allusions to the decadent manners of Venice at the turn of the century, form a curious chapter of his *Divertimenti.* Still more pungent are his satirical drawings, the corrosive documentation of a society in decline, comparable to the drawings of William Hogarth or Thomas Rowlandson: caricatures of sharp wit (to which Goya was certainly not indifferent) that recorded caustically the signs of political and moral corruption presaging the imminent close of an epoch.

Giovanni Domenico was also a noteworthy engraver from his earliest years, when he engraved (1749) the 14 Stations of the Cross that he had painted for the Church of S. Polo. On leaving Würzburg in 1753 he presented Greiffenclau with a series of etchings on the theme of the Flight into Egypt (PL. 64), which, besides constituting a novelty in the field of Italian engraving, are characterized by a precise and refined technique that is distinguished from that of Giovanni Battista by its more accentuated touch, interpreting the forms with a continuous undulating line and producing striking effects of light, space, and atmosphere. Giovanni Domenico also engraved, after the death of his father, the famous *Raccolta di Teste* from the "character heads" painted by Giovanni Battista and himself, forming two volumes of 30 etchings each, dedicated to Alvise Tiepolo. In 1775, a few years after the sojourn in Spain, the artist published, in a volume dedicated to Pope Pius VI, the *Catalogo di Varie Opere inventate dal Celebre pittore Gio. Batta Tiepolo,* engraved partly by his father, partly by himself, and partly by his brother Lorenzo. Thus many of Giovanni Battista's works were given new life and ideally brought together by the devotion of his son, who immortalized them in engravings.

The appreciation of Giovanni Domenico's true artistic personality, apart from that of his father, is the result of research in recent decades. At one time his works were confused with those of Giovanni Battista and believed to be distinguishable only by a difference in quality. Now, however, since the recognition (Morassi, 1941) of his works at Villa Valmarana, it is possible to discern in him an artistic sense and tendencies different from his father's, a spirit not courtly, classical, and aristocratic but, rather, familiar, preromantic, and already directed toward an enlightenment foreshadowing the 19th century. It is in fact Giovanni Domenico, perhaps more than his father, who anticipates certain aspects of Goya's art. Qualitatively, the son's works are often of the same caliber as those of his father, even though, regarded as a whole, Giovanni Domenico did not achieve the greatness of Giovanni Battista, without whose influence the works of Giovanni Domenico would be unthinkable.

LORENZO BALDISSERA. Son of Giovanni Battista and brother of Giovanni Domenico (b. Venice, Aug. 8, 1736; d. Madrid, August, 1776).

Little is known of Lorenzo; he was trained in the shadow of the fame of his father and brother. In November, 1750, he, too, traveled to Würzburg and remained there until 1753. His name appears in the register of the painters' guild in 1761, and a year later he was in Madrid, where he remained after

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the death of his father and the departure of his brother, living, it appears, in straitened circumstances. In 1768 and again in 1773 he applied without success for nomination to the post of *pintor de camera*; in 1774 he was tried for having demanded the refund of expenses, held to be nonexistent, for pastels executed for the royal family. In 1773 he was admitted as an honorary member by the Venetian Academy, more on account of his father's merits than his own.

His activity as a painter, even now not very clear, is chiefly based on comparisons with his only certain work, dated 1757 and signed "Lorenzo Tiepolo. filio": the portrait of a lady with a fan (Venice, Ca' Rezzonico), representing, according to some scholars, his mother, Maria Cecilia Guardi. It is a pastel executed with a certain refinement and indicates an acquaintance with the work of Rosalba Carriera. From the first, Lorenzo showed a predilection for pastels. In 1756, three years after leaving Würzburg, he sent a "piccola opera di pastello" to the prince-bishop, Adam Friedrich von Seinsheim; but it is probable that, during his stay in the capital of Franconia, he had already tried his hand in this field, since there is sufficient evidence to attribute to him two portraits, one of the sculptor Auwera and the other of Auwera's wife, Christine (Würzburg, Mainfränkisches Mus.), which may be considered among his first artistic efforts. On the basis of comparison with the Ca' Rezzonico pastel, the canvas of the Tiepolo family (London, Rosebery Coll.) has also been attributed to Lorenzo. It is delicate but incisive in style and probably dates from shortly before his departure for Spain, being left incomplete (a preparatory drawing for the figure of the pastellist is in a private collection in Milan). To this work may be related the pastel portrait of a man with a dog (formerly Milan, Coll. Crespi-Morbio) and two pastels (El Paso, Mus. of Art), one of a lady with a parrot and the other of a lady with a fur, both copied from compositions by his father and still sometimes attributed to him.

The Spanish environment must have exerted a decisive influence on the development of Lorenzo's art, which seems to have acquired a mannerist bent, probably from the example of Mengs and his followers. To this period may be assigned with certainty the pastel of the Virgin, St. Joseph, and the Christ Child holding a goldfinch (Barcelona, private coll.), iconographically derived from prototypes by Giovanni Battista, as well as the beautiful pastels (Prado) of a Levantine with turban and collar and of a bearded man wearing a shoulder sash, characterized by bold lines and strong shadows, reminiscent of his father's series of exotic heads. Similar is the group of twelve pastels of half-figures (Madrid, Royal Palace), in which Lorenzo depicts with remarkable expressive force realistic scenes of the life and customs of the Spanish people. All trace has been lost of 15 pastel portraits of the royal family and other pastels of religious subjects recorded in documents. Among other works attributed to Lorenzo, M. Goering (ThB) lists seven pastel scenes of daily life (Madrid, Condesa de Alcubierre Coll.) similar to those mentioned above. The theory, held even in recent studies, that Lorenzo frescoed a ceiling in the Royal Palace during his stay in Madrid stems from the statement made by J. A. Ceán Bermúdez (*Diccionario . . .*, v, Madrid, 1800) confusing Lorenzo with Giovanni Domenico in connection with the fresco of the *Triumph of the Spanish Monarchy* that the latter painted in the Saleta of the Royal Palace.

Noteworthy among Lorenzo's drawings are the two heads (one of a woman wearing a turban and the other of an old Oriental with a beard), both signed and certainly very early works, and the signed *Capriccio* showing a woman, a child, and a satyr beside an obelisk (all, Würzburg, Mus. der Univ.). Also by him is a group of heads mostly in charcoal, including the signed *Head of a Young Man* (New Haven, Yale Univ. Art Gall.), the *Head of an Old Woman* (New York, Janos Scholz Coll.), and several others in the Musei Civici, Pavia. Among the drawings attributed to him is a group in the Museum Boymans-Van Beuningen, Rotterdam. One of his best-known drawings is the portrait of Goldoni (PL. 64), engraved by Marco Pitteri for the 1761 edition of the *Comedies*, published by G. Pasquali. Pitteri also did an engraving of the portrait of the procurator Tommaso Querini drawn by Lorenzo (in 1760, according to P. Gradenigo) after a painting by Fortunato Pasquetti (1700–73?).

Nine of Lorenzo's engravings are known, all after works of his father; these were incorporated in the *Catalogo* published by Giovanni Domenico on his return from Spain in 1775. The technique of the youngest Tiepolo, although similar on the whole to that of his father and his brother, differs in its more emphatic, almost metallic line and in its more accentuated chiaroscuro, obtained by the use of a long, thick stroke, often cross-hatched.

Unlike Giovanni Domenico, whose artistic stature holds its own beside that of his father, Lorenzo remains, on the basis of present knowledge, a secondary and rather unimportant artist.

BIBLIOG. V. da Canal, Vita di Gregorio Lazzarini, Venice, 1732; A. M. Zanetti, Descrizione di tutte le pubbliche pitture di Venezia, Venice, 1733; P. A. Orlandi, Abecedario pittorico, Venice, 1753; A. Longhi, Compendio delle vite dei pittori veneziani storici più rinomati, Venice, 1762; F. Algarotti, Lettere sulla pittura, VIII, Venice, 1792; L. Lanzi, Storia pittorica della Italia, Bassano, 1795–96; G. A. Moschini, Della letteratura veneziana, III, Venice, 1806; P. Selvatico, Storia estetico-critica delle arti del disegno, Venice, 1852–56; P. Molmenti, Les fresques de Tiepolo dans la Villa Valmarana, Venice, 1880; P. Molmenti, Il Carpaccio e il Tiepolo, Turin, 1885; B. Berenson, Venetian Painters of the Renaissance, New York, London, 1894; P. Molmenti, Acque-forti dei Tiepolo, Venice, 1896; F. H. Meissner, Tiepolo, Leipzig, 1897; G. Molfese and A. Gentelli, Gli affreschi di G. B. Tiepolo, Turin, 1897; H. de Chennevières, Les Tiepolo, Paris, 1898; H. Modern, G. B. Tiepolo, eine Studie, Vienna, 1902; A. Baudi di Vesme, Le peintre graveur italien, Milan, 1906; P. Molmenti, G. B. Tiepolo, Milan, 1909; E. Sack, G. B. und D. Tiepolo, Hamburg, 1910; O. von Kutschera-Woborsky, Tiepolo und Rom, Kunstchronik, N.S., 1918–19, pp. 934–40; H. Voss, Über Tiepolos Jugendentwicklung, Kunst und Künstler, XX, 1922, pp. 423–33; G. Fogolari, Dipinti giovanili di G. B. Tiepolo, BArte, N.S., III, 1923, pp. 49–64; G. Fiocco, G. B. Tiepolo, Florence, 1924; U. Ojetti, L. Dami, and N. Tarchiani, La pittura italiana del seicento e del settecento, Milan, 1924; D. von Hadeln, Handzeichnungen von Tiepolo, 2 vols., Munich, Florence, 1927; G. Fiocco, La Pittura veneziana del Seicento e Settecento, Bologna, 1929 (Eng. trans., New York, 1929); J. Sánchez-Cantón, Bocetos y dibujos de Tiepolo, AEArte, V, 1929, pp. 137–43; G. Fogolari, Il bozzetto del Tiepolo per il trasporto della Santa Casa di Loreto, BArte, XXV, 1931, pp. 18–29; S. De Vito-Battaglia, Il bozzetto di Tiepolo per il soffitto della Sala delle Guardie di Madrid, Rome, 1931; L. Venturi, Pitture italiane in America, Milan, 1931 (Eng. trans., New York, 1933); A. Morassi, The Young Tiepolo, BM, LXIV, 1934, pp. 86–93; A. Morassi, More about the Young Tiepolo, BM, LXVII, 1935, pp. 143–49; W. Arslan, Studi sulla pittura del primo Settecento veneziano, CrArte, VI, 1935–36, pp. 238–50; L. Coletti, Zwei Entwürfe von Tiepolo, Pantheon, XVII, 1936, pp. 170–71; A. Morassi, An Unknown Early Work by G. B. Tiepolo, BM, LXX, 1937, p. 53; A. Morassi, Yet More about the Young Tiepolo, BM, LXXIII, 1938, pp. 140–42; M. Goering, ThB, s.v.; G. Fiocco, Pitture del Settecento italiano in Portogallo, Rome, 1940; H. W. Hegemann, G. B. Tiepolo, Berlin, 1940; A. Morassi, Domenico Tiepolo, Emporium, XLVII, 1941, pp. 264–82; A. Morassi, G. B. e D. Tiepolo alla Villa Valmarana, Le Arti, III, 1941, pp. 251–62; R. Pallucchini, Gli incisori veneti del Settecento, Venice, 1941 (cat.); G. Lorenzetti, La pittura italiana del Settecento, Novara, 1942; A. Morassi, Novità e precisazioni sul Tiepolo, Le Arti, IV, 1942, pp. 89–97, 259–67; G. Vigni, Disegni del Tiepolo, Padua, 1942; J. Fernandez, Tiepolo, Mengs and Don Raphael Ximeno y Planes, GBA, LXXXV, 1943, pp. 345–62; T. Hetzer, Die Fresken Tiepolos in der Würzburger Residenz, Frankfurt, 1943; R. Pallucchini, Gli affreschi di G. B. e G. D. Tiepolo alla Villa Valmarana, Bergamo, 1945; G. Lorenzetti, Le cahier de dessins des Tiepolo au Musée Correr de Venise, Venice, 1946; A. Morassi, Tiepolo e la Villa Valmarana, Zurich, 1948; A. Morassi, Tiepolo, 2d ed., Bergamo, 1950; N. Barbantini, Tiepolo, Arti e Costume, I, 1951, pp. 17–28; G. Delogu, Tiepolo, Bergamo, 1951; M. H. von Freeden, Tiepolo in Würzburg, Würzburg, 1951 (cat.); G. Lorenzetti, Tiepolo, Venice, 1951 (cat.); G. Mazzariol and T. Pignatti, Itinerario tiepolesco, Venice, 1951; T. Pignatti, Tiepolo, Milan, 1951; G. Vigni, Tiepolo, Florence, 1951; F. J. B. Watson, Eighteenth Century Venice, London, 1951 (cat.); J. Cailleux, Tiepolo et Guardi, Paris, 1952 (cat.); E. P. Richardson, Venice, 1700–1800, Detroit, 1952 (cat.); M. Pittaluga, Acquafortisti veneziani del Settecento, Florence, 1953; J. Sánchez-Cantón, J. B. Tiepolo en España, Madrid, 1953; A. Morassi, Tiepolo, His Life and Work, London, New York, 1955; G. Lorenzetti, Venezia e il suo estuario, 2d ed., Milan, 1956; C. Donzelli, Pittori veneti del Settecento, Florence, 1957; A. Morassi, The Discovery of a New Painting by Tiepolo, Connoisseur, CXLII, 1958, pp. 178–79; A. Morassi, Gianbattista Tiepolo's "Girl with a Lute" and the Clarification of Some Points in the Work of Domenico Tiepolo, AQ, XXI, 1958, pp. 177–86; M. Levey, Painting in XVIII Century Venice, London, 1959; A. Morassi, Giambattista Tiepolo, Painter of "Macchiette," BM, CI, 1959, pp. 227–34; C. Guglielmi Faldi, Tiepolo alla Scuola dei Carmini a Venezia, 1960; G. Knox, Catalogue of the Tiepolo Drawings in the Victoria and Albert Museum, London, 1960; R. Pallucchini, La pittura veneziana del Settecento, Venice, 1960; M. Precerutti-Garberi, Asterischi sull'attività di D. Tiepolo a Würzburg, Comm, 1960, 3–4, pp. 267–83; A. Morassi, A Complete Catalogue of the Paintings of G. B. Tiepolo, London, 1962; J. Byam Shaw, The Drawings of Domenico Tiepolo, Boston, London, 1962; M. P. Merriman, The Etchings of G. B. Tiepolo, New York, 1963 (thesis); T. Pignatti, Le acqueforti dei Tiepolo, Florence, 1965.

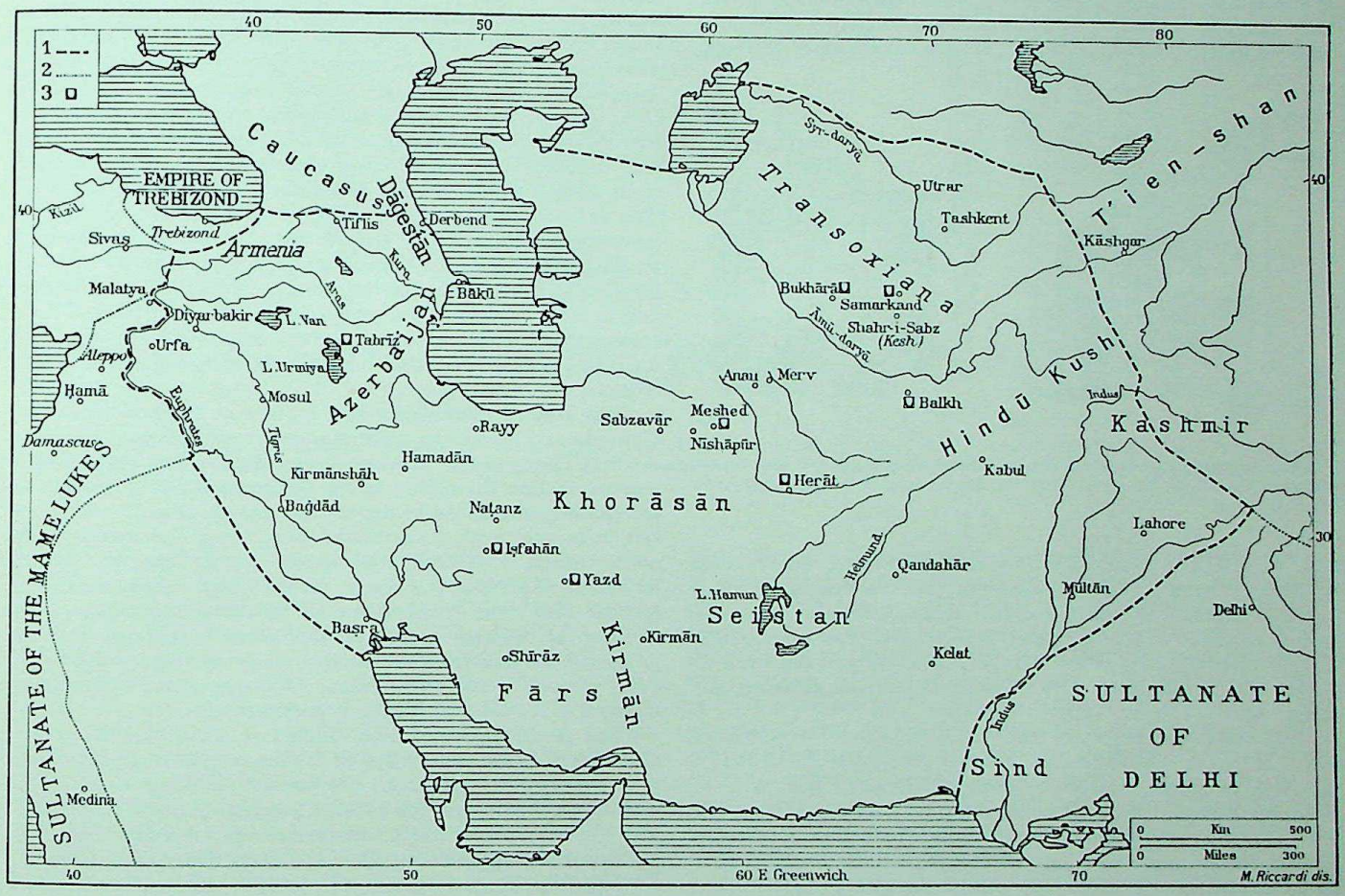
Antonio MORASSI

Illustrations: PLS. 55–66.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

TIMURID ART. By Timurid art is meant the art that flowered not only in Transoxiana and eastern Persia under Tīmūr Lenk — the celebrated Tamerlane (1335–1405) — and his descendants but also simultaneously in western Persia (see IRAN) under the Turkoman dynasties of the Qara Qoyūnlū and the Āq Qoyūnlū. The school of Herat, which marks the highest peak of this civilization (particularly in regard to painting), was to have a profound influence on the art of Moghul India (see ISLAM; MOGHUL SCHOOL).

SUMMARY. Historical background (col. 97). Architecture (col. 98). Painting (col. 101): *The style of Shiraz; The Turkoman style; The style of Herat.* Calligraphy and bookbinding (col. 104). Decorative arts (col. 105): *Ceramics; Metalwork; Wood carving and stonework; Carpets.*



The Timurid empire in the second half of the 14th century. *Key*: (1) Limit of Tīmūr Lenk's conquests; (2) borders of neighboring states; (3) places with important remains of Timurid structures.

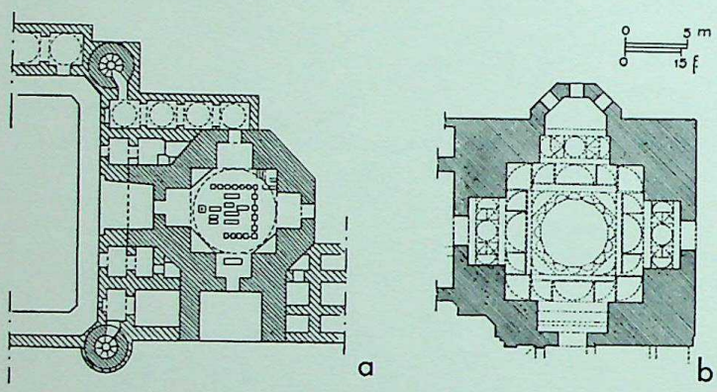
HISTORICAL BACKGROUND. After he had overrun and devastated Persia, southern Russia, northwestern India, Syria, Iraq, and Anatolia, Tīmūr Lenk set out on a great expedition against China, but died at Otrar (Utrar) in 1405 and was buried in splendor at Samarkand, the capital of his dominions. The real Timurid period begins in the reign of Shah Rukh, Tīmūr Lenk's son, who quickly succeeded in reuniting the greater part of the territories in Persia that had been divided on his father's death. Shah Rukh made his three sons viceroys of his empire: Ulugh-Beg in Central Asia (Samarkand), Bāysunghur Mīrzā in Khorasan (Herat), Sultan Ibrāhīm in Fars (Shiraz). After the death of Shah Rukh in 1447 Timurid power soon began to decline as a result of dynastic struggles and continual fighting with the Turkomans and the Uzbeks. This decline did not, however, prevent the arts from flourishing, especially at Samarkand and Herat. At the court of Sultan Ḥusayn Bāyqarā, who reigned at Herat from 1468 to 1506, were men like Mīr 'Alī Shīr Nawā'ī, considered the founder of eastern Turkic literature, the Persian poet Jāmī, the historians Mīrkhwānd and Khwāndamīr, and the greatest painters of the period — Bihzād, Shāh Muẓaffar, Qāsim 'Alī, Mīrak Naqqāsh, and 'Abd-ar-Razzāq, to name only the most important. Badī' al-Zamān, son of Ḥusayn Bāyqarā and last of the Timurid sultans of Herat, was defeated and dethroned by Shaybānī Khan the Uzbek in 1507. After finding refuge at the court of Shah Ismā'īl Ṣafavī at Tabriz, he fell into the hands of the Ottoman Turks and died in Istanbul in 1517.

With the Timurids began one of the most flourishing periods of Islamic civilization. Under their reign architecture achieved a splendor unprecedented both in its monumentality and in the richness of its decoration (see CERAMICS; ISLAM), while painting reached such a degree of perfection that it served as a model for all the subsequent schools of painting in Persia (see MINIATURES AND ILLUMINATION). This was also a time of great development and exquisite production in the decorative arts — textiles (see TEXTILES, EMBROIDERY, AND LACE), in particular carpets (see TAPESTRY AND CARPETS); ceramics (q.v.); jewelry (see GOLD- AND SILVERWORK); metalwork; woodwork; and carved stonework. The origin of Moghul art in India can also be traced to the Timurids, as Bābur, first Moghul emperor, was a lineal descendant of Tīmūr Lenk.

ARCHITECTURE. Timurid architecture owes much to that of the preceding period, particularly that of Mongol Persia (see ILKHAN ART): in fact many architects and craftsmen who worked on the construction and decoration of the buildings erected by Tīmūr Lenk and Shah Rukh in Central Asia had been brought from Persia. A large part of this architecture has disappeared, but the buildings that remain and the descriptions of contemporaneous historians and travelers make it possible to form a fairly exact picture of it.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

The oldest monuments are in Central Asia, and of these the most important group, which reveals all the possibilities of Timurid architecture and simultaneously its links with the past, comprises the tombs in the Shāh-i-Zind ("living king") necropolis at Samarkand (PLS. 69, 70). This necropolis, built around the tomb (1334/1335) of Qāsim ibn-'Abbās, who was revered as the "living king," consists of 16 buildings, the last of which was erected in 1405. In 1434 Ulugh-Beg added a monumental gate. Samarkand preserves other important buildings of the early Timurid period: the Ishrat Khan, erected by Tīmūr Lenk in 1395; the Bībī Khānum Madrasah (named after one of Tīmūr's wives), 1398–1405; the Gūr-i-Mīr (Mausoleum of Tīmūr Lenk and his family; PL. 68; FIG. 99), completed in 1405, with the addition, in 1434, of a portal designed by Muḥammad al-Iṣfahānī, who according to Mayer (1956) was the architect of the whole mausoleum; and the great Madrasah of Ulugh-Beg, 1417–20 (PL. 68). In Bukhara there remain the Mausoleum of Bayān Kūlī Khan (1357/1358) and the Kalyān Mosque,



Timurid funerary structures. (*a*) Samarkand, Gūr-i-Mīr, plan of the original tomb (*from SPA, II, fig. 410*); (*b*) Herat, Mausoleum of Gauhar Shād, plan (*ibid., fig. 407*).

rebuilt by Tīmūr Lenk; in the town of Turkestan, the Mosque of Aḥmad Yasavī, built in 1394/1395 to the design of Ḥājjī Ḥusayn Shīrāzī; at Kesh (mod. Shahr-i-Sabz), the monumental entrance of the Aq Saray, a palace that had been building for twenty years when Clavijo visited it in 1404; and at Anau, the Mosque of Abū'l-Qāsim Bābur ibn-Bāysunghur, dating from 1445.

Important buildings are also to be found in Afghanistan (q.v.): at Balkh, the Shrine of Khwāja Abū-Naṣr Pārsā (VIII, PL. 163); at Herat, the Mausoleum of Gauhar Shād, wife of Shah Rukh (FIG. 99), built about 1430 as part of the Muṣallā (FIG. 101) that was constructed for her (1417–37) by Qavām ad-Dīn Shīrāzī and pulled down in 1885 except for the minarets; also at Herat, the Sanctuary of Khwāja 'Abdullāh Anṣārī, restored and embellished by Shah Rukh in 1428; at Mazar-i-Sharif, the sanctuary called Ḥażrat 'Alī, rebuilt in 1481 by Ḥusayn Bāyqarā around the tomb of 'Alī, the fourth caliph. In Persia (see IRAN) very little has remained of Timurid architecture. The Masjid-i-Jāmi' in Yezd (Yazd) has a mihrab dated 1375; the building was decorated with faïence mosaics, the work on which continued until the middle of the 15th century, the decoration of the southern liwan dating from 1442. It is probably the best preserved of the early Timurid buildings, although the decoration of the entrance has been largely reconstructed. The most important Timurid building in Persia is without doubt the Mosque of Gauhar Shād at Meshed (Mashhad; FIG. 101), erected in 1418 close by the sanctuary of Imam 'Alī al-Riżā.

The most notable achievements of the period were the Muṣallā (which included the Madrasah and the Mausoleum) of Gauhar Shād at Herat and the Blue Mosque (Masjid-i-Kabūd; PL. 67, FIG. 101) at Tabriz, built in 1465 by Jahan Shāh, ruler of the Qara Qoyūnlū Turkomans; there is no proof that the architect of the Masjid-i-Shāh at Meshed was also responsible for this building.

From the structural point of view, few innovations were made during the Timurid period. The mosques were constructed on the old Seljuk plan (see SELJUK ART): a rectangular *ṣaḥn* (court) with four liwans, a domed hall behind the principal liwan (on the side of the *qibla*), and minarets at the portal, at the principal liwan, and sometimes at the four corners of the building. This was the plan of the great Mosque of Tīmūr Lenk at Samarkand — known only from the descriptions of contemporaneous authors such as Sharaf ad-Dīn 'Alī Yazdī — and also of the Kalyān Mosque at Bukhara and of Gauhar Shād's at Meshed, of the Bībī Khānum Madrasah at Samarkand, and of the Muṣallā at Herat; probably the Masjid-i-Jāmi' at Yezd had the same plan. A similar design was adopted for madrasahs such as the one at Kharjird.

Toward the end of the 14th century and in the first half of the 15th, mosques built on a central plan became increasingly popular; they lacked a *ṣaḥn* but were provided with a monumental entrance and a high but shallow liwan, flanked by massive minarets and leading directly into the domed hall. The mausoleum-mosques of Samarkand (Madrasah of Ulugh-Beg), Turkestan (Aḥmad Yasavī), Kesh (Ulugh-Beg), and Anau (Abu'l-Qāsim Bābur) were constructed on the same plan. The Blue Mosque in Tabriz has a similar plan, although its Byzantine characteristics make it an almost unique building, with eight domed rooms around the central hall (PL. 67, FIG. 101). The entrance and reception halls in Tīmūr Lenk's palaces at Samarkand (Ishrat Khan) and Kesh (Aq Saray) were also built on the same principle: a huge liwan, flanked by massive minarets (in the Aq Saray still standing to a height of 140 ft.), opened into a hall covered by a monumental dome. Besides these rooms, there were adjacent chambers and vast courtyards with fountains and with rooms around them for the sovereign's retinue.

The type of mausoleum that evolved at Samarkand follows a simple and unvarying plan: a square room covered by a low dome. The passage area is bordered by large niches with pointed arches: the niches in the center of the wall descend to the ground, and those in the corners are decorated with elaborate stalactite work (*muqarnas*). Seen from the exterior, the dome, which is pointed, rises above a high drum and bulges beyond it. This bulbous dome, often ribbed — fully developed for the first time in the dome of the inner sanctuary of the Mosque of Aḥmad Yasavī at Turkestan (1394/1395) — even though it derives from an ancient tradition, represents something new in Persia and Central Asia and is one of the most distinctive features of Timurid architecture.

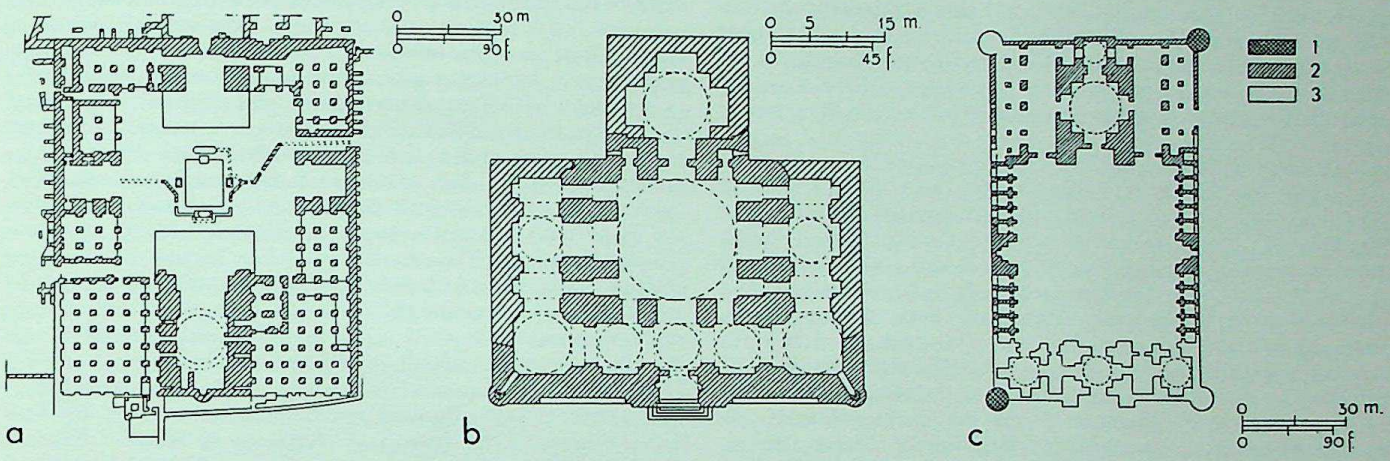
The most important contribution of Timurid architecture, however, is in the decoration of buildings. Although it belongs to a pre-Timurid tradition, the decorative element in Islamic architecture had never gained such prominence as at this period. For the first time huge surfaces were decorated with facings of carved and glazed tilework (used particularly in the Shāh-i-Zind necropolis in the late 14th century). Flat surfaces, round and angular columns, niches, arcades, stalactite work, and interiors of domes were faced with a decoration of elaborate, deeply cut arabesques; these usually formed motifs repeated countless times, but sometimes also central designs within polylobate or arched cartouches. The glaze was turquoise or deep blue, with white for the inscriptions. Polychrome tiles, too, were used for abstract geometric ornamentation, and blue-and-white tiles for the ornamental motifs inspired by Kufic script; examples are to be found in the Bībī Khānum Madrasah, the Aq Saray, the Gūr-i-Mīr, and the Madrasah of Ulugh-Beg, to name only the most important. Sometimes ceramic panels in relief were employed with multicolored glazing and floral and figural designs of Far Eastern provenance (e.g., phoenixes with ribbon-shaped clouds, lotus flowers, and peonies).

The most elaborate carved and glazed tilework appears in the Mausoleum of Bayān Kūlī Khan at Bukhara (1357/1358) — fragments of the decoration of this building are to be found today in Hamburg (Mus. f. K. u. Gewerbe) and in London (Vict. and Alb.) — and in the Mausoleum of Chujuk Biqa, Tīmūr Lenk's sister (PL. 69), erected in 1371 in the Shāh-i-Zind necropolis and inscribed with the names of the master craftsmen Shams ad-Dīn and 'Izz ad-Dīn. The most extraordinary build-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ing in this respect is the first tomb of the anonymous group, erected about 1380 in the same necropolis. Monumental in its simple square shape, it is decorated in relief on the façade with elaborate ribbon-shaped designs of glazed tile, which to the right and left of the entrance liwan form star-shaped, polygonal, and cross-shaped panels ornamented with Kufic lettering. The inside walls of this liwan are decorated with patterns of unplastered brick, panels of carved tilework, and floral and geometric reliefs of great beauty. The whole interior of the building is covered with tilework in geometric designs. The interlaced motifs, found in other buildings as well, are repeated on the interior of the dome.

The first building in which a different technique is used is the Mausoleum of Shīrīn Biqa Āqā (1385; PL. 69), where the whole façade is covered with delicate motifs in a floral and geometric pattern made out of tesserae of glazed earthenware set by a mosaic technique. The exterior of the drum is decorated in the same way, while the cupola is faced with patterned brickwork in contrasting shades. The interior of the building, unique of its kind, is adorned with paintings that are comparable only with the frescoes of trees and ornamental designs in the Bībī Khānum Madrasah. The introduction of faïence mosaic ("tile mosaic") — employed at about the same time in the Masjid-i-Jāmi' of Yezd — transformed the whole appearance of Timurid architecture and, together with the use of patterned brickwork, became the most characteristic feature of architectural decoration in the 15th century. Large inscriptions often dominated the decoration of the façades. Floral motifs and arabesques in faïence mosaic were employed to cover broad surfaces of the palace of Aq Saray. The delicacy of execution displayed in this and other buildings of the period is paralleled, in the 15th century, only in the work of the artists who were engaged on the Muṣallā of Gauhar Shād at Herat and on the Blue Mosque at Tabriz. The Shrine of Khwāja Abū-Naṣr Pārsā at Balkh, of the late 15th century, is one of the few buildings that approaches these in richness and elegance.



Plans of Timurid mosques. (*a*) Meshed, Mosque of Gauhar Shād (*from A. Godard, L'art de l'Iran, Paris, 1962 fig. 244*); (*b*) Tabriz, Blue Mosque (*from SPA, II, fig. 405*); (*c*) Herat, Muṣallā of Gauhar Shād. *Key*: (1) surviving walls, (2) restoration (after a sketch by Durand), (3) imaginary reconstruction (*ibid., fig. 404*).

PAINTING. The innovations of Timurid painting had precedents in the miniatures executed at Shiraz, Tabriz, and Baghdad in the late 14th century, under the rule of the Muẓaffarids and the Jalā'īrids. The new style appears for the first time in a *Shāh-nāma* ("Book of Kings") of Firdausī, written and illustrated in Shiraz in 1370 (Istanbul, Topkapı Saray Lib., Ms. 1423). It is not clear whether this new style was developed at Shiraz or in the more advanced court schools of Tabriz (X, PL. 255) or Baghdad, since it was actually in this last city that the most beautiful manuscript of the new style was produced, a copy of a *dīwān* of Khwājū Kirmānī, dated 1396 (Br. Mus., Add. Ms. 18113) and illustrated with nine miniatures by the painter Junayd Naqqāsh, a pupil of Shams ad-Dīn, who was in turn a disciple of Aḥmad Mūsā. Although no manuscript of the period has been preserved that can safely be attributed to Tabriz, it seems highly probable that the new manner derives from the late Ilkhan style as it is represented in the miniatures of the great *Shāh-nāma* known as the Demotte (VII, PL. 401; X, PL. 88). The attempts to relate the new style to the figure of Aḥmad Mūsā, whom Dūst Muḥammad, writing in 1544, called the inventor "of the new style" or "of the style of painting which is in favor at this period," have hitherto found no grounds for confirmation, as there is no work that can be attributed to this master with certainty.

The most notable feature of the new Timurid style (although derived from the preceding period) is a new conception of space. In miniature painting the horizon is placed high so that different planes are formed in which are arranged, almost in perspective, objects, figures, trees, flowers, and architectural motifs. This enables the artist to paint larger groups with greater variety and spacing and without overcrowding. While the painters of Shiraz for the most part accepted the limitations imposed by the border of the miniature, Junayd Naqqāsh, at least in some of his works, broke away completely. His painting in fact covers the entire surface of the page with a superbly designed landscape that unfolds from the nearest plane (at the bottom of the page) to the horizon (at the top of it). In the center, on the ground, stand the various figures. This type of painting thus reflects a bird's-eye perspective, in contrast to the earlier frontal view.

Of Timurid easel painting nothing remains, and of mural painting almost nothing, although contemporary sources amply document its existence. Aḥmad ibn-'Arabshāh describes in considerable detail the frescoes that decorated the palace of Tīmūr Lenk at Samarkand, in which the great conqueror was shown with his court in the garden or in the palace, in victorious battle with his enemies, giving audience to nobles of his court or to foreign ambassadors, with members of his family or with his harem. The same Aḥmad ibn-'Arabshāh and Sharaf ad-Dīn also mention frescoes in other palaces and pavilions of Tīmūr Lenk and of nobles of his court. Stchoukine (1954) maintains that these paintings, both in subject matter and in style, had close links with miniatures of the period, chiefly on the ground that Tīmūr Lenk brought to Samarkand the foremost artists from the cities he had conquered, especially Tabriz, Isfahan, Shiraz, and Baghdad. However, the very fragmentary remains of the purely decorative frescoes in the Mausoleum of Shīrīn Biqa Āqā (in the Shāh-i-Zind necropolis) and in the Bībī Khānum Madrasah, with their very free design, must not be forgotten. With these may be compared the landscape paintings in a Persian anthology made probably at Shiraz in 1398 and now in Istanbul (Mus. of Turkish and Islamic Arts, Ms. 1561).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

In the early phase of Timurid painting, from about 1390 to 1420, the style throughout the empire was more or less uniform. The most beautiful work of this early phase is the anthology made for Sultan Iskandar ibn-'Umar Shaykh ibn-Tīmūr in 1410, probably at Shiraz (Lisbon, Gulbenkian Foundation). Although they continue the tradition of the late 14th century, as represented in the two volumes of a collection of epic poetry, written at Shiraz in 1397 and now preserved in London (Br. Mus., Or. 2780) and in Dublin (Chester Beatty Lib., P. 114), the miniatures in the Gulbenkian anthology show the early Timurid style at its best. The brilliant colors, calligraphic precision of drawing, perfect harmony of composition, and inventive wealth of detail create an effect of magnificence that has all the qualities of the later style of the school of Herat. Another anthology made for Sultan Iskandar is also preserved in the British Museum (PL. 71). Of about the same date is Niẓāmī's *Khamsa* ("Five Poems"), formerly in the Louis Cartier Collection, Paris (X, PL. 91). With the viceroyalties of Sultan Ibrāhīm at Shiraz (from 1414) and Bāysunghur Mīrzā at Herat, a distinctive style developed in each of these cities.

The style of Shiraz. Under the patronage of Sultan Ibrāhīm (1414–35), the school of Shiraz, basing itself upon the early Timurid style, created a highly stylized manner of painting in which bright and vigorous colors predominated. The compositions were simple and contained few figures, well drawn and rather affected, with features lacking in expressiveness. The mouth was small, the nose narrow, the eyes almond-shaped, the head oval and elongated; the men often had mustaches and pointed beards. The best examples of this style, which continued after the death of the prince into the second half of the century, when it was assimilated into the Turkoman style, are an anthology of 1420 made for Bāysunghur Mīrzā (Berlin, Mus. in Dahlem, Islamische Abteilung, J. 4628), illustrated with 32 miniatures; a *Shāh-nāma* made for Sultan Ibrāhīm, probably in 1425, with 47 miniatures (Oxford, Bodleian Lib., Ous. Add. 176); and the copy of the *Ẓafar-nāma* ("Book of Victories") of Sharaf ad-Dīn, dated 1436 (New York, Kevorkian Foundation; Met. Mus., Ms. 55.121.17; Cambridge, Mass., Fogg Art Mus.; Worcester, Mass., Art Mus.; etc.).

The Turkoman style. Although various local traditions (from Herat and Mazanderan) came together in the Turkoman style, it derived chiefly from the painting of Shiraz. Indeed, this city seems to have been the center of the school, although the oldest manuscript in the Turkoman style, a *Khamsa* of Niẓāmī (Princeton, Univ. Lib.), was made at Abarquh and bears the date 1446. However, seven manuscripts have survived dated between 1482 and 1513, which, judging from the colophons, were made at Shiraz and which contain paintings in the Turkoman style. Characteristic of this style are the rich, dramatic colors; the elaborate design, which makes all the elements in the painting become parts of an almost decorative scheme; the imposing figures with thick bodies, large heads, and vehement gestures; and the backgrounds of exuberant vegetation in different shades of yellow and green. The most important works of the school are the 155 miniatures of the *Khāvarān-nāma* of Ibn-Ḥusām (PL. 312), which is dated about 1480 (Teheran, Decorative Arts Mus.; Met. Mus., Ms. 55.125.1; Bridgeport, Conn., Olsen Foundation; Cambridge, Mass., Fogg Art Mus.; Dublin, Chester Beatty Lib.; and private collections); some of them are dated 1477 and signed by the painter Farhād — the first painter's signature to have survived after that of Junayd Naqqāsh of Baghdad. The Turkoman style extended into the early Safavid period (see SAFAVID ART) but seems to have faded out toward the middle of the 16th century.

The style of Herat. The first products of the court school of Shah Rukh were under the direct influence of the early Timurid style, but since Herat is at some distance from the old art centers, these works are archaic, derived from pre-Timurid, especially Ilkhan, models (see ILKHAN ART). The drawing of the figures is often clumsy and the compositions are primitive. The new convention of the high horizon with the arrangement of figures and objects in a landscape or in architectural perspective was still not fully developed. The colors are soft and harmonious, but they lack the brilliance of either the early Timurid or the Shiraz style. This initial phase of Herat painting, which continued until about 1425, is exemplified particularly in the series of monumental editions of the *Jāmi' at-Tavārīkh* of Rashīd ad-Dīn made in about 1410–25 (Paris, Bib. Nat., Sup. pers. 1113) and of the *Majma' at-Tavārīkh* of Ḥāfiẓ-i Abrū (Istanbul, Topkapı Saray Lib., H. 1653) and in manuscript pages of codices dispersed in various collections.

The early style of Herat properly so called, which developed independently in the atelier of Bāysunghur Mīrzā, where the young prince had assembled the greatest artists of the time, is basically nothing but a more perfect form of the early Timurid style that had flourished at the beginning of the century. It is distinguished by sumptuous colors, an almost incredible precision of detail, perfect unity of composition, striking individual characterization of the human figures, and the utmost sensibility in conveying atmosphere, from the hieratic and solemn to the gaiety and playfulness of narrative — almost genre — painting.

The most beautiful of the eight manuscripts completed before the death of the prince (1433) is the *Shāh-nāma* of 1430 (Teheran, Imperial Lib., Gulistan Palace) with a double frontispice (IX, PL. 8) and 20 (mostly full-page) miniatures. To the same year belongs a superb manuscript of the *Kalīla u Dimna* (Istanbul, Topkapı Saray Lib., R. 1022) illustrated with 25 miniatures. In both these manuscripts the magnificence and large proportions of the miniatures may be noted. Among smaller manuscripts, with extremely delicate, exquisitely designed illustrations, are: the *Gulistān* ("Rose Garden") of Sa'dī of 1426/1427 (Dublin, Chester Beatty Lib., P. 115); an anthology of the same year (Settignano, near Florence, Berenson Foundation); a copy of the *Humāy u Humāyūn* of Khwājū Kirmānī dated 1427, with three illustrations (Vienna, Nationalbibliothek, Kod. F. 382); and a *Haft Paykar* ("Seven Beauties") of Niẓāmī from about 1430 (Met. Mus., Ms. 13.228.13).

Only nine manuscripts can be attributed to Herat in the period between 1433 and 1480. Of these the most important are the version in Uigur of the *Mi'rāj-nāma* of Mīr Ḥaydar dated 1436 (Paris, Bib. Nat., Sup. turc 190, with 63 illustrations) and the *Shāh-nāma* of 1440 (London, Royal Asiatic Soc., Pers. Ms. 239, with 32 miniatures); the latter derives directly from the *Shāh-nāma* in the library of the Gulistan Palace but is even more sumptuous in coloring and more elaborate in composition.

Of particular importance are the six illustrations of the *Khamsa* of Jamālī, painted in Baghdad in 1465 (PL. 72), which anticipate in an astonishing manner the work of Bihzād and his school. Bihzād (q.v.), the most famous painter of the period, was certainly active from 1480 to 1530 (in some opinions until 1535/1536); his style is shown above all in the miniatures, which are undoubtedly by him, in the manuscript of the *Būstān* ("Orchard") of Sa'dī (X, PL. 91) painted for Ḥusayn Bayqarā in the month of Rajab, A.H. 893 (June, 1488).

The Timurid school of Herat continued at Bukhara, where the Uzbeks brought many painters after they had overrun Herat in 1507 and at several other times in the first half of the century; it also continued at Tabriz, where Shah Ismā'īl Ṣafavī sent other Herat painters after 1510 and where he brought Bihzād in 1522 to direct the Imperial Library (*kitāb-khāna*).

CALLIGRAPHY AND BOOKBINDING. As in other periods of Islamic art, painting was only one of the aspects of art in the production of books; calligraphy, the illumination of frontispieces, of the chapter headings, and of colophon pages, and the binding of manuscripts were all executed with extreme care and exquisite taste. Calligraphy (q.v.) was always considered one of the highest forms of art in Islam and was practiced not only by professional calligraphers, many of whose names are known, but also by Timurid princes and nobles themselves. Writing, particularly as regards the Koran, was, at least up to a certain point, an act of piety, and the various forms of calligraphy had a direct relation to the speculations of the Sufis.

One of the most important calligraphers of the late 14th cen-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tury was Mīr 'Alī of Tabriz, known as "Qiblet-ul-kuttāb" ("model of calligraphers"), to whom is attributed the invention of nastaliq, a new script based on an ingenious fusion of Naskhi and taliq. 'Abd-Allāh, his son and disciple, perfected it and produced a special type of calligraphy in which letters of various colors were cut out and mounted on paper of contrasting color. A product of the same school, Maulānā Ja'far of Tabriz became the chief of the 40 calligraphers who worked for Prince Bāysunghur (ca. 1430); for this reason he is also known as Ja'far Bāysunghurī.

The Timurid style of calligraphy, as developed at Herat, was spread throughout the empire by another Mīr 'Alī (d. 1425), whose teacher, Maulānā Aẓhar of Tabriz, was known as "Ustād-i ustādān" ("master of masters"). Mīr 'Alī's greatest pupil was Sulṭān 'Alī ibn-Muḥammad of Meshed (d. 1513), who worked for Sultan Ḥusayn Bāyqarā in Herat and copied most of the important manuscripts of the period.

The arts of calligraphy, illumination, and painting were often practiced by the same artist. Mīrak Naqqāsh, for example, began as a calligrapher, went on to illuminate manuscripts, and finally became one of the greatest painters of the court school of Herat. At the end of the 14th century it became fashionable to illuminate manuscripts with naturalistic designs of great delicacy and extraordinary precision of detail. There is an exceptional example of this type of illumination in the pages of the Persian anthology (see above, *Painting*) written by Muḥammad al-Ḥalvā'ī al-Jalālī al-Iskandarī and Nāṣir al-Kātib in Fars in 1410/1411 for Sultan Iskandar ibn-'Umar Shaykh, in which various ornamental motifs, including cartouches with Chinese groupings of animals, are drawn in gold across the whole page.

"The 15th century was the golden age of the art of binding in Persia" (Aga-Oglu, 1935). Whereas in the preceding period the covers of books were decorated with simple, often geometric, designs stamped on leather, at this time the art of binding, especially in the atelier of Prince Bāysunghur, was distinguished by an astonishing richness in techniques and in the use of decorative motifs. Dūst Muḥammad states that Bāysunghur brought a bookbinder from Tabriz, called Ustād Qivām ad-Dīn, to whom is attributed the invention of the *munabbat kārī* (a design cut in filigree). Indeed, it is chiefly in the bindings of Herat that these decorative features appear. The most intricate example of such filigree is undoubtedly the inside of the cover of a volume of poetry by Qāsim, transcribed in 1459 at Shiraz (Istanbul, Mus. of Turkish and Islamic Arts, Ms. 1551); this was almost certainly done at Herat, as can be seen by comparing it with the binding of a manuscript with a text by Mīr 'Alī Shīr Nawā'ī in the library of Istanbul University (Ms. 2782/32). On these same bindings, decorations in relief were also used, especially on the outside; these are often small, like the filigree motifs, but equally often represent fantastic Chinese animals. In the binding of a volume of Jalāl ad-Dīn Rūmī, done for Sultan Ḥusayn Bāyqarā at Herat in 1483 (Istanbul, Mus. of Turkish and Islamic Arts, Ms. 1537), three techniques are combined: embossed reliefs, filigree work, and painting on leather (see LACQUER).

DECORATIVE ARTS. *Ceramics.* Very little is preserved of the undoubtedly large output of ceramics. Chinese blue-and-white porcelain, introduced into Persia in the second half of the 14th century and depicted for the first time in the manuscript of Khwājū Kirmānī in 1396 (see above, *Painting*), started a new fashion that dominated the production of ceramics throughout the 15th century. The decorative designs of Persian blue-and-white ceramics are entirely Chinese (see CERAMICS). Against the white background of this heavy ware, which consists mainly of bowls and large plates with wide rims, are shown, in various shades of cobalt blue, lotus flowers, peonies, ribbon-shaped clouds, crags, dragons, phoenixes, deer, and ducks on stylized waves. In the same period smaller and more delicate bowls were being produced, with less elaborate decoration. This style was to continue into the 16th century, when bolder motifs were developed with landscapes and large figures of animals.

In the early Timurid period no center of ceramic production is known; however, it is certain that the Timurid capitals — Meshed and Herat in Khorasan, Bukhara and Samarkand in Central Asia — possessed large factories where not only the magnificent tiles that decorate the buildings of the period were produced but also pottery. At Herat the name of a master craftsman is known, Maulānā Ḥājjī Muḥammad Naqqāsh, who died in 1507. A fragment of a spittoon, now in Edinburgh (Royal Scottish Mus.), bears the inscription "completed in Meshed of Imam Riẓā for Maulānā Hishām ad-Dīn of Shiraz 848" (A.D. 1444); this shows not only that the products of this city were famous enough to receive commissions from southern Persia but also that pottery of this kind was not made at Shiraz and perhaps not at Tabriz either.

At the same time imitations of celadon, already popular in the 14th century, continued in fashion. In the second half of the 15th century a new type of ceramics emerged, of which four dated pieces survive. The large plates and bowls are decorated, underneath a pale turquoise glaze, with black panels that radiate from the center. On these, spiral motifs are incised, while in the interstices can be seen floral patterns of Chinese origin; at the edges, or sometimes in the center, there are inscriptions. The pottery is made of soft, loose, porous clay with a thin, unequal, often shiny glaze that is sometimes spoiled by wide cracks, through which dirt and grease attack the vase itself, destroying its color and glazing. These vases belong to a variety fully developed only in the 16th and 17th centuries and known under the name of Kubachi, after the small city of the same name in Dagestan, where many pieces were discovered in the 19th century. The factory in which this ware was produced may have been at Tabriz, although there has so far been no definite proof of this.

Metalwork. Metalwork, the production of which flourished in the 14th century, seems to have undergone a period of decadence, as regards both quality and quantity. In general, pre-Timurid forms persist (candelabra, cups, caskets), but although the technique of incrustation did not change greatly, it became coarser. Few surviving pieces can be dated exactly. The products of the late 14th century rarely reveal new shapes or basically new ideas in the working of the metal. Among the most important pieces are a candelabrum with the name and titles of Tīmūr Lenk and the signature of the artist 'Izz ad-Dīn ibn-Tāj ad-Dīn of Isfahan, which is dated Ramadan, A.H. 799 (May, 1397; Leningrad, The Hermitage); a large bronze caldron (*siqāya*), also bearing Tīmūr Lenk's name, made by 'Abd-al-'Azīz ibn-Sharaf ad-Dīn of Tabriz, with the date Shawwal 20, A.H. 801 (June 25, 1399), now in the Mosque of Aḥmad Yasavī at Turkestan; a candelabrum in the same mosque, very similar to that in The Hermitage, signed by the same artist and dated 1397; and lastly another caldron, now in the Masjid-i-Jāmi' of Herat. Parts of other candelabra of this kind are also preserved, one of which is in the Louvre and another in The Hermitage, both inscribed with Tīmūr Lenk's name. These pieces admirably represent the taste of the early Timurid period; they are large and heavy, and the shape is simple, powerful, tectonic. The candelabra rest on large circular bases; the stems are short, thick, and elaborately worked; the sockets are heavy, large, and extremely simple in shape. The decoration consists solely of large-scale engravings and silver and gold incrustations in small areas. The Herat caldron is an exception, with its elegantly designed arabesque in relief. Particularly remarkable is the complete absence of figural representations. Such a style appears to have been in vogue throughout the 15th century.

Another typical variety of Timurid metalwork is seen in the openwork plaques used to decorate doors (for example, in the Mosque of Aḥmad Yasavī at Turkestan), wooden chests, and other pieces of furniture. These consist almost entirely of stylized floral motifs that sometimes form a lacework of metal. At the same time, conventional forms continued to be produced, such as the bell-shaped candelabra similar to those of the 13th and 14th centuries; a candelabrum of Abū-al-Naṣr Ḥasan Sulṭān Beg Bahādur (New York, Parish-Watson Coll.) is a typical example of the blending of traditional with new Timurid forms. A group of small vases and little brass jugs

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

with stylized decorations of floral motifs, hitherto considered Venetian work of the 16th century, should be attributed to the school of Herat of the late 15th century, since a similar piece in the British Museum (Inv. no. 1962-7-18-1) is inscribed with the name of Sultan Ḥusayn Bāyqarā and dated A.H. 903 (A.D. 1497).

Of gold- and silverwork (q.v.), apart from a very few pieces, nothing has survived of what must have been a superb output of articles and ornaments in precious metals. The miniatures of the 15th century show gold jewelry sometimes incrusted with stones; and contemporary sources state that Tīmūr Lenk wore magnificent brocades sewn with precious stones and that from his turban hung an enormous ruby.

The use of precious and semiprecious stones for household objects was widespread, under the direct influence of Chinese models. Jade in particular was employed for small bowls and jugs with dragon-shaped handles; it was also used for seal rings, such as the gold ring now in the Metropolitan Museum of New York (no. 12.224.6).

Arms were worked with great skill and richness (see ARMS AND ARMOR); many have been preserved.

Wood carving and stonework. In Central Asia the local tradition of monumental wood carving continued into the Timurid period, from which there remain great doors, entire mihrabs, mimbars, *maqṣūras*, and cenotaphs. Many of these works are dated and signed. The decorative motifs are strictly ornamental — floral or geometric, or sometimes both. The intaglio is very deep and precise in detail, giving the wood the appearance of metal. Examples are the cenotaph of Saif ad-Dīn Bākharzī (Bukhara, Mus.), probably executed in the second half of the 14th century, and the door of the Madrasah of Ulugh-Beg in Samarkand, carved in 1417. More freely decorated objects also were made, with only floral, almost naturalistic, motifs. Examples of this style are a Koran stand (Met. Mus., no. 10.218) dated Zu'lhijjah, A.H. 761 (Oct./Nov., 1360), made by Ḥasan ibn-Sulaymān of Isfahan; the door of the Mosque of the Shāh-i-Zind in Samarkand, from the end of the 14th century; the door of the Mosque of Aḥmad Yasavī at Turkestan, of about the same date; one of the doors of the Gūr-i-Mīr, now in Leningrad (The Hermitage), carved in about 1405; and the doors of the mosque of Afushta, near Natanz, one of which is dated Ramadan, A.H. 831 (June, 1428), and the other signed by Ustād Ḥusayn ibn-'Alī Najjār Naqqār (cabinetmaker and joiner) of 'Abbadi, near Natanz. Both these doors were made on commission for the same person, one Sayyid Ḥasan, probably at about the same time, if not actually by the same artist; they are perhaps the best examples in Persia itself of the Timurid style of Central Asia, which continued throughout the 15th century and even into the early Safavid period (see SAFAVID ART).

This free floral and arabesque style was also used to decorate tombstones (there is an example in the Isabella Stewart Gardner Mus., Boston), wall panels, bases of columns, and doorposts (e.g., the marble doorway of the Bībī Khānum Madrasah in Samarkand).

Carpets. Although no piece has survived intact, miniatures afford ample documentation of the beautiful carpets made in the 15th century. In these, unlike the carpets at the Persian court in the 16th century, geometric motifs after the Turko-Asiatic fashion seem to have been preferred. Apart from a few examples of the late 15th century, the decorative borders are really friezes with highly stylized Kufic inscriptions. The designs of these carpets, which vary in size, are bright, vigorous, and simple. The colors are varied, while the different combinations of decorative motifs reveal the sophisticated taste of the Timurids.

Toward the end of the 15th century, however, it seems that arabesques and floral elements, which were quite independent of the previous tradition, became popular, although the first floral motifs had already begun to appear in borders toward the middle of the century. On the other hand the production of carpets with geometric designs never entirely ceased. The change is perhaps due to the influence of Bihzād; in fact, in his miniatures of the *Khamsa* of Niẓāmī (II, PL. 299), executed in 1494, can be seen carpets of the new type, while in the miniatures of the more conservative Mīrak Naqqāsh, those with geometric designs are given preference. The central part of the carpets decorated with floral arabesques continued to be divided into geometric units; all the other motifs are floral. The tendency to emphasize a central pattern is also very clear, although in all these carpets decoration of endless intricacy is predominant.

Almost nothing has remained of the magnificent Timurid brocades and embroidered materials that are depicted in the miniatures.

SOURCES. R. Gonzales de Clavijo (d. 1412), Historia del gran Tamorlan, Seville, 1582 (Eng. ed., trans. G. Le Strange, Embassy to Tamerlane, 1403-1406, London, 1928); Aḥmad ibn-'Arabshāh (d. 1450), 'Ajā'ib al-maqdūr fī akhbārī Tīmūr (Eng. ed., trans. J. H. Sanders, Tamerlane or Timur, the Great Emir, London, 1936); Sharaf ad-Dīn 'Alī Yazdī (d. 1454), Ẓafar-nāma (Book of Victories), Calcutta, 1887 (Eng. ed., trans. J. Darby from Fr., London, 1723); Ẓahir ad-Dīn Muḥammad Bābur (d. 1530), Bābur-nāma (Eng. ed., trans. A. S. Beveridge, The Memoirs of Bābur, 3 vols., London, 1921); W. Hinz, Quellenstudien zur Geschichte der Timuriden, ZMG, XC, 1936, pp. 357-98.

BIBLIOG. *Architecture*: N. Simakoff, L'art de l'Asie Centrale, Recueil de l'art décoratif de l'Asie Centrale, St. Petersburg, 1883; E. Blochet, Les inscriptions de Samarcande, RA, s. III, XXX, 1897, pp. 67-77, 202-31; Z. von Schubert-Soldern, Die Baudenkmäler von Samarkand, Vienna, 1898; Z. von Schubert-Soldern, Bochara, Vienna, 1899; Z. von Schubert-Soldern, Die Mosaik- und Fayenceplattenbekleidung der Bauten von Central-Asien, Keramische Monatshefte, I, 1901, pp. 61-66, 73-82; Anonymous, Les Mosquées de Samarcande, fasc. I, Le Gour-Emir, Publié par la Commission Impériale Archéologique, St. Petersburg, 1905; Z. von Schubert-Soldern, Das Grab Timurs in Samarkand, O. Archiv, I, 1911, pp. 131-39; K. Graff, Die ersten Ausgrabungen der Ulugh-Bek Sternwarte in Samarkand, Sirius, LIII, 1920, pp. 169-73; D. Limongelli, Remarques au sujet de la stabilité de la coupole du Mausolée de Tamerlan à Samarcande, BIE, IV, 1921-22, pp. 77-92; M. E. Masson, Kulturno-istoričeskie eskursii po Samarkandu: Sobornaja mečet Timura, izvestnaja pod imenem mečeti Bibi-Hanum (Historical and cultural notes on Samarkand: The Grand Mosque of Tīmūr, known as the mosque of Bībī Khānum), Tashkent, 1926; M. E. Masson, Mavsolej Gur Emir (The Mausoleum of Gūr-i-Mīr), Tashkent 1926; J. Smolik, Die Timuridische Baudenkmäler in Samarkand aus der Zeit Tamerlans, Vienna, 1929; E. Cohn-Wiener, Turan: Islamische Baukunst in Mittelasien, Berlin, 1930; M. E. Masson, Mavsolej Hodža Ahmeda Jasevi (The Mausoleum of Khwāja Aḥmād Yasavī), Tashkent, 1930; A. Y. Yakubowsky, Samarkand pri Timure i Timuridach, Leningrad, 1933; E. Cohn-Wiener, An Unknown Timurid Building, BM, LXVI, 1935, pp. 272-77; R. Byron, Timurid Monuments in Afghanistan, Mémoires du III° Cong. Int. d'Art et d'Archéol. Iraniens, Leningrad, 1935, Moscow, 1939, pp. 34-37; R. Byron, Timurid Architecture, SPA, II, pp. 1119-43; A. U. Pope and P. Ackermann, Typical Monuments (Timurid), SPA, II, pp. 1144-64; N. M. Bačinskij, Arhitekturnye pamjatniki Turkmenii (Architectural monuments of Turkmenistan), Moscow, Ashabad, 1939; B. V. Vejman, Iskussto Srednej Azii (The art of Central Asia), Moscow, Leningrad, 1940; B. N. Zazypkin, Arhitektura Srednej Azii (The architecture of Central Asia), Moscow, 1948; S. N. Polupanov, Arhitekturnye pamjatniki Samarkanda (Architectural monuments of Samarkand), Moscow, 1948; A. A. Semenov, Inscriptions on the Tombs of Tīmūr and his Descendants, Epigrafika Vostoka, II, 1948, pp. 49-62, III, 1949, pp. 45-54; M. E. Masson, The Third Piece of the Jade Tombstone of Tīmūr, Epigrafika Vostoka, II, 1948, pp. 63-75; Š. E. Ratija, Mečet' Bibi-hanym v Samarkande (The Mosque of Bībī Khānum at Samarkand), Moscow, 1950; L. A. Mayer, Islamic Architects and their Works, Geneva, 1956; H. A. Juldašev, Arhitekturnyj ornament Tadzikistana (Architectural decoration in Tadzhikistan), Moscow, 1957; G. A. Pugačenkova and L. I. Rempel', Vydajuščiesja pamjatniki arhitektury Uzbekistana (The most outstanding architectural monuments of Uzbekistan), Tashkent, 1958; Historical Monuments of Islam in the U.S.S.R., Edited by the Editorial Department Moslem Religions Boards of Central Asia and Kazakhstan, Tashkent, 1962; G. A. Pugachenkova, 'Israt-khāneh and Ak-Saray, Two Timurid Mausoleums in Samarkand, Ars Orientalis, V, 1963, pp. 177-89; A. U. Pope, Persian Architecture, the Triumph of Form and Color, New York, 1965.

Painting: T. W. Arnold, Painting in Islam, Oxford, 1928; T. W. Arnold, Bihzād and his Paintings in the Ẓafar-Nāmah Ms., London, 1930; L. Binyon, J. V. S. Wilkinson, and B. Gray, Persian Miniature Painting, London, 1933; E. Schroeder, Aḥmed Mūsā and Shams al-Dīn. A Review of Fourteenth Century Painting, Ars Islamica, VI, 1939, pp. 113-42; I. Stchoukine, Les peintures des manuscrits timurides, Paris, 1954; B. W. Robinson, Origin and Date of three Famous Shāh nāmeh Illustrations, Ars O., I, 1954, pp. 105-12; B. W. Robinson, Prince Bāysonghor's Niẓāmi: A Speculation, Ars O., II, 1957, pp. 383-91; R. Pinder-Wilson, Persian Painting in the Fifteenth Century, London, 1958; B. W. Robinson, A Descriptive Catalogue of Persian Painting in the Bodleian Library, Oxford, 1958; B. W. Robinson, The Teheran Manuscript of Kalila wa Dimna: A Reconsideration, O. Art, N.S., IV, 1958, pp. 108-15; B. W. Robinson, The Dunimarle Shāhnāma: A Timurid Manuscript from Mazāndārān, Aus der Welt der Islamischen Kunst, Festschrift f. E. Kühnel, Berlin, 1959, pp. 207-18; R. Ettinghausen, Encyclopedia of Islam, s.v. Bihzād, I, 1960, pp. 1211-14, pl. XXXIII-XXXVI; B. Gray, La peinture persane, Geneva, 1961; I. Stchoukine, Un

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

manuscrit de Mehr et Moshtari illustré à Herat vers 1430, Arts Asiatiques, VIII, 1961, pp. 83–92; E. Grube, Miniature islamiche dal XII al XIX sec., Cat. della Mostra. Fondazione Giorgio Cini, Venice, 1962; B. W. Robinson, An Unpublished Manuscript of the Gulistān of Sa'dī, Beiträge zur Kg. Asiens, In Memoriam Ernst Diez, Istanbul, 1962, pp. 223–36; E. Kühnel, History of Miniature Painting and Drawing, SPA, III, pp. 1841–72.

Graphic arts: C. Huart, Les calligraphes et les miniaturistes de l'Orient musulman, Paris, 1908; R. Meyer Riefstahl, La décoration du livre oriental, Art et Décoration, XXXII, 1912, pp. 33–46; A. Sakisian, L'école de miniature à Herat au XVe siècle, La Renaissance française, IV, 1921, pp. 146–50, 293–97; T. A. Harrison, A Persian Binding of the Fifteenth Century, BM, XLIV, 1924, pp. 31–35; E. Kühnel, Das Ewqāf-Museum in Konstantinopel, ZfBk, LVIII, 1924–5, pp. 45–47; A. Sakisian, La reliure dans la Perse occidentale sous les Mongols au XIVe et au début du XVe siècle, Ars Islamica, I, 1934, pp. 80–91; A. Sakisian, La reliure persane au XVe siècle sous les Timourides, RArts, LXVI, 1934, pp. 145–68; M. Aga-Oglu, Persian Bookbindings of the Fifteenth Century, Ann Arbor, 1935; A. Sakisian, La reliure persane au XVe siècle sous les Turcomans, AAs, VII, 1937, pp. 210–23; Anonymous, Calligraphy, An Outline History: The Mongol and Timurid Periods, SPA, II, pp. 1732–37, V, pl. 940, 941; R. Ettinghausen, Manuscript Illumination, the Timurid Period, SPA, III, pp. 1959–68, V, pl. 940–47; E. Gratzl, Book Covers, SPA, III, pp. 1977–81, V, pl. 952–57; A. Sakisian, Thèmes et motifs d'enluminure, Ars Islamica, VI, 1939, pp. 66–87; The History of Bookbinding, 525–1950 A.D., An Exhibition held at the Baltimore Museum of Art, Baltimore, 1957, nn. 75–83; Calligraphers and Painters, a Treatise by Qādī Aḥmad ca. 1606, trans. by V. Minorsky, Washington, 1959.

Decorative arts: R. F. Martin, Türen aus Turkestan, Stockholm, 1897; V. Minorsky, A Sarcophagus of the 15th Century, Proc. of the 2d Int. Cong. on Per. Art, London, 1931, p. 26; A. G. Jakubovskij, Mastera Irana v Srednej Azii pri Timure (Iranian Masters in Central Asia at the time of Tīmūr), Mémoires du IIIe Cong. Int. d'Art et d'Archéol. Iraniens, Leningrad, 1935, Moscow, 1939, pp. 277–85, pl. CXIX–CXXIII; M. S. Dimand, Dated Persian Doors of the Fifteenth Century, BMMA, XXXI, 1936, pp. 78–80; A. L. B. Ashton, Early Blue-and-White in Persian Mss., Tr. of the O. Ceramic Soc., XII (1934–35), London, 1936, pp. 21–25; H. Reitlinger, The Interim Period in Persian Pottery; an Essay in Chronological Revision, Ars Islamica, V, 1938, pp. 155–78; R. Harari, Metalwork after the Early Islamic Period, SPA, III, p. 2508 f., V, pl. 1373–75, 1377; A. U. Pope, The Art of Carpetmaking, SPA, III, p. 2282 f.; P. Ackermann, Islamic Textiles, The Fifteenth and Early Sixteenth Centuries, SPA, III, pp. 2061–68; L. Bronstein, Decorative Woodwork of the Islamic Period, SPA, III, p. 2618 f.; A. Lane, The so-called 'Kubachi' Wares of Persia, BM, LXXV, 1939, pp. 156–62; M. E. Crane, A Fourteenth Century Mihrab from Isfahan, Ars Islamica, VIII, 1940, pp. 96–100; A. Briggs, Timurid Carpets, I, Geometric Carpets, Ars Islamica, VII, 1940, pp. 20–54, II, Arabesque and Flower Carpets, Ars Islamica, XI-XII, 1946, pp. 184–90; B. Gray, Blue-and-White Vessels in Persian Miniatures of the Fourteenth and Fifteenth Centuries, Tr. of the O. Ceramic Soc., XXIV, London, 1948–49, pp. 23–30; K. Erdmann, Der orientalische Knüpfeteppich, Versuch einer Darstellung seiner Geschichte, Tübingen, 1955; Y. Brunhammer, Céramiques dites de Koubatchi, Cahiers de la céramique, V, 1956–57, pp. 24–34; A. Lane, Later Islamic Pottery, London, 1957; L. A. Mayer, Islamic Woodcarvers and their Works, Geneva, 1958; L. A. Mayer, Islamic Metalworkers and their Works, Geneva, 1959; E. Kühnel, Islamische Kleinkunst, Brunswick, 1963.

Ernst J. Grube

Illustrations: pls. 67–72; 3 figs. in text.

TINO DI CAMAINO. Italian sculptor (b. Siena, ca. 1285; d. Naples, 1337). Tino started his activity in Siena on the Cathedral, for which Giovanni Pisano (q.v.) was Capomaestro. His first work under Giovanni was the architrave for the main door of the Cathedral (E. Carli, 1934). In this work the style of Giovanni Pisano, although outwardly followed in its general lines — especially in the way the bodies are twisted and the limbs bent — is intrinsically contradicted, for the structure springs from a different sensitivity. While Giovanni seemed to devaluate almost dogmatically the nature of the material, seeing it only in its dynamic possibilities, Tino let the material assert itself in volumes that are condensed and contracted into tranquil forms. These forms already have a personal flavor, though they can be traced back to Nicola Pisano (q.v.) or, better, to Arnolfo di Cambio (q.v.). Shortly after 1300 Tino was in Pisa; whether he was an assistant of Giovanni Pisano there is not known, but he was certainly working on the Cathedral, for which, again, Giovanni was Capomaestro. In Pisa, in 1311–12, Tino executed the altar of S. Ranieri in the Camposanto and soon afterward the baptismal font for the Cathedral, which is signed by him (largely destroyed by fire in 1595; fragments in Pisa, Mus. Naz. and Camposanto). The importance of this work suggests that previous works, now lost, must have gained him the reputation on the basis of which, perhaps as early as 1312, he was commissioned to execute the tomb of Emperor Henry VII, which he completed in 1315. In the same year Tino was called to replace Giovanni Pisano as Capomaestro; but in 1318 he was deprived of the post for being a Guelph (in Ghibelline Pisa), though it was not until 1322 that he was officially dismissed.

The emperor's tomb has been dismantled, so its original appearance is conjectural. In the Camposanto of Pisa, only some large figures remain, together with the smaller statues of the Annunciation group and a few other pieces whose connection with the tomb is difficult to ascertain. The front of the sarcophagus, now in Pisa Cathedral, shows a large group whose choirlike alignment is emphasized and almost "scanned" by the rhythm created mainly by the small overhanging arches that frame and isolate each individual head. In the superbly sculptured figures (pl. 74) perhaps originally situated above the sarcophagus under a canopy, a new style, which was to remain basically consistent and characteristic throughout Tino's work, asserted itself fully for the first time. The central figure of the seated emperor shows the first signs of that process of abstraction which was to lead to the reclining figures of the artist's later period, in which the flowing linear play of the surfaces synthesizes and enhances a keen sense of volume. In the figures of the attendants, however, almost as if to differentiate them from the central figures, the volumes, squared to the point of becoming geometric, seem to be turning slowly, creating a tension that is emphasized by the sharp bends of the arms and the position of the feet. The same characteristics reappear in Tino's Madonna in Turin (Mus. Civ.).

The year 1318 saw Tino in Siena, where he executed the tomb of Cardinal Riccardo Petroni (pl. 73), perhaps with the collaboration, for the architectural parts of the work, of his father, who seems to have been associated with him in the office of Capomaestro from 1317 to 1320. The tomb has been often dismantled and reassembled; but the present arrangement offers a fairly clear idea of the structural scheme of Tino's tombs of that period: a sculptured sarcophagus, supported by allegorical figures, on which the recumbent effigy was represented under a canopy, generally between two figures of angels or clerics. In the relief on this tomb the treatment of the volumes is decidedly compact; the forms seem hardly separated from the background, to which the planes tend to run parallel and to which the incisions, whether deep or superficial, are perpendicular.

In 1321 Tino left Siena to go to Florence, where in the same year he created the funerary monument (signed) of Bishop Antonio Orso in the Cathedral, that of Gastone della Torre in the cloister of Sta Croce, and, according to some scholars, that of Tedice Aliotti di Fiesole in S. Maria Novella; the latter, however, was executed with considerable assistance. Unfortunately, these works have suffered as much misfortune as his other works of the Florentine period and are now not only partly dismantled but scattered in various museums in Florence, as well as in Frankfurt am Main (Liebighaus), Berlin (Staat. Mus.), and London (Vict. and Alb.). However, it can be inferred that the general plan of all of them was more or less the same as that of the Petroni tomb, with the exception of the monument of Bishop Orso; here the bishop is represented as a strongly characterized seated figure above the sarcophagus, with eyes closed, as though in sleep. No less powerful are the Madonna and Child (*Sedes sapientiae*; VI, pl. 365), which may have belonged to the Orso monument, and the beautiful *Charity* in Florence (pl. 76).

In about 1323 Tino went to Naples to the court of the Angevins. The first work attributed to him there is the tomb of Catherine of Austria, first wife of Charles, Duke of Calabria, in the Church of S. Lorenzo Maggiore. However, this monument lacks unity in its architectural parts, and its sculptural elements are easily discriminated; the structure was probably executed before Tino's arrival by various Roman and Neapolitan artists of diverse merits and inclinations, as indicated by the schemes and by the variety and character of the mosaic sections. To Tino can be attributed the recumbent effigy of the princess, serene and almost ethereal; the massive figures of four atten-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

dants at head and foot guarding her sleep; the relief of the Stigmatization of St. Francis — reminiscent of the iconography of Giotto — on the gable of the canopy; and the two superbly sculptured supports. On one of these a female figure, shown in front view, and two small figures form a forceful unitary volume whose details, rather than breaking it up, enhance its weight, which is mitigated only by the wisps of flamelike hair that join the figure to the base of the sarcophagus; on the other the figure is turned sideways, and the effect of a rotating movement of the mass is accentuated by sharp angles, which are, however, without any suggestion of dynamism.

Between 1324 and 1326 Tino executed the tomb of Queen Mary of Hungary (PLS. 74, 75), widow of Charles II of Anjou, in the Church of S. Maria Donnaregina. The architectural structure of this monument was the work of Gagliardo Primario, a Neapolitan architect of the first half of the 14th century; but Tino undoubtedly contributed to it, achieving such a perfect blend of architecture and sculpture that the work appears to be a single sculptured block, in which the sepulchral scheme derived from Arnolfo di Cambio is reinterpreted according to local tradition. Within this scheme the sculpture comes alive: the reclining figure, an image aloof and serene, all spacious, elongated planes; the relief on the sarcophagus, which develops the rhythmic motif that first appeared on Henry VII's sarcophagus — here achieved by niches that isolate the seated figures of the Queen's sons or courtiers; the angels who draw back the curtains; the delicate Madonna (sister to the Bardini *Charity*), flanked by two angels and the kneeling Queen, on the canopy; the fine archangel at the top of the monument, contained but full of potential motion; and finally, the impressive figures supporting the sarcophagus. Tino put his whole art into the making of these sculptures, which are the highest manifestation of his mastery. His style had acquired a Gothic flavor that met the taste of the Angevin court but came to him primarily through contemporaneous Sienese painters, especially Simone Martini, who had been active in Naples shortly before Tino's arrival. From Gothic art, however, he accepted only certain aspects, which, though they may have colored his work with a touch of intellectualism, were nevertheless transformed by his vision, in which it was always the classicist element — perhaps an influence of Nicola Pisano — that formed the framework and basis. His was thus a fundamentally anti-Gothic vision, comparable to (if anything) that of Ambrogio Lorenzetti (q.v.), not so much owing to any exchange between the two as to their being offspring of the same culture.

From this point on, Tino's work extended to other fields. Between 1325 and 1337 he supervised the building of the Certosa di S. Martino and the modernizing of the nearby Castle of Belforte, later known as Castel S. Elmo; in 1334–35 he was in charge of the enlargement of the city's arsenal; and in 1335 he supervised the building of the bridge (destroyed) in the park of Castel Nuovo. Obviously he could not personally attend to all the work that the Angevin court commissioned him to execute and was therefore obliged to employ numerous assistants. The designs of the funerary monuments created during that period were undoubtedly his; nevertheless, owing to his dominant sculptural sense, the architectural parts of the monuments lack the coherent unity that characterizes the tomb of Mary of Hungary. As a result, the sepulchers and the tabernacles in which they are enclosed, though physically still forming a whole, have the appearance of unrelated elements. In contrast, the sculptural parts signed by Tino are of a uniformly high quality. These sculptures (all in Naples) include the reclining figure of Mary, little daughter of Charles of Calabria (Church of S. Chiara); the beautiful fragment of a female figure (Mus. Naz. di S. Martino), perhaps once part of the tomb of Mathilde de Hainaut (destroyed), repudiated first wife of John, Duke of Durazzo; at least one of the dismantled Angevin tombs in the Cathedral that were commissioned by Robert of Anjou in 1333; perhaps the monument of Charles Martel of Hungary, of which there remains a recumbent figure, unmistakably the master's own, which was later incorporated in the funerary monument of a certain Matteo Caracciolo in the Cathedral; a small figure of Fortitude, which was also part of a tomb; the Madonna, *Mater orbis*, now in the lunette of the 15th-century main portal of the Cathedral; and the two lions, each supporting a column, in the same portal.

For the tomb of Mary of Valois, second wife of Charles of Calabria, in S. Chiara, the parts that Tino created are the delicate and refined image of the recumbent princess, the Madonna above the canopy, and the two figures of the Annunciation on the front corners of the sarcophagus. The monument of Charles of Calabria, in the same church, was designed by Tino (1332–33), but he probably executed only the groups of angels supporting the sarcophagus, for neither the figures at the back and front nor the recumbent effigy can be attributed to his hand. Also his are the fragment of a Crucifixion discovered in S. Chiara (where the back of it had been reused in a later monument), in which Tino briefly returned to his early style, condensed and compact but not dry; the pieces of an altar in the Abbey of the Trinità in Cava dei Tirreni, where traces of the influence of the Pisanos are apparent (e.g., the seated Madonna); and the groups on the sides of the crucifix, now lost, which are reminiscent of, and possibly contemporaneous with, the figures of the attendants on the tomb of Charles of Calabria, although they are not of the same quality.

Tino's assistants played an even greater part in the making of the tombs of Philip of Taranto and John of Durazzo, in the Church of S. Domenico Maggiore; the monuments are now dismantled, but their front reliefs are still in the church. Some figures that presumably formed part of these tombs are signed by Tino: the Madonna and Child, the St. Dominic with John of Durazzo (both, Naples, Mus. Naz. di S. Martino), and the small, seated Madonna that is now part of an altar in S. Domenico Maggiore. But various fragments in private collections and in the Cleveland Museum of Art and the female figures later inserted in the 16th-century candelabrum in the Church of S. Domenico are the work of assistants, although some critics (e.g., Valentiner, 1935) attribute them to Tino. Also Tino's is a small votive relief showing Queen Sancia, wife of Robert of Anjou, with the Virgin and Child (Washington, D.C., Nat. Gall.), which may have come from S. Chiara.

According to documents in Naples (E. Carli, 1934, p. 96), Tino died during the second half of 1337. His workshop continued to spread his designs throughout the south of Italy until the 15th century; but the impetus of his art gradually faded with his last followers and with the emergence of new Florentine and Roman influences that began to penetrate southern Italy in the middle of the 15th century.

BIBLIOG. H. Keller, ThB, s.v.; E. Carli, Tino di Camaino, scultore, Florence, 1934; L. Becherucci, Marmi di Tino di Camaino a Napoli, BArte, XXVIII, 1935, pp. 313–22; W. R. Valentiner, Tino di Camaino, Paris, 1935; W. Cohn-Goerke, Scultori senesi del Trecento, RArte, XX, 1938, pp. 242–89, XXI, 1939, pp. 1–40; O. Morisani, Nota su Tino di Camaino a Napoli, L'Arte, XLIII, 1940, pp. 189–97; E. Carli, Contributi a Tino di Camaino, Scultore del Duomo di Siena, Turin, 1941, pp. 23–31; L. Becherucci, Recensione al Carli, RArte, XXIV, 1942, pp. 101–07; O. Morisani, Tino di Camaino a Napoli, Naples, 1945; O. Morisani, Tre contributi per la scultura pisana a Napoli, Belle arti, I, 1946, pp. 30–34; O. Morisani, Tino a Cava de' Tirreni, CrArte, VIII, 1949–50, pp. 104–13; W. R. Valentiner, Tino di Camaino in Florence, AQ, XVII, 2, 1954, pp. 116–33.

Ottavio MORISANI

Illustrations: PLS. 73–76.

TINTORETTO. The sources are not in agreement on the year of birth of Jacopo Robusti, the Venetian painter known as Tintoretto. Ridolfi (1642) gives it as 1512, whereas Borghini (1584), in reporting the artist's age as sixty, brings it up to 1524. The death certificate, dated 1594, states that Tintoretto was seventy-five years old (thus born in 1519). On the other hand, in the portrait engraved in 1588 by Gijsbert van Veen, after Ludovico Pozzoserrato (Lodewyck Toeput), the sitter's age is given as seventy, which puts his birth in the year 1518.

Born in Venice, most likely in 1518 or 1519, Tintoretto was the son of Giovanni Battista Robusti, a silk dyer; the family probably originated in Lucca. The painter signed a will of 1539: "Jo mistro Giacomo depentor nel champo di San Chassan. . . ." In 1544 he was still living in S. Cassiano; in 1555

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

he was recorded as living in S. Marziale. In 1574 he bought a house on the Fondamenta dei Mori near the Church of the Madonna dell'Orto. About 1555 Tintoretto married Faustina, daughter of Marco Episcopi (dei Vescovi), who was a dean in 1536 and Grand Guardian in 1544 of the Scuola Grande di S. Marco. Their daughter Marietta was born in 1556 according to Borghini (1584), four years later according to Ridolfi (1648). Their first son was Giovanni Battista. There followed Domenico, about 1560, and Marco, probably in 1561, Perina (Pierina) in 1562, Ottavia in 1570, and Laura in 1585. Of a daughter named Altura (Alturia) it is known that she was still living in 1645. Marietta, Giovanni Battista, Domenico, and Marco became painters.

The story of Tintoretto's life is not marked by outstanding events. Of the great painters of the Venetian school of the Cinquecento he was the only one born in Venice. Except for a recorded visit to the Gonzaga court in Mantua in September, 1580, and a probable journey to Rome in 1547 (Pevsner, 1928), he did not leave his native town. In a letter written to the youthful Tintoretto in February, 1545, Pietro Aretino touched on his pride and offered him counsel of moderation.

In 1590 Tintoretto's daughter Marietta died. Not long afterward, on May 31, 1594, his own life came to an end. He was buried in the Church of the Madonna dell'Orto.

The stylistic orientation of the art of Tintoretto cannot be understood without reference to the new mannerist movement, of Tusco-Roman and Emilian origin, which between 1530 and 1550 transformed the Venetian tradition (see MANNERISM). The "mannerist crisis," as Coletti (1941) described it, not only influenced Tintoretto but also played an important part in the stylistic development of Titian (q.v.); its new formal solutions undoubtedly conditioned the artistic formation of Paolo Veronese and Jacopo Bassano (qq.v.). In the hands of imitators the Giorgionesque style was taking on a fragmentary neo-Byzantine character — that is to say, an insubstantial two-dimensional decorativeness. The first to react against this tendency were Pordenone and Lorenzo Lotto (q.v.), the former through his Rome-reinforced feeling for plasticity and the latter through his use of color. About 1540, strong mannerist impulses, principally of Mantuan derivation — that is, from the art of Giulio Romano (q.v.) — threatened the integrity of the Titianesque pictorial form. Paris Bordone, Bonifazio Veronese, and Schiavone (Andrea Meldolla) were converted to the new fashion, and the influence of Parmigianino (q.v.), brought to Venice by Schiavone, became an important factor in the genesis of the style of both Tintoretto and Bassano. Francesco Salviati and his pupil Giuseppe (Porta) Salviati arrived in Venice in 1539, the latter to settle there for good. Vasari (q.v.) visited the city in 1541. Giovanni Demio (Giovanni Fratino), who had received his schooling in Rome in contact with the "reformed and archaized Michelangelism" (Lorenzetti, 1926), was a member of the guild of Venetian mosaicists from 1537 on, and his activity in the Veneto was also influential in the formation of Paolo Veronese's decorative landscape.

Aretino, who had been established in Venice since 1527, although at first a lively partisan of the Tusco-Roman style, came to follow the development of Venetian art with deep understanding. In the spring of 1535 he received from Vasari the drawings of the Medici tombs. There was a lively admiration for Michelangelo in Venice. Titian was evidently familiar with his works in the late 1520s. The cult was echoed in the polemic skirmishes that occurred, in the course of a few years, between Paolo Pino (1548), Anton Francesco Doni (1549), and Michelangelo Biondo (1549), culminating in Lodovico Dolce's *Dialogo* (1557), which definitively repudiated Michelangelo in favor of the local idol, Titian. Jacopo Sansovino also established himself in Venice, in 1527, and his classicism, both in architecture and in sculpture, was soon inseminated with the fertile seeds of mannerism. It was certainly he who occasioned the arrival in the Veneto of the Tuscan sculptor Danese Cattaneo, already active in Padua in 1533 (see SANSOVINO). Another who played a part in the transformation of Venetian taste was Bartolommeo Ammanati (q.v.).

The Tusco-Roman and Emilian currents of mannerism thus brought to the spent Venetian tradition expressive means appropriate to new narrative directions. The result is a powerful idiom in which form and color seem to melt in a synthesis dominated by light, with its import of intense spirituality, imaginative and visionary — thence the chromatic lyricism of Titian, the tormented chiaroscuro of Tintoretto, the pictorial classicism of Paolo Veronese, and the luminism of Bassano.

According to Ridolfi (1642), Tintoretto served an apprenticeship in Titian's studio, cut short owing to the master's jealousy of the exceptional achievements of his pupil and to the latter's arrogant disposition. Boschini (1660) repeated the theme of Titian's jealousy. Borghini (1584), for his part, regarded Tintoretto's style as founded on the study of Tuscan formal elements, especially the Michelangelesque, and of pictorial elements derived from Titian. As early as 1548 Paolo Pino had adjudged Michelangelo and Titian to be the two necessary constituents in the formation of the ideal artist. Pino's opinion and Borghini's remarks were undoubtedly the source of Ridolfi's anecdote that tells of the sign which Tintoretto had posted in his studio: "Il disegno de Michel'Angelo, et il colorito di Titiano."

That Tintoretto copied casts of the works of Michelangelo, Jacopo Sansovino, and Giambologna (qq.v.) was a fact too important to have escaped Ridolfi. This practice certainly followed a long and somewhat laborious apprenticeship — that is, only after a grasp of the mannerism of central Italy had made its way into Tintoretto's own style. Ridolfi describes the care with which the artist drew "bodies from life, placing them in various attitudes . . . recording their infinite foreshortenings," and how he "practiced by making little models of wax and clay, dressing them up with bits of stuff and studying carefully the contours of the limbs with the folds of the draperies. Some he also set up in little houses and in perspective scenes made of wood and cardboard, and by contriving little lamps in the windows he introduced therein lights and shadows. He also hung some models by threads to the roof beams to study the effect they made when seen from below, and to get the foreshortenings of figures for ceilings. By such methods he composed strange inventions." The fact that Tintoretto translated his initial concept into plastic terms by means of models, completing it with various light effects, imparted to his compositional solutions their scenographic quality. Once the composition was thus set in its actuality of light and shade, Tintoretto would study the attitudes of the figures from models. This procedure accounts for the unfailing sensitiveness to scenic and dramatic effect that underlies Tintoretto's narrative style: from the relation between figures and setting, resolved luministically, arises the vibrant chiaroscuro that animates his artistic vision.

To judge from the works that can be regarded as dating from the beginning of his activity — the *Virgin between SS. Joseph and Jerome with a Donor* (the donor being the procurator Girolamo Marcello, shown in the act of swearing on the Bible), datable after 1537 (formerly Lucerne, Switzerland, private coll.), and other depictions of the *sacra conversazione* theme — it is clear that, although Tintoretto was not bound to any particular school, he was *au courant* of contemporary Venetian culture and, stimulated by it, drew freely upon it for those elements which interested him. Dated 1540 is a work basic to the understanding of Tintoretto's artistic beginnings — the large *Madonna and Child with Six Saints* (New York, Wildenstein Coll.), earlier attributed to the untraceable Jacopo Molino (Von Hadeln, 1928) but since reclaimed for Tintoretto (Pallucchini, 1950). An affecting wave of movement sways the saints encircling the Virgin, thus creating a rotary rhythm that was to become typical of Tintoretto. In the *Sacra Conversazione* in Berlin (Staat. Mus.) the coloring is deeper and the chiaroscuro heightened, with darker shading in the folds of the draperies and flashes of intense light at the high points. Among the works of this early period are a group of 14 octagonal ceiling paintings of mythological subjects (Modena, Gall. Estense), reaffirmed for Tintoretto by Thode (1901), in which the episodes are depicted with a few figures seen *dal sotto in sù* and with a singular narrative clarity. Also reattributed to Tintoretto is the *Presentation in the Temple* in the Church of S. Maria del Carmelo,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Venice, which had been ascribed to him by Venetian sources from Francesco Sansovino (1581) on, though it was given to Schiavone by Vasari. This painting shows considerable lack of proportion in the spatial relationships, but this is compensated for by a narrative urgency that unifies the composition on its various and well-defined planes. In the *Supper at Emmaus* (Budapest, Mus. of Fine Arts) Tintoretto returned to the narrative schemes of Bonifazio Veronese, enriching them with a greater expressiveness of feeling and a dramatic tension released in full motion. This painting has many points of similarity with the *Christ among the Doctors* in Milan (Mus. del Duomo), discovered and published by Arcangeli (1955), who points out its importance in the historical development of northern Italian mannerism.

Ridolfi testified to the fact that from the beginning Tintoretto was active as a fresco painter. The technique of the fresco did play a part in the development of his artistic idiom and certainly fostered the speed of execution that was to become fundamental to his style. Ridolfi also stressed his closeness to Schiavone, recording examples of collaboration, including the works for the Palazzo Zen, where Tintoretto had painted, along with other works, the *Conversion of St. Paul*. Among the more significant works of this period are the six Biblical scenes in Vienna (Kunsthist. Mus.; PL. 78), considered to be by Schiavone until Von Hadeln (ZfbK, 1922) restored them to Tintoretto. In these scenes the narrative impulse prevails. The small figures are drawn with a lively brush, quick to touch the peaks of the draperies with flashes of light: a fresh imaginative inspiration impels them into a variety of attitudes and groupings. These six Biblical scenes, possibly *cassone* panels, are comparable in style to the *Nine Muses* in Verona (Mus. di Castelvecchio), the *Adoration of the Golden Calf* in Vienna (Kunsthist. Mus.), and the *Conversion of St. Paul* in Washington, D.C. (Nat. Gall.), the last-mentioned of quite different proportions. In these works the influence of Parmigianino, by way of Schiavone, works toward painterly solutions modulated to schemes of drawing executed with the tip of the brush and endowed with captivating grace.

There is a neo-Byzantine cadence in this particular period of Tintoretto's work, the culmination of which is surely the *Contest between Apollo and Marsyas* in Hartford, Conn. (Wadsworth Atheneum), painted in 1544/45 (together with a pendant now lost), for a ceiling in the house of Aretino, who thanked Tintoretto for the two paintings in a letter of February, 1545, and commended him for his speed of execution; he recognized the originality of the modes of expression of the young Venetian painter, whose quickness of realization was the manifestation of an inner urgency. Stylistically akin to the *Apollo and Marsyas* is the *Forge of Vulcan* (Raleigh, North Carolina Mus. of Art), and close in date — it can be assigned to 1545 — is the small altarpiece with St. Demetrius and the portrait of Zuan Pietro Ghisi in the Church of S. Felice in Venice.

Between early 1545 and 1547, the year in which the *Last Supper* for the Church of S. Marcuola (PL. 79) was completed, Tintoretto worked toward an ultimate clarification of his aims — his *Kunstwollen*. Weighing all the potentialities of his expressive means, he now attained to a narrative style of high dramatic power, culminating in the *St. Mark Rescuing a Slave* of 1548 (PL. 80). The maturing of Tintoretto's style was probably the result of contact with post-Michelangelesque Roman painting. There is evidence of his having pondered, for instance, on the *Visitation* by Francesco Salviati (IX, PL. 309) in the oratory of S. Giovanni Decollato, Rome, and on Daniele da Volterra's *Deposition*, a fresco painted in 1541 in the Church of Trinità dei Monti, Rome (from which he drew passages, inserting them in the *Deposition* formerly in the Church of S. Francesco della Vigna, a fragment of which painting is in Bridgewater House, London). A hypothetical journey to Rome in 1547 might well account for this tendency in Tintoretto's work and explain his more profound awareness of the post-Michelangelesque idiom. His compositions were thenceforth marked by a more complex spatial articulation, by means of which he achieved the luministic scheme fundamental to the large scenes carried out before 1550.

This new phase of Tintoretto's style had its beginnings with the *Visit of the Queen of Sheba to Solomon* (PL. 80); the versions of *Christ and the Adulteress* in Amsterdam (Rijksmus., Vom Rath Coll.), Rome (Gall. Naz.), and Milan (Pin. Arcivescovile); the *Ecce Homo* in São Paulo, Brazil (Mus. de Arte); the *Crucifixion* in Padua (Mus. Civ.); the *Christ Washing the Feet of the Apostles* in Wilton House, Salisbury (Earl of Pembroke Coll.); and the *Christ in the House of Simon the Pharisee* in the Escorial. In these paintings, for the most part horizontal in format, Tintoretto developed narrative rudiments already present in embryo in the Vienna *cassone* panels (PL. 78), setting them in spaces whose perspective relationships appear highly exaggerated, almost unreal. He was adapting his pictorial means gradually to the narrative requirement: however, the mannerist premises that had gone into his formation as an artist lend his narration a tone that is imaginary rather than naturalistic.

It is probable that the *Christ and the Adulteress* in Dresden (Gemäldegal.), which repeats and develops the compositional pattern of the painting of the same subject in Milan and also that of the *Magdalen at the Feet of Christ* in the Escorial, is earlier by a few months than the *Last Supper* in the Church of S. Marcuola (PL. 79), which was delivered on Aug. 27, 1547. In the *Magdalen at the Feet of Christ* the light goes hand in hand with the compositional effects, controlling and graduating them. This is an unreal and violent light, which gives a distinct relief to the forms and breaks them up into a variety of shapes, thus accentuating, from a chromatic and no longer solely plastic point of view, the sense of restless motion suggested by the mannerist esthetic.

In the Church of S. Marcuola the *Last Supper* was a companion piece to the *Christ Washing the Feet of the Apostles* (PL. 79), now in the Prado, which was bought in Venice in 1649 by Velázquez (q.v.) and installed in the Escorial. In this composition, which brings into focus with a more mature stylistic coherence the subject of the above-mentioned painting in the Pembroke Collection, an unreal light, radiating fanwise, individualizes the various figures; realistically characterized, they, in turn, radiate and spread out from the background to the edges of the picture, where they form lateral groups. As Gould (1962) has noted, the architecture in the background is drawn from Serlio. One of Tintoretto's earliest masterpieces, the *Last Supper* of S. Marcuola is characterized by an agitated chiaroscuro that heightens its dramatic tone. There is no longer the expansive spatiality of the *Christ Washing the Feet of the Apostles*; instead, the frontal disposition of the table, around which the Apostles are drawn close, is severe, almost archaizing. The furiously energetic brushwork, applied in a succession of light and dark areas, produces an effect of continuous movement and almost breaks the compactness of the surfaces, giving this masterpiece the freshness and vivacity that distinguish it. Through his choice of rough and ordinary types, Tintoretto succeeded in imparting to the scene its feeling of normal, everyday reality surprised by the revelation of the miracle.

A painting that should probably be dated slightly earlier than the *St. Mark Rescuing a Slave* of 1548 is the *Esther before Ahasuerus* (Hampton Court, England, Royal Colls.), of which a replica with slight variations is in the Escorial.

The difference in style between the *Last Supper* of S. Marcuola (PL. 79) and the *St. Mark Rescuing a Slave* (PL. 80), painted scarcely seven or eight months later, shows how tirelessly Tintoretto experimented with new ideas. Both Ridolfi and Boschini take note of the tradition recounting the surprise with which the latter painting was received by the public. In April, 1548, Aretino addressed to the artist a letter in which he expressed the fullest praise for the naturalness of the figure of the slave and for the plastic feeling and the drawing, following this with a reservation concerning the hastiness of execution and exhorting him to correct this in the course of time, as though it were a question of youthful exuberance. In any case, Aretino's letter, despite its reservation, gave the stamp of official approval to the fame of the thirty-year-old artist. The *St. Mark Rescuing a Slave* attracted the attention of 19th-century historians to such an extent as to appear isolated from and almost unrelated to the fervent efforts that preceded it. Unquestionably

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the painting marks the achievement of a style, at once economical and lavish, in which elements found in many earlier works converge. The varied experiments — from the plastic violence of masses in motion, conceived in contrasts of light and shadow, to the flowing painterliness — that abound in this masterpiece are disciplined by a coherence of artistic feeling and welded into an unflawed synthesis.

Tintoretto's interest in portraits, which often found a place in his compositions, has been suggested by the references to the votive painting with the procurator Girolamo Marcello and the altarpiece of S. Felice in Venice with the likeness of Zuan Pietro Ghisi. In the *St. Mark Rescuing a Slave* (PL. 80) appear Tommaso Rangone, Aretino (in profile), and a self-portrait (in three-quarter view). Referring to *The Coronation of Barbarossa* (destroyed), painted a few years later for the Doges' Palace, Vasari noted that the "portraits of noblemen scattered about this scene are very well painted, and brought him fame and general favor." Of the independent portraits, one of the earliest is probably the three-quarter-view *Young Man*, dated 1545, at Hampton Court, England (Royal Colls.). The small portrait in the Uffizi is signed and dated 1546. Stylistically similar are two self-portraits, showing head and shoulders in three-quarter view (London, Vict. and Alb.; New York, M. Ascoli Coll.), both studies painted with extreme vigor, which project a proud and haughty image of the artist. The *Portrait of a Gentleman with a Fur* in Otterlo, Netherlands (Rijksmus. Kröller-Müller), is dated 1547. A more complex work is the *Portrait of a Gentleman with a Fur* (formerly London, Holford Coll.), dated 1548, which is stylistically related to a portrait in New York (Brooklyn Mus.).

The year 1548 was undoubtedly of primary importance for Tintoretto's artistic career. The *St. Mark Rescuing a Slave*, destined to have such clamorous success, signaled the end of a decade of laborious and sometimes audacious experiments. Tintoretto thus came to be compared with Titian, to whom the young painter must have posed something of a threat, both through his way of attracting attention and through being endowed with a talent that could not be overlooked. It must have been Titian's brooding animus that inspired a certain coolness in Aretino, who, although he could boast of having launched Tintoretto in 1545, did not continue to show him the affectionate sympathy of those days. It appears from a letter that Aretino wrote in January, 1548, probably to Domenico Boccamazza, that Titian held Aretino responsible for some fault or omission on the part of Tintoretto. Not the last result of this animus was the negative and disdainful attitude assumed toward Tintoretto by Dolce in his apologia of 1557 in favor of Titian (written in 1555). But other voices had been raised in his favor; Pino (1548), for example, placed him among the "valenti pittori" of the day.

In 1549 Tintoretto completed the altarpiece *St. Martial with SS. Peter and Paul*, begun a year earlier for the Church of S. Marziale, a work less programmatic than the preceding ones and even somewhat conformist. In the same year he also delivered the vast canvas *St. Roch among the Plague-stricken* for the Church of S. Rocco. Giving free rein to his narrative instinct, Tintoretto here spurred his best talents to a treatment of greater boldness and deliberate fantasy. In this painting, "celebre per la rarità della composizione" (Ridolfi, 1642), a twofold light effect again constitutes the fulcrum of the compelling and complicated compositional scheme. To this period belong the altarpieces *St. Augustine Healing the Plague-stricken* (Vicenza, Mus. Civ.) and *Madonna and Child with Saints* (Modena, Gall. Estense); the latter develops the soaring composition of the *St. Martial with SS. Peter and Paul*, but with a more vertical movement. *The Mystic Marriage of St. Catherine* (Lyons, Mus. B. A.) and *The Visitation* (Bologna, Pin. Naz.) can be dated about 1550. In the Louvre *Susanna and the Elders*, of the same period, the landscape setting assumes a dominant part in the composition.

Tintoretto at this time is beginning to give proof of greater subtlety in the painterly quality of his style, as is shown by *The Creation of the Animals*, *The Fall of Man*, and *Cain and Abel*, in the Accademia in Venice, and a fragment of *The Eternal Forbids Adam and Eve to Eat of the Tree of Life*, in the Uffizi — all of which belong to the cycle of stories from Genesis painted between 1550 and 1553 for the Albergo of the Scuola della Trinità. A new cosmic sense of nature reinforces Tintoretto's artistic inspiration: the landscape is not set apart in lyric contemplation, as in the works of Titian (Coletti, 1940), but is colored by the mood of the composition as a whole. From this period onward there crystallized one of the most original aspects of Tintoretto's art, destined later to have decisive importance in the cycle of paintings for the Scuola di S. Rocco.

In light of the paintings for the Scuola della Trinità a better understanding is possible of such works as the *Narcissus* (Rome, Gall. Colonna), to which Wilde (1938), with good reason, likened the *Susanna and the Elders* in Vienna (PL. 78), another of the basic works dating from this phase of Tintoretto's activity. The figure of Susanna is illuminated by a light of crystal clarity and surrounded by a delicacy of details lovingly evoked against an Arcadian background of vernal poesy and freshness. Another painting that can be related to this period is the *Venus and Vulcan* in Munich (Alte Pin.).

In the group of paintings executed in 1553 for the Magistrato del Sale of the Camerlenghi a new direction can be noted. The *St. Louis*, the *St. George and the Princess*, the *St. Andrew and St. Jerome*, and the *Madonna and Child Adored by Four Senators* all reveal a plasticity fully articulated within the close, compact schemes of a manneristic dynamism. This is not a return to earlier tendencies, but an enrichment through new experiments that fructify the earlier ones.

Tintoretto's portrait painting was also in continuous development. The stately portrait of the Soranzo family — the three parts into which this has been divided are in the Castello Sforzesco, Milan — can probably be dated prior to November, 1551. The figures whose appearances Tintoretto sought to capture were aligned on either side of Jacopo Soranzo. The central figure (PL. 77) is superb for the aggressiveness with which the chiaroscuro evokes the physical and moral features of this old man of more than eighty years, giving him the look of one bemused. The three-quarter-view portrait known as *A Young Man Aged Twenty* (formerly New York, Gary Coll.), dated 1551, is close to the *Knight of Malta* in Hampton Court, England (Royal Colls.) and to the *Portrait of a Gentleman* in Oxford (Christ Church Lib.). Among the female portraits also belonging to this period are the *Seated Lady* formerly in the Otto Lanz Collection (Amsterdam, Univ., Kunsthistorisch Inst., on loan from the Dienst voor 's Rijks Verspreide Kunstvoorwerpen), with its waxlike modeling of the lace and embroidery, and the full-face *Portrait of a Lady* in Vienna (Kunsthist. Mus.). The three-quarter-view *Portrait of a Man*, possibly Lorenzo Soranzo, in the same city (Kunsthist. Mus.), is dated 1553; the subject is presented in a monumental architectonic framework that is countervailed by the delicacy of the pictorial relief. Close to this is the *Portrait of a Woman in Black* in Dresden (Gemäldegal.), in which the contrast of the dark, almost black tones of the dress and shawl against the warm complexion and blond hair is resolved in luminous values of flowing softness and of the utmost freshness. Other portraits that date from not later than the mid-1550s are the *Gentleman in a Fur* in Florence (Coll. Contini Bonacossi), the *Portrait of "Carlo II"* in Rome (Gall. Doria Pamphili), and the *Portrait of a Venetian Gentleman* in Dublin (Nat. Gall. of Ireland).

Tintoretto's portraits are very different from those of Titian, in which there is still a Renaissance harmony between man and nature, and man is individualized in all the pride and power of his human and social condition. In Tintoretto such interest flags; he manifests, rather, the need to focus above all on the inward spirituality of his sitters.

It can be said that in the course of a period of fifteen years, from 1539 to about 1554, Tintoretto's artistic personality gradually acquired an individual and well-defined cast that established the premises of all the development that followed. The experiments made during those years were essential to the definition of his style; others were to follow, such as his "Veronesian" phase, stimulated by a passing curiosity, which was not to have any important consequences. Tintoretto gradually

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

came not only to renew from its foundation the idiom of the Venetian tradition but to make of it a receptive instrument for the expression of a visionary and expressionistic fantasy, thus altering the very course of the tradition.

The influence of Veronese, which becomes discernible in 1554/55, is to be found in the great *Crucifixion* for S. Severo and the *Purification of the Virgin* for the Oratorio dei Crociferi, both of which are now in the Accademia, as well as in the *Assumption* in the Jesuit Church of S. Maria Assunta. This was an experiment of short duration, which had the result of separating Tintoretto still further from Titian's tonality. The chromatic orchestration of the *Crucifixion* is akin to Veronese's but the approach to Veronese appears to be more clearly evidenced in the paintings for the Crociferi. The *Assumption* is distinctive for its clear, lucid, and scintillating color, whereas the *Purification* is notable for a perspective scheme that creates an unreal detachment of the grand and imposing foreground figures from those in the background, which are slighter and diminished by the light. The elastic feeling of the spatial relationships grows through the agency of a luminosity that absorbs the reflected color, as in Veronese. Coletti's proposal (1940) to include in this period the ceiling paintings of Old Testament scenes in the Prado, identified by Sánchez Cantón (1952) as the ones acquired by Velázquez for the Spanish royal collection during his second visit to Venice, appears justified. These ceiling panels — *Joseph and Potiphar's Wife* (PL. 81), *The Finding of Moses*, *Susanna and the Elders*, *Judith and Holophernes*, *The Visit of the Queen of Sheba to Solomon*, and *Esther before Ahasuerus* — constitute the most important moment in Venetian mannerism. In them Tintoretto combines a subtle play of color, sparkling with light, modulated in equally subtle linear arabesques. Since these paintings were to be seen from below, Tintoretto gave them the look of weightlessness through the use of open brushwork, so that they retain almost the appearance of sketches in which the effects of improvisation and "non finito" are exploited. Close to the Prado ceiling paintings is the altarpiece with the *Journey of St. Ursula and Her Companions* in the Church of S. Lazzaro dei Mendicanti in Venice (formerly in the Church of the Incurabili): the procession stretches away into an unreal space, and the figures, painted in precious and varied colors, dissolve as they retreat into the background in a diaphanous luminosity. The *Birth of John the Baptist* in Leningrad (The Hermitage) can be related to the above works, both for its chromatic aura and for the grandiose conception of the freely articulated figures.

Whereas in his early works Tintoretto suggested space through rather bare perspective means, in the second half of the 1550s he shifted to constructing scenographic frameworks in which the very crowds of figures, in their choral groupings, accentuate the fabulousness of the space. Among the paintings belonging to this period are the *Moses Striking Water from the Rock* in Frankfurt am Main (Städelsches Kunstinst.), the *Miracle of the Loaves and Fishes* in Florence (Coll. Contini Bonacossi), and a replica of the latter, with numerous variations, in New York (Met. Mus.). In these compositions there is a new "choral" scenic feeling, previously absent from Venetian art: the crowds unwind into the farthest depths of the paintings, fading into the distant atmosphere, in a dynamic tension of the "non finito" — of the sketch — which was to become a salient feature of Tintoretto's later style.

In the sixth decade of the century Tintoretto began his activity for the Church of the Madonna dell'Orto. Mercati (1937) succeeded in tracing the contract, dated Nov. 6, 1551, in which Tintoretto, who had committed himself in 1548 to paint the organ shutters for the church, "with a Presentation (of the Virgin) outside and two figures within," renewed the contract for a payment of thirty ducats, in addition to the amount already received for the original commission. The work was to be completed by Apr. 27, 1552, and the payment was made in installments — in March and November of 1552, in April of 1553, and, finally, in May of 1556. On the outside of the shutters is the *Presentation of the Virgin in the Temple*, on the inside are *St. Peter's Vision of the Cross* and *The Decapitation of St. Paul*. Vasari (1568) admired the *Presentation*, saying that it was "a finished work, and the best-executed and most successful painting" in the church. Coletti (1940) dates the *Presentation* 1552/53, the *St. Peter* and the *St. Paul* 1556. Certainly the two inner panels have a different stylistic character: in the *Presentation* the impression of space is virtually abolished by the steep flight of steps, whereas in the *St. Peter*, beyond the figure of the saint opens an incandescent abyss, partially filled by the Cross, borne by four angels in full flight and boldly foreshortened. Similarly, in the *St. Paul* the unreal light surrounding the angel in headlong flight seems to burst into an illuminated space. Once more, color yields to a luminosity that is transcendent and visionary rather than natural.

The circumstances that accompanied the execution of the organ shutters for the Church of S. Maria del Giglio were similar (Lorenzetti, 1938); according to the initial contract, Tintoretto was to deliver them in 1552, but in 1557 they had not even been begun. Tintoretto was then given an extremely limited time in which to fulfill the contract. On the outside of the shutters he painted a Conversion of St. Paul (now lost; this work was sharply criticized by Vasari) and on the inside the Four Evangelists: SS. Mark and John in one panel and SS. Luke and Matthew in the other, intently writing the Gospels and fantastically seated on dark clouds (PL. 82). The colors are reduced to a bare minimum of values. Tintoretto seems here to anticipate the painterly sensibility of the 17th-century Spanish painters and of the early Manet.

Thus continues the violent, impetuous, seemingly careless mode of setting the scene, enveloping it in a romantic pathos that communicates itself to the viewer, making him share this emotional climate. Tintoretto's conception of space is dynamic; no longer static like that of the Renaissance, his space opens out in all directions, creating the void. As has been justly observed by Rudrauf (1956), Tintoretto's spatial effects are founded on the "sensation de vertige" — that is, on a sense of falling forward, almost precipitously, and of equally swift ascent. Contortion, inversion, foreshortening, the elements of the mannerist syntax of form, impart to the figures a restlessness that accentuates the mobility of his dynamic space.

This aggressiveness of Tintoretto's painting reaches its height in the *Pool of Bethesda* in the Church of S. Rocco, painted in 1559. The *mise en scène* of the episode of Christ healing the sick is one of unprecedented descriptive power. Within a compressed space, the cross-beamed vault, seen in foreshortening, seems to weigh down on and stifle the swarming crowd. Another painting dated 1559, unfortunately in a poor state of preservation, is the *Last Supper* in the Church of St-François-Xavier, Paris, painted for the Scuola del Sacramento of the Church of S. Felice in Venice. The *Deposition* in the Accademia, formerly in the Church of S. Maria dell'Umiltà, reveals the same stylistic qualities as the *Pool of Bethesda* but has a more violent chiaroscuro. More free and luminous than the *Pool of Bethesda* — as, after all, befits the subject — is the *Discovery of the True Cross* in S. Maria Mater Domini (painted for the Scuola del Santissimo, founded 1561), in which certain schemes of mannerist elegance seem to have been revived. Alongside of and contrasting with the idealized figures are some penetrating portraits. There is a tradition (Tietze, 1948) that the *Marriage at Cana* painted for the Refettorio dei Crociferi and now in the Church of S. Maria della Salute bore the date 1561. The setting appears to be rendered according to the perspective methods contrived in the Renaissance; but the result is essentially different in that the space is accentuated, almost multiplied, by the double vanishing point shifted to the left, so that the whole composition appears to center on a prodigious perspective scheme. Besides the large compositions, Tintoretto naturally painted others of smaller format and hence in a slightly different spirit, with greater attention to the rendering of detail. Probably from this period is the *St. George and the Dragon* (London, Nat. Gall.), which can definitely be identified with the canvas in the Casa Correr mentioned by Boschini (1660).

The beginning of the 1560s saw Tintoretto resuming his work for the Church of the Madonna dell'Orto, in which he decorated the choir. Besides the Virtues in the divisions of the apse, he painted two immense canvases: *The Law and the*

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Golden Calf and *The Last Judgment*. Ridolfi considered these to be youthful works, but the dating of about 1562–63 suggested by L. Coletti (1940) seems more likely. In the first painting the iconographical motifs of Moses receiving the Commandments and the Adoration of the Golden Calf are combined, in the second those of the Last Judgment and the Deluge. Evident in the compositional scheme of the *Last Judgment* are echoes of Michelangelo's Sistine fresco and of Titian's *Triumph of the Trinity* in the Prado, which in no way diminish Tintoretto's originality.

The desire to create an expanding space that stretches deep into the distance in such a way as to invest the event with almost haunting tension is also apparent in the paintings executed after 1562 for the Scuola di S. Marco: *The Finding of the Body of St. Mark* (PL. 83), and *The Translation of the Body of St. Mark* and *St. Mark Rescuing a Saracen from Shipwreck* (Venice, Accademia). On June 21, 1562, the philosopher-doctor Tommaso Rangone of Ravenna, Grand Guardian of the Scuola di S. Marco, asked the plenary assembly to allow him to commission at his own expense the painting of "three pictures of the miracles of our most holy protector St. Mark" (Paoletti, 1929). The canvases by Tintoretto were completed in 1566, the year in which Vasari saw them. In the *Finding of the Body of St. Mark* the sense of the miracle is conveyed by the incandescent lighting of the portico, whose perspective recession intensifies the dynamic impact of the violent chiaroscuro. The *Finding of the Body of St. Mark* was sent to Milan, and the two other canvases underwent various alterations and restorations after the suppression of the Scuola. As can be seen from the engraving by Andrea Zucchi, the *Translation of the Body of St. Mark* was cut on the left and enlarged above and below by the addition of two strips. The cleaning of the picture in 1959 brought to light the pile of wood and a small fleeing figure. The storm that rends the sky, outlining the clouds with light, is the protagonist of the composition, which plays on the contrast between the plastically treated group in the foreground and the farthest planes, where figures and phantoms are evoked as if by sorcery. The third canvas, representing St. Mark saving the Saracen from shipwreck, was also altered by repaintings that modified its luministic impact.

A theme that Tintoretto was increasingly drawn to and explored more and more deeply was the Last Supper. He painted for the Cappella del Sacramento of the Church of S. Trovaso, as he had earlier for the Church of S. Marcuola, a *Christ Washing His Disciples' Feet* (London, Nat. Gall.), which was a pendant to the *Last Supper* painted for S. Trovaso and still *in situ* (PL. 81). Both paintings are datable to the first half of the 1560s. Whereas in the *Christ Washing His Disciples' Feet* (which has been cut at the top) Tintoretto undertook a closed and dramatic chiaroscuro setting, in the *Last Supper* the dynamic space is enhanced by the obliquely placed table, which seems to give a rotary motion to the succession of figures shaped by the light. A popular taste characterizes the *Last Supper* in S. Trovaso: bits of a realism new to Venetian art make their appearance (the rush-bottomed chairs, the still life on the table, etc.). But there is no lack — almost in opposition to this naturalism — of elements of haunting fantasy, such as the small figures in the portico and the woman spinning on the stairs.

Tintoretto was now painting without respite. He had at his command the utmost technical skill, but it was necessary for what A. M. Zanetti (1771) aptly termed his "furioso entusiasmo" to break the deadlock of mere virtuosity before his work could be fully realized in all its artistic power.

In May, 1564, thirty-seven councilors of the Scuola di S. Rocco decided to have the ceiling of the Sala dell'Albergo painted at their own expense. On May 31 it was decided that three or four of the best painters of the day should compete for the commission. Three weeks later Tintoretto offered his oval painting as a gift and, after having put the canvas in place, declared himself ready to execute the other paintings. Vasari's story, though somewhat romanticized, is borne out by the documents. In the central oval of the ceiling is *The Glorification of St. Roch*, which is surrounded by allegorical figures. On the end wall Tintoretto placed the immense *Crucifixion*, dated 1565 (PL. 86). The novel aspect of this particular application of Tintoretto's thematic idiom consists in the organization of space so as to make the Christ on the Cross the central idea around which the whole composition revolves. Three other large canvases line the entrance wall: on the left of the door, the *Christ before Pilate*, one of the most evocative of this series; over the door, the *Ecce Homo*; and to the right, the *Christ on the Way to Calvary*. The *Crucifixion* was paid for by the council of the Scuola; a second payment, dated November, 1565, probably relates to the other canvases, which were apparently completed by 1567.

During the years that Tintoretto was working on the large canvases for the Scuola di S. Rocco he was also engaged on other works. In 1565 he executed the *Resurrection* for the high altar of the Church of S. Cassiano, in 1566/67 the *Last Judgment* (destroyed in the fire of 1577) for the Sala del Scrutinio of the Doges' Palace, and in 1566, for the same palace, the *Madonna Adored by Three Camerlenghi*, now in the Accademia. Another painting of great dramatic effect, also from 1567, is the *St. Roch in Prison*, painted for the Church of S. Rocco, which has the same horizontal format as the *Pool of Bethesda*, painted for the same church in 1559. The angel visiting the saint is a burst of light in the dark prison, and the scene, made up of a succession of episodes, takes on an almost surrealist tone, which is absent from the earlier painting. A similar tonal atmosphere invests the *Descent of Christ into Limbo* (1568) in the Church of S. Cassiano, which centers on the explosive movement of the figure of Christ; passages of powerful realism, such as the portraits of the donors, contrast with pure mannerism, as in the heads of the old men mysteriously shaped by light. The *Crucifixion* (1568) in the same church, painted as a pendant to the *Descent of Christ into Limbo*, has a bold compositional scheme, owing to the three slanting crosspieces and the very low line of the horizon to the right. Another undertaking that was to occupy not a little of the artist's time was the execution of the cartoons for the mosaics of St. Mark's, the first of which date from 1568. The *Last Supper* executed for the Church of S. Polo postdates that painted for S. Trovaso by a few years; profoundly different, it is almost freer than the other in the tempestuousness of the painting, which is characterized by superb passages, especially in the landscape.

The importance of Tintoretto's portrait painting in a survey of his activity has been suggested. The evocative *Portrait of a Gentleman with a Gold Chain* (Prado) has rightly been assigned by Von der Bercken (1942) to the period 1556–60. Shown as though caught by surprise, with the suggestion of a sudden movement of the head, the subject is turned toward the viewer, so that his features, modeled in masterly fashion, are presented to the light. Perhaps also datable to the late 1550s is the haunting portrait of Vincenzo Zeno (Florence, Pitti), shown beside a window through which the last rays of the setting sun are seen flickering over the lagoon. The portrait of Giovanni Paolo Cornaro Hermolai (Ghent, Mus. B. A.) is dated 1561, and the presumed portrait of the procurator Andrea Cappello (Venice, Accademia) dates from no later than 1564. The depiction of Alvise Cornaro (Florence, Pitti) seated in three-quarter view is datable toward the middle of the 1550s. The bust-length portrait of Sansovino (Uffizi) is probably a 1566 work. Between 1567 and 1570 Tintoretto painted the three-quarter-length portrait of Doge Pietro Loredan (New York, Estate of J. R. Delafield), of which there are other versions in Melbourne (Nat. Gall. of Victoria) and Budapest (Mus. of Fine Arts). Tintoretto was gradually supplanting Titian in the painting of court portraits, and characteristically the old Doge is caught in a pose entirely free of stiffness, almost as though he were ready to converse with the viewer. The portrait of Andrea Barbarigo (Richmond, Va., Virginia Mus. of Fine Arts) is dated 1569, and the *St. Mark with Three Procurators* (Berlin, Mus. in Dahlem) can be placed at about 1571. The portrait of Doge Alvise Mocenigo, originally in the Procuratie de Ultra and now in the Accademia, was executed in the latter half of the year 1570, and that of Gabriele Emo, Procurator of St. Mark's (Seattle, Art Mus., Kress Coll.), bears the date 1572. A little later (ca. 1573) Tintoretto executed the large votive painting

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Doge Alvise Mocenigo and Family before the Madonna and Child (Washington, Nat. Gall., Kress Coll.), in which the Doge, his wife Loredana, his brother Giovanni, Giovanni's sons Tommaso and Alvise, and two of Giovanni's grandchildren are grouped symmetrically on either side of the Madonna and Child. In choosing such an arrangement Tintoretto seemed to want to give the group an iconic character, while avoiding any old-fashioned suggestion of the hieratic. The vision of the Madonna and Child is felt as a presence amid the group, who do not turn toward her but look out of the picture, so that the scene takes on an air of almost affectionate familiarity. The most lifelike touches are the portraits of the two young men, Tommaso and Alvise, with their contrite demeanor. This painting epitomizes that transformation of Tintoretto's portraiture which brings his personages, even when attired in accordance with their rank, so close to the modern sensibility.

In Tintoretto's subsequent portraits, throughout the 1570s, the search for spiritual characterization intensified. A series of portraits of old men, including the *Bearded Man with a Fur* (Vienna, Kunsthist. Mus.), the *Portrait of a Venetian Senator* (Prado), and another portrait of the same subject (formerly Richmond, Surrey, Cook Coll.), seems to evoke the twilight of the Venetian civilization of the 16th century.

Discernible in the series of five philosophers painted in 1571/72 for the Libreria Marciano — in the graceful rhythm of the figures — is a mannerist reprise, which also accounts for the refined draftsmanship of the *Christ in the House of Martha and Mary* of the previous decade, painted for the Dominikanerkirche in Augsburg (PL. 84).

The importance of the landscape in the above-mentioned votive painting of Doge Alvise Mocenigo and his family should be mentioned. Such passages are not uncommon in this particular phase of Tintoretto's activity — suffice it to mention the landscape seen beyond a ruined arch at the foot of Golgotha in the *Resurrection with Portraits of Ottaviano Valerio, Francesco Pisani, and Michele Bon* in the Doges' Palace (ca. 1571); the splendid alpine scene that forms the setting of the *Madonna Appearing to St. Jerome* (Venice, Accademia), dated 1570–76 by Von der Bercken (1942); and the evocative background of the *Madonna and Child* in San Francisco (Calif. Palace of the Legion of Honor). Other paintings that can be assigned to the period 1570–75 are the *Madonna in Glory* (Florence, Pitti), the *Madonna Appearing to the Evangelists Luke and Mark* (Berlin, Mus. in Dahlem), and a votive altarpiece, *The Cornaro Family Adoring the Virgin* (Edinburgh, Nat. Gall. of Scotland).

In 1576 Tintoretto returned with renewed zeal to the decoration of the Scuola di S. Rocco. It had been decided in 1574 to renew the ceiling of the large upper hall, and in 1575 Tintoretto was asked to provide "the central panel"; this painting, *The Erection of the Brazen Serpent*, was completed on Aug. 16, 1576. On Jan. 15, 1577, Tintoretto offered to paint two other canvases for the ceiling: *The Gathering of the Manna* and *Moses Striking the Rock*. On March 22 of the same year Tintoretto promised to paint the rest of the ceiling, namely the ten oval and eight rhomboid chiaroscuro panels (repainted by Giuseppe Angeli in the 18th century). On November 27 he decided to amplify the original program and promised to supply the ten paintings for the walls and the altarpiece. All were completed by September, 1581, except the altarpiece, which was delivered in 1588. Tolnay (1960) says of the decoration of this hall that "it consisted in the unfolding and amplification of a central idea, as opposed to the illustration of a program systematically elaborated from the start." The large rectangular central painting, *The Erection of the Brazen Serpent*, contains in embryo the entire decorative program for the hall, which was later developed into a cycle depicting the miráculous salvation and healing of suffering humanity. The Old Testament scenes depicted in the ovals are logically linked to the main paintings in an intricate network of allusions that also comprehends the paintings on the walls.

Compared with the Sala dell'Albergo, where the composition has a precise spatial definition and the color an outstanding richness of Venetian values, the large upper hall shows a reduction of the colorism in a much more emphatic chiaroscuro. The movement is more convulsive, and it pleased Tintoretto's fancy here to evoke dramatic scenes positioned in a multiplicity of spaces and dissolved in vortices of light. The canvases on the walls, which deal with the life of Christ, are, starting from the left on the wall opposite the entrance, *The Nativity* (PL. 87), *The Baptism of Christ*, *The Resurrection*, *The Agony in the Garden*, and *The Last Supper* (XII, PL. 93); on the opposite wall are *The Miracle of the Loaves and Fishes*, *The Raising of Lazarus*, *The Ascension*, *The Pool of Bethesda*, and *The Temptation of Christ*. For inspired imagination and poetic spirit these scenes are among the most sublime of Tintoretto's career. In the *Nativity* he aims at an instantaneity of movement combined with a multiplicity of scenes, separating the work into two superimposed planes. The *Baptism of Christ* — through its incredible atmosphere, flashing with lights, in which the crowd winds along the banks of the Jordan — breathes an exalted lyric inspiration. More prosaic compared to these, the *Last Supper* is set in an obsessive perspective scheme that serves to enhance the dramatic rhythm. The *Ascension* remains one of the most spontaneous and visionary scenes that Tintoretto conceived, with its effects of perspective reversal, in which Christ, ascending into the heavens, borne by angels whose wings slash the shadowed spaces with saber cuts of light, seems to advance toward the viewer, while on the ground in the distance two Apostles, of scarcely corporeal substance, are conjured up in incandescent filaments of light.

Earlier, in the *Raising of Lazarus* in the Katherinenkirche, in Lübeck, signed and dated 1576, boldly perspective compositional motifs are introduced, so that the figures appear to mount into space; just such motifs occur in the large canvases of the upper hall of the Scuola di S. Rocco — for instance, in the moving *Temptation of Christ*. In the *Temptation of St. Anthony* (1577) in the Church of S. Trovaso there is a return to the motif of a concentric movement that pivots on a central axis. Possibly slightly later in date is the *Capture of St. Roch* in the Church of S. Rocco; only the "furioso entusiasmo" of Tintoretto could have left the imprint of such a vigorous imagination on the scene of the saint taken prisoner at the gates of his native town, Montpellier, while the battle rages. The subject seems to have involved the artist emotionally, arousing his creative enthusiasm; when, on the contrary, the motivation of a subject in the popular or romantic vein is lacking, Tintoretto's style grows more subdued, being embodied in compositions tending toward the structural and the plastic. Thus some of Tintoretto's works are imbued with conventional feeling and weighed down by an academic polish, however much veiled by clever and prestigious mannerist devices. The four secular allegories (*Ariadne, Bacchus, and Venus*; *Pallas Athene and Mars*; *Mercury and the Three Graces*; and *The Forge of Vulcan*) completed in 1577 for the Sala dell'Anticollegio of the Doges' Palace, the *Moon and the Hours* (formerly Berlin, Staat. Mus.; destroyed) of 1580 or a little later, and the *Allegory of Music* (PL. 85) are all fairly typical examples of this tendency. The *Origin of the Milky Way* (London, Nat. Gall.), with its brilliantly luminous space, also belongs to this phase. Probably executed shortly before 1579 and in 1579/80, respectively, were the two cycles of the eight Gonzaga *Fasti* in Munich (Alte Pin.). Commissioned by Guglielmo Gonzaga, these complex battle scenes, structured by perspective networks that multiply in an expanding space, are painted with great skill, particularly in the light-blurred backgrounds. It is natural that Tintoretto should have had assistance from his workshop — though hardly from Pozzoserrato, as suggested by Coletti (1941) — in this series of canvases, which follow a precise commemorative program. The group of works in the Church of S. Stefano (formerly in S. Margherita) — *The Last Supper*, *Christ Washing the Feet of the Apostles*, and *The Agony in the Garden* — is related from the point of view of iconography to the compositions for the large upper hall of the Scuola di S. Rocco.

Tintoretto's activity in the eighth and ninth decades of the century was continuously on the increase. Judged by the proportions of the canvases, his working capacity was astonishing. But it is evident that it was only with the aid of his workshop that he was able to bring all these works to completion. Cer-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tainly his sons helped him, starting with Domenico, who by 1577 was Sindaco of the Scuola dei Pittori. Ridolfi (1642) affirms that about 1588 Domenico worked with his father on the *Paradise* for the Doges' Palace; Marietta could also have been of assistance, as could his son Marco (whose stylistic traits are difficult, if not impossible, to establish). Other artists who probably collaborated with Tintoretto were Antonio Vasilacchi (Aliense), Andrea Vicentino, Paolo Fiammingo (particularly in the landscape backgrounds), and Lambert Sustris (who imitated his style of portraiture).

Tintoretto's works for the Doges' Palace cannot be considered particularly successful, since they are for the most part burdened by an extraneous narrative requirement. In these terms Tintoretto appears to have been responsible for a certain illustrative and commemorative style that brought on a crisis in Venetian painting in the last quarter of the century, when La Serenissima (the Venetian Republic), after the Battle of Lepanto and the fire of 1577, was moved to decorate some of the rooms of the Doges' Palace with paintings exalting her political and religious triumphs. Between 1578 and 1581 Tintoretto painted on the ceiling of the Sala delle Quattro Porte the circular fresco *Juno Bestowing the Peacock on Venice* and four medallions with allegorical figures. In a number of paintings the preponderant intervention of collaborators diminished the vitality of Tintoretto's structural foundations. To be numbered among such works are the series of votive paintings with the doges Andrea Gritti, Francesco Donato, Nicolò da Ponte, and Alvise Mocenigo (the *modello*, or preliminary sketch, for this last is the *Doge Alvise Mocenigo Presented to the Redeemer*, an unfinished painting of high quality in the Metropolitan Museum, New York). These votive works were painted for the Sala del Collegio between 1581 and 1584 to replace those destroyed in 1577. Also in this category are the ceiling panel *The Triumph of Venice as Queen of the Seas*, datable between 1581 and 1584, and the two large canvases *The Dead Christ Adored by the Doges Lando and Trevisan* and *Doge Loredan before the Virgin*, all in the Sala del Senato; the ceiling panels *The Defense of Brescia*, *The Battle near Riva*, and *The Battles of Argenta and Gallipoli*, painted for the Sala del Maggior Consiglio before 1584; the ceiling panel *The Triumph of Doge Nicolò da Ponte*, painted for the Sala del Maggior Consiglio, and *The Battle of Zara*, painted for the Sala dello Scrutinio, both before 1585; and, finally, the canvas *The Venetian Ambassadors before Barbarossa*, painted for the Sala del Maggior Consiglio between 1584 and 1587. Another circumstance to be borne in mind in connection with the works in the Doges' Palace is the lack of discrimination of restorers, which has left its systematic and deplorable mark. The enormous *Paradise*, which was superimposed on a fresco by Guariento (ruined by the fire of 1577) in the Sala del Maggior Consiglio, has a compositional scheme of vast scope, but the cleaning carried out in 1941 has clearly revealed a discontinuity in its figural fabric, attributable to intervention of more than one hand. The idea of encircling Christ and the Madonna with a rosette of colors, which stand out from the firmament in their continuous alternation of luminous contrasts, is one that creates a splendid effect. The *modello* in the Louvre — a document of exceptional pictorial freshness — was presented for the competition held in 1579, two years after the fire that destroyed the decoration of the Sala. The large canvas, begun after that year, was painted in sections at the Scuola della Misericordia, as Ridolfi testifies; it must have been completed by 1587, the year in which G. Bardi erroneously attributed it to Veronese and Bassano.

The *Battle on Land and Sea* ("The Rape of Helen"; PL. 85), though reminiscent of the schemes of the Gonzaga *Fasti* and of the battle scenes in the Doges' Palace, recalls the atmosphere of the paintings of the ground-floor hall of the Scuola di S. Rocco. The subject, pictured in the middle distance with brushwork of the utmost boldness, is the start of a battle fought on land and sea with savage fury. In these last years the idiom of Tintoretto actually attained new heights, involved as it was in a pursuit that created the most visionary and expressionistic facet of 16th-century Venetian art. It must be acknowledged that Tintoretto dedicated the best of himself to the Scuola di S. Rocco, jealously excluding collaboration except in minor parts. In the large canvases executed for the lower hall between the latter half of 1583 and August, 1587, Tintoretto still had something new to say: volume and color appear understated; the figures become incorporeal, disembodied beings improvised by the imagination; light dominates in its most lyric aspect, dissolving the color in flashes of diaphanous brushstrokes; and space is amplified in a succession of limitless perspectives. Boschini (1660) called the *Adoration of the Magi* "un gran concerto"; each compositional element is indeed subordinated to the musical effect of the contrasts of shadow and light, down to the fantastic apparition of the procession of the Magi. In the *Flight into Egypt* (PL. 88) the landscape predominates: the group of figures appears to come out of the scene (depicted in an elastic space), leaving behind a marvelous landscape seen through wings of foliage and palm trees, shimmering in the incandescent light of sunset. Here the landscape is truly the projection of an emotion. In the *Massacre of the Innocents* a profoundly dramatic inspiration animates the convulsive, rotating brushwork, creating one of the most anguished and haunting scenes in Italian painting. Two gems of the ground-floor hall are the *St. Mary Magdalen* and the *St. Mary of Egypt* (XII, PL. 372), in which the small figures lost in vast landscapes, the tree trunks, the streams of water, the contours of the hills, and the cottages are alight with reflections and glimmerings; things breathe a fantastic life of their own in an atmosphere of hazy incandescence.

According to Tolnay (1960), Tintoretto's cycle of paintings in the Scuola di S. Rocco may be considered the most representative work of the "Catholic reformation" — not the reformation imposed from above, but that which was nourished by a feeling deeply rooted in the popular sentiment. The miraculous element that Tintoretto introduced into his compositions in S. Rocco was also fundamentally related to the stylistic and visionary trends of mannerism.

The last works of Tintoretto do not reach the expressive fullness and absoluteness of those of the ground-floor hall of S. Rocco. In the six scenes from the life of St. Catherine (restored) in the Venetian Church of S. Caterina the extraordinary rapidity of composition is not translated into rigorously coherent terms, possibly on account of the participation of the workshop. The better paintings are certainly the *Capture of St. Catherine* and the *Martyrdom of St. Catherine* (PL. 88), in which the imagination of the artist bursts forth in all its expressionistic violence.

Probably works of the latter half of the 1580s are the *St. Michael Slaying the Dragon* (Dresden, Gemäldegal.), the *Flagellation of Christ* (Vienna, Kunsthist. Mus.), the *Martyrdom of St. Lawrence* (Oxford, Christ Church Lib.), and the *Samson and Delilah* (Derbyshire, Eng., Trustees of the Chatsworth Settlement). Tintoretto's son Domenico has been thought of in connection with certain of these works, but their quality rules this out. However, there is no doubt that the hand of Domenico predominates in the *Adoration of the Magi* and the *Expulsion of Joachim from the Temple* in the Church of S. Trovaso. Certainly more notable in their spatial and luministic premises are the grandiose canvases of the presbytery of S. Giorgio Maggiore (under construction in 1589), which were completed in 1594 (and paid for with the sum of 180 ducats). In the *Last Supper* two separate streams of light divide the huge bare room in which Christ is intent on administering communion to the Apostles; a real light is diffused by the lamp, striking the figures from behind, while around the head of Christ radiates a phantasmal refulgence, and it seems almost as if the angels descending from above are of the same luminous stuff. The everyday realism, with its almost commonplace flavor, is transfigured by the contrast of this double light in an almost expressionistic manner. Similarly, in the *Entombment* in the chapel of the same church, for which Tintoretto was paid 70 ducats in 1594, this twofold luminism — the natural light of the sunset on the horizon and the phantasmal light striking the figures — emphasizes the positioning of the groups in the fragmented space. This may be considered the last work painted by Tintoretto.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

As is well-known, Tintoretto's graphic works, of which about a hundred examples survive, are fundamental to an understanding of his art. With rare exceptions, he left no comprehensive studies for his compositions. He was in the habit, as has been said, of preparing the imagined situation by means of artificially illuminated little stages peopled by wax figurines; then he would concentrate on studying the individual figure, mostly from the model, placing it in the most varied attitudes, according to the compositional necessities suggested by the prearranged scenic invention. These drawings consequently bear the stamp of intimate and personal exploration; transcribing his immediate impressions of reality, Tintoretto was able to impart to them a poignant freshness of expression (IV, PL. 277). Only his mannerist training, of which we have followed the early development, could have enabled the Venetian painter to overcome all restricting naturalism. It was Von Hadeln (1921, 1922) who grouped together some early drawings of sculptural groups and antique and contemporary casts, to which a few others have since been added. In this numerous and homogeneous group of drawings — some of which are devoted to the same statue as seen from different angles — the drawing of the piece is not an end in itself, that is, a lifeless classicist performance, but the occasion for originating lively chiaroscuro effects. The choice of sculpture as models — whether Michelangelesque casts or antique and modern sculptural groups, complexes of attitude and movement — demonstrates a distinct tendency toward figural elements of mannerist construction. These "conglomerates," as Von Hadeln (1922) calls them, whose complex and tormented plasticity is additionally subjected to violent illumination, must have been highly significant in the formation of the young artist's style. A thick black chalk stroke, curved and hammered, delimits the forms in a contour that emerges broken, disconnected, and blurred.

Most of these drawings, after casts and statues, can be placed in the latter half of the 1540s. From the first years of the 1550s Tintoretto made more varied use of the graphic medium, both in drawing directly from the life models, as would seem to be proved by the study in the Louvre (Cab. des Dessins) for the *Susanna and the Elders* in the same museum, and in drawing studies for entire compositions, such as the one in Berlin (Kupferstichkabinett) for the *Vulcan and Venus* in Munich (Alte Pin.). From these more closed and heavy exercises in form the artist passed on to the realistic rendering of motion suspended in mid-air, caught unfolding in an articulated course of action, with a synthesis that in modern times only Degas succeeded in rediscovering. Tintoretto's drawing, straining to capture the muscular tension of the human figure in space, does not seem to be related to his time in its striving after mannerist abstraction. The drawings of the last decades are wanting in chiaroscuro, becoming progressively reduced to open and broken contours.

The agreement and disagreement among contemporaneous critics regarding the young Tintoretto has already been touched on. All later historians, from Vasari onward, have picked up the critical cue contained in the above-mentioned letters of Aretino (1545, 1548), which serves as a positive or a negative argument according to the perspective of taste. Francesco Sansovino (1556) developed a similar theme with more conviction, characterizing Tintoretto's temperament as tumultuous and romantic. Apparently for a Tuscan like Vasari, even more than for Aretino, who had settled in Venice, Tintoretto's art was difficult to understand. But, although Vasari did not take in the originality of Tintoretto's painterly luminism, he gave evidence of sensing his expressionistic tension when, almost despite himself, he allowed this statement to escape him: "In painting, however, he showed himself eccentric, fanciful, quick and resolute. He possessed the most stupendous brain that painting has ever known. . . ." The position of Borghini (1584) in regard to Tintoretto is noteworthy, since he was able to define two component elements in the formation of the artist: the study of Tuscan formal elements and the recognition of the validity of the Venetian pictorial tradition, especially that of Titian. The Veronese critic Cristoforo Sorte (1580) was aware that Tintoretto's rapidity arose not from poor technique but from particular spiritual attitudes, which expressed themselves in luministic effects. Lomazzo (1584, 1590) saw in Tintoretto not only "l'uomo raro nell'universale armonia del disegno" but also the painter of light, in love with backgrounds dazzling in their brightness, and the portrait painter of eternal fame.

Art historians of the 17th century present a more lively critical understanding of Tintoretto, owing especially to the two Venetians Carlo Ridolfi and Marco Boschini. Ridolfi's unbounded admiration was not, unfortunately, founded on critical grounds, and the interest of his biography of Tintoretto, published in 1642 and later included in his work *Le maraviglie dell'arte* (1648), is purely historical. However, there is no lack of remarkable sallies: "His brush was a thunderbolt that struck terror into all with its flash." Also interesting is the objection that he felt himself bound to express before so vast a production: "He often abused so great a talent, devoting himself to painting in every style." Quite differently motivated is the enthusiasm of Boschini. His anti-Vasarian attitude is well known, and his defense of Tintoretto is therefore, in a certain sense, to be discounted *a priori*. But Tintoretto was for Boschini something else: he was perhaps the Venetian painter closest to his heart, precisely because he felt him to be so close to his own exalted baroque sensibility. In *La carta del navegar pitoresco* (1660), with an altogether direct critical judgment before Tintoretto's works, Boschini threw into relief their salient stylistic characteristics. With a few strokes, in words not devoid of baroque conceits and sometimes of an effective *vis poetica*, he emphasized Tintoretto's inventive power, his luminism, and his rapid touch. In *Le ricche minere* (1674) Boschini praised Tintoretto as the painter who had an "assoluto dominio della Arte." An interesting observation was made by De los Santos (1657) in regard to the *Christ Washing the Feet of the Apostles* (PL. 79), then in the Escorial; in pointing out the spatiality, he noted that the color and perspective scheme "give the impression that air is circulating between the figures." In France, Félibien (1666) spoke of Tintoretto without much conviction but not without appropriate comment, such as the remark that he "considered white and black were the two most precious colors that a painter could make use of." But it was R. de Piles (1699) who came closest to the artist, with a critical attitude that could be termed Boschinian. In Tintoretto's style he sensed the importance of movement, realized not so much in the individual attitudes of the figures or in the general compositional effect as in the "grandes glissades" of light and shadow that disentangle themselves as they jostle one another in opposition and are caused by a source presumed to be outside the painting.

Genuine admiration was expressed by Palomino de Castro y Velasco (1715–24): "His paint was laid on with an unequaled boldness. . . . He was fired to great ideas and his extraordinary conception was always accompanied by a great taste for color, with attitudes astonishing in their effect." Cochin (1758) was aware of the grandeur of Tintoretto's works, which were "executed with all his zeal." Earlier, D'Argenville (1745–52) had said, "He is the most fertile genius we have in painting; a large work took him less time to paint than for another to invent." Though Antonio Maria Zanetti occupied an important place in the sequence of Venetian art history, his taste, permeated with classicism, was not the most attuned to the understanding of Tintoretto's genius. He responded, however, to the tumultuous fantasy of the painter and singled out its expressive means as residing in his "outstanding use of light and shadow." Though he had credited the painter with "furioso entusiasmo," he subsequently deplored the fact that this enthusiasm had carried Tintoretto's spirit beyond the limits "della verità e del verosimile." Zanetti expressed other reservations as well about Tintoretto's works, so that his attitude emerges as more negative than positive, and its influence on later art historians was not negligible. Lanzi (1795–96) admired Tintoretto, but his esthetic judgement was obstructed by the current rationalistic and neoclassic taste. For Lanzi, too, Titian remained the unsurpassed model, so that every opinion on Tintoretto was referred to this standard. Mengs (1780) earlier expressed the same judgment, preferring Titian to Paolo Veronese and the latter to Tintoretto.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The return in the 19th century to a taste for works in line with the romantic esthetic might have been expected to arouse more direct support of Tintoretto's art, but this was not the case. Nevertheless, the 19th century exceeded the previous century in the laborious task of salvaging Tintoretto's artistic personality. Rio's emphasis on content (1836) was more an impediment than otherwise to the understanding of the painter, whom he considered to be impetuous, violent, too prolific, and hence irreligious and irreverent. More important was the attitude of Blanc (1868), who although his thinking lacked a coherent base, deserves credit for having approached the painter with freshness of judgment. Gauthier (1875) frankly admired Tintoretto's dramatic ardor, and the admiration of H. Taine (1884) was still more candid. New, too, was the position of Ruskin, who preferred Tintoretto to Michelangelo as a great colorist. For Ruskin, Tintoretto had an intensity of imagination realized in effects of "illuminated color," capable of attaching to the commonest subject a "range of suggestiveness almost limitless." Ruskin's enthusiasm went so far as to cause him to prefer Tintoretto to Titian. Free of any classical or academic bias, Ruskin realized in Tintoretto his own romantic ideal. Berenson (1894) may be said to have followed in Ruskin's path, but with an emphasis on the importance of the artist's Venetian training. Burckhardt (1855), although recognizing certain of Tintoretto's qualities, evidences a deep aversion to the artist: "There is a certain crudeness in him, a barbaric sensibility: even his artistic morality often wavers, so that we see him abandoning himself to the most shameless superficiality." But this judgment is modified when he scrutinizes the individual works. An unprecedented stand is that taken by Wickhoff in connection with his study of the Vienna Genesis (1895), where he cites Tintoretto as one of the most significant exponents of illusionistic painting of modern times. Thode's monograph dedicated to Tintoretto (1901) can be said to complete the long and tortuous course of 19th-century criticism. The first complete study of the artist's work, it has the merit of presenting with clarity the critical problem of the ascendancy of light over form and color; through this new stylistic element Tintoretto achieved "the spiritualization of reality."

In the 20th century the scholarly problem of the reconstruction of Tintoretto's artistic activity proceeds *pari passu* with the critical rehabilitation of his personality. In England, Stoughton Holborn (1907) in his enthusiasm seems to follow Ruskin, and Phillipps (1911) and Osmaston (1915) are not far removed. To modern German historiography goes particular credit for historical and scholarly groundwork in connection with Tintoretto's art; D. von Hadeln, E. von der Bercken, A. L. Mayer, and H. Tietze have made notable contributions in this direction. The critical point of view from which the German scholars start is expressionistic. Von der Bercken and Mayer, in their monograph of 1923, deny that the direction of Tintoretto's vision was naturalistic, stressing its *terribilità* and thus putting the emphasis back on the content of his art.

A new position was that of Max Dvořák, who, in his university courses given at Vienna between 1918 and 1921, declared Tintoretto "next to Michelangelo, the major exponent of Italian mannerism, and his true spiritual successor, despite his Venetian training." Whereas the earlier historiography of art, especially that of Venice, had sought to glorify Tintoretto's Venetian sense of color, Dvořák acclaimed him because by underplaying color he derived from it another principle, that of light, a stylistic means capable of expressing deeply spiritual and religious content. Tietze (1948), on the other hand, developing the thesis of Thode, justly emphasized not only the concept of motion and space but also of theater in the compositions. Vipper (1950–51) sought to interpret Tintoretto's art in its social context; notwithstanding the special perspective of his criticism, he succeeded in bringing into focus the relation between the master's art and the society of his time.

The contribution of Italian criticism in the first half of this century to the study and clarification of Tintoretto's artistic personality has been substantial. Still a fundamental work, Pittaluga's monograph (1925), taking up Thode's concept, asserts that Tintoretto had renounced his purpose of reconciling Michelangelesque form and Titianesque color, aspiring rather to "fuse the two principles one into the other, altering and transforming them to achieve a synthesis. The means of the fusion was light." Through this luministic factor Pittaluga explained the rapidity of Tintoretto's vision, from which in turn the effect of motion was derived. Also fundamental is Coletti's critical study (1940), which, following the artist's adventurous stylistic career, seeks to define his painterly, poetic, and human values. Coletti, starting from Dvořák's insight, established in precise terms the effect of the mannerist culture on the formation of Tintoretto, a thesis taken up again and fully developed by others (e.g., Pallucchini, 1950). Longhi (1946) is restrained in his appraisal of Tintoretto's works. He does not deny him "a nature touched with genius, overflowing from the beginning with the most beautiful ideas for dramatic tales that unfold within a setting of rapidly shifting shadows and lights"; but he expresses reservations on the programmatic way in which Tintoretto realized these ideas, resolved as they were on a level of ever-increasing virtuosity, and he concludes that "the most living phase of Tintoretto's art, precisely because it is the least *furioso*, is that of his youthful experimentation." Both Arcangeli, in a special study on Tintoretto (1955), and Chastel, in his outline of Italian art (1956), definitely include the figure of Tintoretto in the phenomenon of mannerism, thus agreeing with the thesis of Coletti and Pallucchini. In another work of 1956, Sypher makes a contribution to the comprehension of mannerism, centering on Tintoretto a whole series of keen observations, both on his style and on the relation of his style to his time.

Art history has traversed an arduous path to reach an understanding, or rather a bringing into focus, of the complex world of Tintoretto. The relativity of taste has conditioned its interpretation; but by taking into account these varied and often contradictory attitudes it is possible to arrive at a more informed evaluation and to obtain a clearer image, in all its problematical profundity, of the personality of one of the greatest and most significant figures of modern European painting.

SOURCES. P. Aretino, letters of February, 1545 and April, 1548 to Tintoretto, letter of January, 1549 to Domenico Boccamazza, in Lettere sull'arte di Pietro Aretino (ed. E. Camesasca), II, Milan, 1957, III, Milan, 1960 (commentary by F. Pertile); A. Calmo, Il rimanente de le piacevoli et ingeniose littere indirizzate a diversi con bellissime argutie, Venice, 1548 (ed. V. Rossi, Turin, 1884); P. Pino, Dialogo di pittura, Venice, 1548 (ed. R. and A. Pallucchini, Venice, 1946); M. Biondo, Della nobilissima pittura, Venice, 1549; A. F. Doni, Disegno, Venice, 1549; O. Lando, Sette libri de cathaloghi . . ., Venice, 1552; A. F. Doni, Inferni . . ., Libro secondo dei mondi, Venice, 1553; A. Guisconi (pseud. of F. Sansovino), Tutte le cose notabili e belle che sono in Venetia, Venice, 1556 (and successive eds.); L. Dolce, Dialogo della pittura intitolato l'Aretino, Venice, 1557; Vasari, VI, Vita di B. Franco; C. Sorte, Osservationi nella pittura, Venice, 1580; F. Sansovino, Venetia città nobilissima et singolare, Venice, 1581 (rev. ed., G. Stringa, Venice, 1603); R. Borghini, Il Riposo, Florence, 1584; G. P. Lomazzo, Trattato dell'arte della pittura, scoltura et architettura, 7 vols., Milan, 1584; G. B. Armenini, De'veri precetti della pittura, Ravenna, 1587; G. Bardi, Dichiarazione di tutte le istorie che si contengono nella Sala dello Scrutinio e del Gran Consiglio del Palagio Ducale, Venice, 1587; G. P. Lomazzo, Idea del Tempio della Pittura, Milan, 1590; P. J. de Sigüenza, Historia de la Orden de San Jerónimo, II, Madrid, 1600; C. Ridolfi, La vita di Giacopo Robusti detto il Tintoretto, Venice, 1642; C. Ridolfi, Le maraviglie dell'arte, 2 vols., Venice, 1648 (rev. ed., D. von Hadeln, 2 vols., Berlin, 1914–24); F. De los Santos, Descripción del Monasterio de San Lorenzo el Real, Madrid, 1657; F. Scannelli, Il microcosmo della pittura, Cesena, 1657; M. Boschini, La carta del navegar pitoresco, Venice, 1660; M. Boschini, Le minere della pittura, Venice, 1664; A. Félibien, Entretiens sur les vies et sur les ouvrages des plus excellens peintres, anciens et modernes, 5 vols., Paris, 1666–88; M. Boschini, Le ricche minere della pittura veneziana, Venice, 1674; L. Scaramuccia, Le finezze dei pinelli italiani, Pavia, 1674; J. von Sandrart, Teutsche Academie der edlen Bau-, Bild-, und Mahlerey-Künste, 2 vols., Nürnberg, Frankfurt am Main, 1675–79; R. de Piles, Abrégé de la vie des peintres, Paris, 1699; A. Palomino de Castro y Velasco, El museo pictórico y escala óptica, 2 vols., Madrid, 1715–24 (repr., 1 vol., Madrid, 1947).

BIBLIOG. A. J. d'Argenville, Abrégé de la vie des plus fameux peintres, 3 vols., Paris, 1745–52; C. N. Cochin, Voyage pittoresque d'Italie, 3 vols, Paris, 1758; A. M. Zanetti, Varie pitture a fresco de' principali maestri veneziani, Venice, 1760; A. M. Zanetti, Della pittura veneziana . . ., Venice, 1771 (2d ed., 2 vols., 1792); A. R. Mengs, Opere, Parma, 1780 (1st complete ed., G. N. D'Azara, Bassano, 1783); L. Lanzi, Storia pittorica dell'Italia . . ., 2d ed., 3 vols., Bassano, 1795–96; G. P. Zabeo, Elogio del Tintoretto, Venice, 1813; G. A. Moschini, Guida per la città di Venezia, 2 vols., Venice, 1815; E. A. Cicogna, Delle iscrizioni veneziane, 6 vols., Venice, 1826–53; A. F. Rio, De l'art chrétien, Paris, 1836 ff. (new ed., 4 vols., Paris, 1861–67);

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

J. Ruskin, Modern Painters, 5 vols., London, 1851–60; J. Ruskin, The Stones of Venice, 3 vols., London, 1851–53; J. C. Burckhardt, Der Cicerone, Basel, 1855 (Eng. trans., Mrs. A. H. Clough, London, 1908); C. Blanc, Histoire des peintres, XIV, Ecole venitienne, Paris, 1868; G. B. Lorenzi, Documenti per servire alla storia di Palazzo Ducale di Venezia, Venice, 1869; T. Gautier, Voyage en Italie, Paris, 1875; F. Galanti, Il Tintoretto (discourse), Atti dell'Acc. di Belle Arti di Venezia, Venice, 1876; W. R. Osler, Tintoretto, London, 1879; H. Taine, Voyage d'Italie, Paris, 1884; G. Nicoletti, Illustrazione della chiesa e scuola di S. Rocco in Venezia, Misc. della Deputazione di storia patria de Venezia, 1885, pp. 1–71; G. Frizzoni, I capolavori della Pinacoteca del Prado in Madrid, Archivio storico dell'arte, VI, 1893, p. 278 ff.; F. Wickhoff, Les Écoles d'Italie au Musée de Vienna, GBA, 1893, pp. 5–18; B. Berenson, Venetian Painters, London, New York, 1894; F. Wickhoff, Die Wiener Genesis, Vienna, 1895 (trans. Mrs. S. A. Strong, Roman Art, London, New York, 1900); H. Thode, Tintoretto, Bielefeld, Leipzig, 1901; J. B. Stoughton Holborn, Jacopo Robusti called Tintoretto, London, 1907; C. Vincenti, Notizie su un quadro del Tintoretto conservato nella Pinacoteca Civica del Castello Sforzesco di Milano, Rass. d'arte, IX, 1909, p. 148 ff.; F. P. B. Osmaston, The Paradise of Tintoretto, London, 1910; J. von Derschau, Zum geistigen Gehalt der Gemälde Tintorettos in der Scuola di S. Rocco, Heidelberg, 1911; D. von Hadeln, Beiträge zur Tintorettoforschung, JhbPreussKSamml, XXXII, 1911, pp. 25–58; G. Ludwig, Nachrichten über venetianische Malerei, Archivalische Beiträge zur Geschichte der venetianischen Kunst, Italienische Forsch., IV, 1911; E. M. Phillipps, Tintoretto, London, 1911; G. Soulier, Le Tintoretto, Paris, 1911; F. P. B. Osmaston, The Art and Genius of Tintoret, London, 1915; E. von der Bercken and A. L. Mayer, Beiträge zur Entwicklungsgeschichte Tintorettos, Münchner Jhb. der bildenden K., X, 1916, pp. 239–65; C. Gamba, A proposito di alcune opere deformate del Tintoretto, I, Venice, 1919; R. Berliner, Die Tätigkeit Tintorettos in der Scuola S. Rocco, Kchr. und Kunstmark, N.S., XXXI, 1920, pp. 468–73, 492–97; D. von Hadeln, Über einige Bildnisse von Tintoretto, JhbPreussKSamml, XLI, 1920, pp. 32–45; A. L. Mayer, Zwei unbekannte Werke Jacopo Tintorettos, ZfbK, XXXI, 1920, pp. 207–08; M. Pittaluga, Criteri paesistici del Tintoretto, L'Arte, XXIII, 1920, pp. 163–80; D. von Hadeln, Einige wenig bekannte Werke des Tintoretto, ZfbK, LV, 1921, pp. 189–91; D. von Hadeln, Zeichnungen des Tintoretto, JhbPreussKSamml, XLII, 1921, pp. 82–103, 169–89; E. Waldmann, Tintoretto, Berlin, 1921; D. von Hadeln, Einige wenig bekannte Werke des Tintoretto, ZfbK, LVI, 1922, pp. 93–98; D. von Hadeln, Some Early Works by Tintoretto, BM, LXI, 1922, pp. 206–17; D. von Hadeln, Tintoretto als Cassone-Maler, ZfbK, LVI, 1922, pp. 27–36; D. von Hadeln, Zeichnungen des Giacomo Tintoretto, Berlin, 1922; M. Pittaluga, Altre due opere del Tintoretto, ed un ritratto, L'Arte, XXV, 1922, pp. 233–36; M. Pittaluga, L'attività del Tintoretto in Palazzo Ducale, L'Arte, XXV, 1922, pp. 76–99; E. Tietze-Conrat, Cassonebilder in Wien, Kunstchronik, XXXIV, 1922–23, pp. 33–35; E. von der Bercken and A. L. Mayer, Jacopo Tintoretto, 2 vols., Munich, 1923; D. von Hadeln, Originals and Replicas from Tintoretto's Studio, BM, XLIII, 1923, pp. 286–93; A. L. Mayer, Tintoretto's Drawings in the Louvre, BM, XLIII, 1923, pp. 33–34; E. von der Bercken, Some Unpublished Works by Tintoretto and Titian, BM, XLIV, 1924, pp. 108–13; D. von Hadeln, A Self-portrait by Tintoretto, BM, XLIV, 1924, p. 237; D. von Hadeln, Some Drawings by Tintoretto, BM, XLIV, 1924, pp. 278–84; D. von Hadeln, Two Works by Tintoretto in the Detroit Museum, Art in America, XII, 1924, pp. 32–38; M. Pittaluga, Alcuni ritratti ignorati del Tintoretto, Dedalo, V, 1924, pp. 574–80; E. von der Bercken, Zwei unbekannte Werke aus Tintorettos früherer Zeit, ZfbK, LIX, 1925, pp. 330–32; A. L. Mayer, An Unpublished Tintoretto, BM, XLVII, 1925, pp. 170–75; M. Pittaluga, Il Tintoretto, Bologna, 1925; G. Lorenzetti, Venezia e il suo estuario, Milan, Rome, 1926 (2d ed., Rome, 1956); D. von Hadeln, Some Paintings and Drawings by Tintoretto, BM, XLVIII, 1926, pp. 115–16; M. Pittaluga, Opere del Tintoretto smarrite o di malsicura identificazione, L'Arte, XXVI, 1926, pp. 38–40; B. Berenson, While on Tintoretto, Festschrift für M. J. Friedländer, Leipzig, 1927, pp. 224–43; L. Dussler, Two Unpublished Drawings by Giacomo Tintoretto, BM, LI, 1927, p. 32; M. Dvořák, Geschichte der Italienischen Kunst im Zeitalter der Renaissance, 2 vols., Munich, 1927–29; G. Fiocco, Il Ritratto di Jacopo Sansovino di Jacopo Tintoretto, Dedalo, V–VI, 1927–28, pp. 485–88; P. Hendy, A "Flagellation" by Tintoretto at the Fogg Museum, Art in America, XV, 1927, p. 17; A. Venturi, Studi dal vero, Milan, 1927; D. von Hadeln, Jacopo Molino, BM, LIII, 1928, pp. 226–31; N. Pevsner, Die italienische Malerei vom Ende der Renaissance bis zum ausgehenden Rokoko, Barockmalerei in den romanischen Ländern, Wildpark-Potsdam, 1928; O. Benesch, Zu Veronese und Tintoretto, Belvedere, VIII, 1929, pp. 330–34; E. von der Bercken, Einige unbekannte Werke Jacopo Tintorettos, Pantheon, IV, 1929, pp. 421–22; F. Fosca, Tintoretto, Paris, 1929; D. von Hadeln, Zwei Zeichnungen Tintorettos, Pantheon, IV, 1929, pp. 452–53; P. Paoletti, La Scuola Grande di S. Marco, Venice, 1929; Venturi, IX, 4 (with bibliog.); P. Campetti, Four Paintings by Tintoretto at Lucca, Art in America, XVIII, 1930, pp. 93–101; E. Waldmann, Ein wiedergefundenes Dogenbildnis von Jacopo Tintoretto, Neuerwerbung der Bremer Kunsthalle, Der Cicerone, XXII, 1930, pp. 325–26; J. Wilde, Wiedergefundene Gemälde aus der Sammlung des Erzherzogs Leopold Wilhelm, JhbKhSammlWien, V, 1930, pp. 245–66; V. Moschini, Tintoretto, Rome, 1931; B. Berenson, Italian Pictures of the Renaissance, Oxford, 1932; T. Borenius, A Great Tintoretto, BM, LXI, 1932, pp. 99–104; M. Dobroklonsky, Some Unknown Drawings by Tintoretto in the Hermitage, Apollo, XXIII, 1932, pp. 147–49; P. Hendy, Paintings by Tintoretto in Boston, BM, LXII, 1933, pp. 129–35; Venturi, IX, 6; L. Venturi, Italian Paintings in America, III, Chicago, 1933; E. von der Bercken, Unbekannte Werke des Jacopo Tintoretto in der Sammlung Italico Brass in Venedig, Pantheon, XV, 1935, pp. 24–30; E. von der Bercken, Neue Beiträge zum Œuvre Jacopo Tintorettos, Pantheon, XVII, 1936, pp. 116–22; G. Delogu, Tintoretto alla Scuola di S. Rocco, Bergamo, 1936 (2d ed., 1951); L. Foscari, Affreschi esterni a Venezia, Milan, 1936; E. Tietze-Conrat, Echte und unechte Tintorettozeichnungen, Die Graphischen Künste, N.S., I, 1936, pp. 88–100; W. Arslan, Argomenti per la cronologia del Tintoretto, CrArte, II, 1937, p. 27; T. Borenius, An Unpublished Portrait by Tintoretto, BM, LXXI, 1937, p. 153; B. Degenhart, Zur Graphologie der Handzeichnungen, Kunstgeschichtliches Jhb. der Bib. Hertziana, I, 1937, p. 442; A. Mercati, La scrittura per la Presentazione della Madonna al tempio del Tintoretto a S. Maria dell'Orto, La Mostra del Tintoretto a Venezia, 1937; La Mostra del Tintoretto, Catalogo delle opere (ed. N. Barbantini), Venice, 1937; R. Pallucchini, Tintoretto a S. Rocco, con note storiche di M. Brunetti, Venice, 1937; H. Tietze, The Tintoretto Exhibition at Venice, BM, LXXI, 1937, pp. 133–34; R. Tozzi, Disegni inediti di Jacopo Tintoretto, BArte, XXX, 1937, pp. 318–21; T. Borenius, A Tintoretto Portrait at Christ Church, Oxford, BM, LXXII, 1938, pp. 37–38; T. Borenius, Ein wiederentdeckter Tintoretto, Pantheon, XXI, 1938, p. 86; L. Coletti, Introduzione al Tintoretto, Convivium, X, 3, 1938, pp. 241–51; C. Lorenzetti, Una nuova data sicura nella cronologia tintorettiana, Ateneo Veneto, 1938, pp. 129–237; J. Wilde, Die Mostra del Tintoretto zu Venedig, ZfKg, VII, 1938, pp. 140–53; E. von der Bercken, ThB, XXXIII, 1939, pp. 189–98; W. Suida, Zwei unbekannte Werke Tintorettos, Pantheon, XXIII, 1939, pp. 122–27; L. Coletti, Tintoretto, Bergamo, 1940 (2d ed., 1944, 3d ed., 1951); V. Loos, Tintoretto, motreformationesmålare (Tintoretto, Painter of the Counter Reformation), Norrköping, 1940; L. Coletti, La crisi manieristica nella pittura veneziana, Convivium, XIII, 1941, pp. 109–26; R. Gallo, La famiglia di Jacopo Tintoretto, Ateneo Veneto, 1941, pp. 73–92; E. von der Bercken, Tintoretto, Munich, 1942; R. Pallucchini, La pittura veneziana del Cinquecento, 2 vols., Novara, 1944; H. Tietze and E. Tietze-Conrat, The Drawings of the Venetian Painters in the 15th and 16th Centuries, New York, 1944; R. Longhi, Viatico per cinque secoli di pittura veneziana, Florence, 1946; B. Berenson, Ristudiando Tintoretto e Tiziano, Arte Veneta, I, 1947, pp. 22–36; L. Grassi, Storia del disegno, Rome, 1947; R. Pallucchini, Un ritratto ritrovato del Tintoretto, Arte Veneta, I, 1947, p. 294 f.; H. Tietze, Tintoretto: the Paintings and Drawings, London, 1948; H. B. Wehle, An Unfinished Tintoretto Explained, B. of the Met. Mus. of Art, N.S., VIII, 1949, p. 173; R. Pallucchini, La giovinezza del Tintoretto, Milan, 1950; S. Vipper, Tintoretto e il suo tempo, Rass. sovietica, 1950–51; D. R. Coffin, Tintoretto and the Medici Tombs, AB, XXXIII, 1951, pp. 119–25; R. Pallucchini, Giunte alla giovinezza del Tintoretto, Arte Veneta, V, 1951, pp. 111–14; H. Tietze, Il bozzetti di Jacopo Tintoretto, Arte Veneta, V, 1951, pp. 55–64; L. Venturi, La peinture italienne: La Renaissance, Geneva, Paris, New York, 1951; E. Newton, Tintoretto, London, 1952; F. J. Sánchez Cantón, Museo del Prado (cat.), Madrid, 1952; G. Delogu, I grandi maestri del disegno: Tintoretto, Milan, 1953; R. Pallucchini, Un capolavoro del Tintoretto: la Madonna del Doge Alvise Mocenigo, Arte Veneta, VIII, 1954, pp. 222–35; F. Arcangeli, La "Disputa" del Tintoretto a Milano, Paragone, VI, 61, 1955, pp. 21–35; G. Fiocco, Un capolavoro giovanile del Tintoretto nel Museo Civico di Padova, B. del Mus. Civ. di Padova (1949–54), 1955, pp. 45–62; L. Grossato, Ancora un Tintoretto, B. del Mus. Civ. di Padova (1949–54), 1955, pp. 63–80; O. Benesch, Some Unknown Early Works by Tintoretto, Arte Veneta, X, 1956, pp. 95–103; A. Chastel, L'art italien, 2 vols., Paris, 1956; J. Dupont, Tintoretto et les peintres vénitiens dans les églises de Paris, Venezia e l'Europa (Congresso Venezia 1955), 1956; W. N. Eisendrath, Minerva Pursuing Venus by Tintoretto, B. of the City Art Mus. of St. Louis, XLI, 1, 1956, pp. 2–5; A. Forlani, Mostra di disegni di Jacopo Tintoretto e della sua scuola (Cat., Gabinetto dei disegni e stampe degli Uffizi), Florence, 1956; G. Nicco Fasola, Il manierismo e l'arte veneziana del Cinquecento, Venezia e l'Europa (Congresso Venezia 1955), 1956, pp. 291–93; L. Rudrauf, Vertiges, chutes et ascension dans l'espace pictural du Tintoretto, Venezia e l'Europa (Congresso Venezia 1955), 1956; W. Sypher, Four Stages of Renaissance Style . . ., Garden City, 1956; L. Venturi, Le seizième siècle: de Léonard au Gréco, Geneva, 1956; C. Virch, A Study by Tintoretto after Michelangelo, B. of the Met. Mus. of Art, N.S., XV, 1956–57, pp. 111–16; N. Barbantini, Il Tintoretto a S. Rocco, Saggi e Mem. di Storia dell'Arte, I, 1957, pp. 11–24; B. Berenson, Italian Pictures of the Renaissance, The Venetian School, 2 vols., London, 1957; G. A. Dell'Acqua, L'Adultera del Tintoretto a Milano, Paragone, VIII, no. 87, 1957, pp. 62–67; A. Forlani, In margine ad una mostra di disegni del Tintoretto, Arte Veneta, XI, 1957, pp. 82–90; C. Sommer, Tintoretto's "Forge of Vulcan," B. of the N. C. Mus. of Art, 1957, pp. 3–5; P. Wescher, I ritratti del Doge Priuli di Jacopo Tintoretto, Arte Veneta, XI, 1957, pp. 205–07; O. Benesch, Titian and Tintoretto: Study in Comparative Criticism, Arte Veneta, XII, 1958, pp. 79–90; S. Moschini-Marconi, Rivisione di due Tintoretto, BArte, XLIV, 1959, pp. 69–81; R. Pallucchini, Contributi alla pittura veneta del Cinquecento: IV. La pala del Tintoretto per San Geminiano, Arte Veneta, XIII–XIV, 1959–60, pp. 51–54; B. Suida Manning, Two "Seasons" by Jacopo Tintoretto, Studies in the History of Art Devoted to W. E. Suida, London, 1959; E. Arslan, Le pitture del Duomo di Milano, Milan, 1960; E. Hüttinger, Zu einem unbekannten Frühwerk von Tintoretto, Pantheon, XVIII, 1960, pp. 272–76; C. de Tolnay, L'interpretazione dei cicli pittorici del Tintoretto nella Scuola di S. Rocco, CrArte, VII, 1960, pp. 341–76; G. Fiocco, Considerazioni su Jacopo Tintoretto, Pantheon, XIX, 1961, pp. 22–26; C. Gilbert, Tintoretto and Michelangelo's "St. Damian," BM, CIII, 1961, pp. 16–20; C. Gould, Sebastiano Serlio and Venetian Painting, Warburg, XXV, 1962, pp. 55–64; E. Hüttinger, Die Bilderzyklen Tintorettos in der Scuola di S. Rocco zu Venedig, Zurich, 1962; W. Hugelshafer, Zeichungen mit der Feder von Jacopo Tintoretto, Pantheon, XX, 1962, pp. 339–47; F. Neugass, Zweifelhafter Tintoretto ist Gegenstand eines Gerichtsverfahrens, Weltkunst, XXXII, 7, 1962, p. 16; B. Suida Manning, Titian, Veronese and Tintoretto in the Collection Walter P. Chrysler Jr., Arte Veneta, XVI, 1962, pp. 49–60; O. Benesch, a Study for the Scuola di S. Rocco by Tintoretto, Master Drawings, I, 1963, pp. 29–30; E. Herzog, Tintoretto and "I fatti di Cesare," Festschrift für Harald Keller (ed. H. M. von Erffa and E. Herget), Darmstadt, 1963, pp. 269–79; M. Muraro, Affreschi di Jacopo Tintoretto a la Soranzo, Scritti di storia dell'arte in onore di Mario Salmi, III, Rome, 1963, pp. 103–16; L. Oehler, Das Tintoretto-Bildnis der Kasseler Galerie, Festschrift für Harald Keller (ed. H. M. von Erffa and E. Herget), Darmstadt, 1963, pp. 255–67; C.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

de Tolnay, Tintoretto's Salotto Dorato cycle in the Doges' Palace, Scritti di storia dell'arte in onore di Mario Salmi, III, Rome, 1963, pp. 117–31; P. Warzée, "Le miracle de l'esclave" du Tintoret: Une découverte importante, B. de l'Institut Royal du patrimoine artistique, VI, 1963, pp. 91–108; J. Maxon, A Possible Tintoretto, B. of the Minneapolis Inst. of Art, LIII, 1, 1964, pp. 13–16; M. Valsecchi, Scuola di San Rocco, Novara, 1964; R. Chiarelli, Tintoretto: La Scuola di San Rocco, Forma e colore, 44, Florence, 1965; J.-P. Sartre, The Prisoner of Venice, Situations (trans. B. Eisler), London, New York, 1965, pp. 3–60; Columbia University Department of Art History and Archaeology, Masters of the Loaded Brush: Oil Sketches from Rubens to Tiepolo, Apr. 4–29, 1967, New York, 1967 (exhib. cat.; intro. by R. Wittkower).

Rodolfo PALLUCCHINI

Illustrations: PLS. 77–88.

TITIAN. Italian painter (b. Pieve di Cadore, ca. 1488–90; d. Venice, Aug. 27, 1576). The history of Titian's family, the Vecellios, has been traced back (Fabbro, 1951) to a certain Tommaso, a notary from Pozzale di Pieve di Cadore, one of whose sons, called Guercello or Vecellio, was podesta of Cadore in the first half of the 14th century; it was from him that the family derived its surname. Titian was one of the five children of Gregorio Vecellio and grandson of Count Vecellio, a notary and jurisconsult. The exact year of Titian's birth is unknown. The traditional date of 1477 given by the Anonimo del Tizianello (1622) and Ridolfi (1648) has now been rejected by scholars in favor of the evidence of Dolce (1557) and Vasari (1568), who place it around 1488–90.

Little is known of Titian's beginnings as a painter. According to Dolce, he was sent at the age of nine to the home of an uncle in Venice, where he worked in the studio of Sebastiano Zuccato, father of the well-known mosaicists Valerio and Francesco. This early contact with the technique of mosaics may well have influenced Titian in his use of color. His relations with the Zuccato family continued for many years; as late as 1545 he gave Valerio a design for a mosaic in the Basilica of S. Marco, and in 1565 their names are again recorded together in connection with the frescoes for the archidiaconal church of Pieve di Cadore.

According to tradition, Zuccato entrusted the young Titian to Gentile Bellini, who was then working with his brother Giovanni in the Sala del Maggior Consiglio in the Doges' Palace. However, since Gentile's style seemed too "hard, dry, and labored" (according to Vasari), Titian is supposed to have turned instead to Giovanni, who at that time embodied more than any other painter the pictorial ideals of the age and held a position of indisputable supremacy in Venetian painting. It was from Giovanni Bellini that Titian acquired the taste for tonality and the poetic sense of landscape that he was to see realized and made sublime in the works of Giorgione (q.v.). In Giorgione he found his ideal teacher, and to him he turned — probably in the years immediately preceding their collaboration on the frescoes for the façade of the Fondaco dei Tedeschi — for an apprenticeship that was of fundamental importance to the development of Titian's art. He absorbed Giorgione's teachings and his magic world to such an extent that Titian's paintings were sometimes mistakenly believed to be works by his master, even during the latter's lifetime (Vasari).

This affinity between the two artists constitutes a fascinating, complex, and hotly debated problem. The certain authorship of a group of works attributed by some scholars to Giorgione's last years and by others to Titian's early period would be of fundamental importance to our understanding of the two artists. Another problem is the influence of Titian's elder brother Francesco, a modest artist, who nevertheless should not be lost sight of in the reconstruction of the general framework of Titian's early development. In any case, it was incontestably from Giorgione that Titian learned a new way of painting, released from traditional schemes, with rapid brushstrokes dissolving the outlines to create a sense of volume — essentially a new pictorial vision, more immediate than reflective, based not only on a technique that was revolutionary and nonconformist for that period but also on a particular way of feeling nature and created things, interpreted as an inexhaustible source of arcane enchantment.

After drawing and painting with Giorgione for a short time Titian had become so skillful (Dolce) that when the master was commissioned to fresco the Fondaco dei Tedeschi in 1508 he held his young pupil worthy to paint at his side. The façade was frescoed by Giorgione and the side facing the Mercerie by Titian, thus confirming the evidence of Dolce and Vasari. According to the latter, Titian received the commission from the nobleman Barbarigo, of whom he had painted a portrait in about 1506; if this portrait, identified by some critics with the so-called "Ariosto" (London, Nat. Gall.), had not carried "his name on the dark background, it would have been attributed to Giorgione." Again, when Titian's frescoes were unveiled, they were thought by some to be by Giorgione himself and were so highly praised that the master finally took offense, even though he recognized that his pupil "was a painter even inside his mother's womb" (Dolce).

These frescoes, which had already deteriorated in Ridolfi's day (1648), were almost unrecognizable when they were detached in 1937. Two fragments survive: Giorgione's *Nude* (VI, PL. 189) and Titian's *Compagno della Calza* in the Doges' Palace in Venice. A few figures are recorded in engravings executed by Gian-Jacopo Piccini in 1658 and in those by Antonio Maria Zanetti which are included in his *Varie pitture a fresco de' principali maestri veneziani* (1760). From the engravings it can be seen that Titian's figures have a greater sense of volume and plasticity and that the enraptured quiescence of Giorgione's art is replaced by an internal intensity. The Fondaco frescoes constitute a turning point in Titian's youthful activity, dividing his strongly Giorgionesque works from those in which his own pictorial style finds personal expression.

After the collaboration on the Fondaco dei Tedeschi, relations between the two artists probably slackened or dissolved completely, and Titian, by now publicly acclaimed, began to work alone. In 1510, the same year Giorgione died, Titian was commissioned to paint frescoes for the Scuola di S. Antonio in Padua.

Among Titian's earliest works are two *cassone* panels, the *Birth of Adonis* and the *Myth of Erysichthon*, in the Museo Civico of Padua, which are very free in technique and of great coloristic intensity and expressive force. Stylistically similar is the furniture panel *Endymion and His Flock* of the Barnes Foundation in Merion, Pa., which most likely immediately precedes the *Orpheus and Eurydice* of the Galleria dell'Accademia Carrara in Bergamo, a painting of exquisite delicacy that was previously attributed to Giorgione. These "archaic" works are deeply influenced by the poetic Arcadian spirit of Giorgione, but, at the same time, they reveal Titian's own tendency toward a more marked sense of movement and drama. Also belonging to this category are several paintings, probably executed in the years 1506–08, which are known from engravings by Valentin Lefebvre (Le Febre) in *Opera selectiora quae Titianus Vecellius Cadubriensis et Paulus Caliaris Veronensis inventarunt ac pinxerunt* (1682). These are mostly landscapes with figures, directly inspired by Giorgione and probably also by Titian's contacts with Giulio Campagnola, who was in Venice in 1507 and may well have initiated him in the art of engraving. Titian's early interest in the depiction of landscape may also have been stimulated by the picturesque scenery of the Cadore and the fanciful prints of Albrecht Dürer, who was in Venice in 1506. Titian's landscapes were famous and highly praised by his biographers, including his contemporary Paolo Pino (1548). However, once his Giorgionesque phase was over, Titian became ever less subject to the fascination of landscape, which, although present in many of his masterpieces, was to acquire a marginal character in comparison with the human figure, the basic element of his art. Thus in all the works preceding the Fondaco frescoes the cast of Titian's personality is well delineated: he shrinks from the vague and indefinite and, although moving in a highly poetic sphere derived from Giorgione's "world," molds his personages with a concreteness of intention unparalleled at that time. In the interval between the Fondaco cycle and the frescoes for the Scuola di S. Antonio in Padua, Titian must have executed other works, as is indicated by the stylistic differences found in these two series of frescoes. In the treatment of the drapery the soft contours of the Fondaco

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

frescoes are replaced by strong, straight lines in the Padua frescoes, showing a more dynamic approach.

These characteristics of style and the "novelties" that Titian introduced in his paintings provide the key to the later development of his early art, entangled as the latter was *ab origine* with the last manifestations of Giorgione's art. And it is in the clarification of this aspect of Titian's art that his early artistic personality acquires its rightful importance, having been enriched by some of the most celebrated masterpieces of Venetian painting — the last works of Giorgione. First among these is Giorgione's famous *Sleeping Venus* (VI, PL. 195), which is almost certainly identifiable with the painting seen by Michiel in 1525 in the house of Gerolamo Marcello. Michiel noted that the painting was by Giorgione, but that the landscape and cupid (since overpainted) were finished by Titian. The conception of this work, so pure and dreamlike in its beauty, is undoubtedly Giorgione's, whereas the substantial brushstrokes and the resolute drawing, so unlike the *sfumato* outlines of Giorgione, confirm the literary evidence and demonstrate Titian's considerable share in the execution of this work. Titian is, in fact, supposed to have completed a number of canvases left unfinished by Giorgione.

The Louvre *Concert Champêtre* possesses the highly lyrical character of Giorgione's art, but Titian's hand is apparent in the dominance of figures over landscape, in the heavy impasto, and in the points of contact, both iconographical and stylistic, with the frescoes in Padua. Closely connected with this evocative work are Titian's "Noli me tangere" (XII, PL. 94) and *Christ and the Adulteress* (Glasgow, Art Gall. and Mus.). A copy of this last work in Bergamo (Gall. dell'Acc. Carrara) shows the painting as it was before being cut; a fragment of the original with the head and shoulders of a young soldier is in the Arthur Sachs Collection in New York. In the *Christ and the Adulteress* the dramatic movement of the figures is already in marked contrast with Giorgione's contemplative absorption and clearly reveals a conceptual detachment from it. The same tendencies can be found in the *Madonna and Child with SS. Anthony and Roch* (PL. 89), which is stylistically akin to Giorgione's altarpiece of the *Madonna Enthroned* (VI, PL. 185), but differs in its richer chromatic feeling.

Among the works previously attributed to the mature Giorgione and now generally ascribed to Titian are the *Christ Bearing the Cross* (Venice, Scuola di S. Rocco) and the so-called "Gypsy Madonna" (Vienna, Kunsthist. Mus.), which is very similar to the above-mentioned *Madonna and Child*. Another painting in this group is the splendid and dramatic Pitti *Concert*, with its poignant relationship between the individual figures and the intensely spiritual atmosphere. These paintings are already charged with the dynamic quality that expresses Titian's bold new spirit.

Other works belonging to this period are the *Circumcision* (New Haven, Yale Univ. Art Gall., Jarves Coll.); the *Venus and Cupid* (London, Wallace Coll.), which is badly preserved; the altarpiece of the *Five Saints* (Venice, S. Maria della Salute), which, according to Fogolari (1935), was probably painted as an ex-voto after the plague of 1510; and the *Raphael and Tobias* (Venice, Accademia). To these may be added the *Madonna and Child with the Infant St. John* formerly in the Cook Collection, Richmond, Surrey, and the *Angel* in the Galleria Doria Pamphili, Rome. The *St. George* in the Cini Collection in Venice is slightly later.

The first payment for the frescoes in the Scuola di S. Antonio in Padua was made to Titian on Dec. 1, 1510; the frescoes were begun on Apr. 23, 1511, and final payment was made on Dec. 2, 1511. The scenes from the life of St. Anthony of Padua depict him granting speech to an infant (PL. 89), bringing back to life a woman killed by her jealous husband, and reattaching the foot of a young man who had cut it off after kicking his mother. On comparing these figures with those carried out only three years before for the Fondaco dei Tedeschi, one remains struck by the great steps Titian had taken in so short a time. The break with Giorgione's art is now pronounced and substantial. Titian has found in the human figure the measure and essence of his art. His personages acquire flesh and blood, and they are made to move and act with the impetus of splendid actors in an exalted human drama. The spirit pervading the Paduan frescoes arises from a realism and vitality that has its only contemporary equivalent in the works of Michelangelo.

In these frescoes there is also to be found a new treatment of color. Owing to long-standing tradition there remained in Venetian painting a particular taste for color, which differed from that of other schools both in its softer accents and in its more intense tonality. With Giorgione these qualities were realized to the maximum degree. The color, conceived not as an element to be superimposed on the design but as the means of suggesting forms, itself creates the figures, whose contours dissolve in the surrounding background. Titian accepted this basic principle and continued to elaborate and develop it by degrees. It was in Padua that he began to paint with touches of pure color, obtaining not only a fusion of the individual parts but also a greater depth of atmosphere and a more immediate sense of space.

Furthermore, with the Paduan frescoes Titian established a new ideal of female beauty, which was to persist in Venetian painting and eventually become the norm of subsequent centuries up to modern times. This ideal is found in a number of works from the years immediately following the decoration of the Scuola di S. Antonio — among them the *Tarquin and Lucretia* and *Violante* (both, Vienna, Kunsthist. Mus.), *Vanitas* (Munich, Bayerische Staatsgemäldesammlungen), *Girl Combing Her Hair* (Louvre), *Flora* (PL. 90), *Salome* (Rome, Gall. Doria Pamphili), and the later *Venus Rising from the Sea* (Edinburgh, Nat. Gall. of Scotland, Ellesmere Loan), as well as the opulent female figures in his religious paintings of this period.

Besides marking the highest achievement of his youth and the beginnings of his mature style, the Scuola di S. Antonio frescoes also include a gallery of portraits that confirm Titian's authorship of a number of the already-mentioned works traditionally attributed to Giorgione. There is no doubt that the St. Anthony of the Paduan frescoes is the same as that in the *Madonna and Child* altarpiece in Madrid; that the two young men of the Louvre *Concert Champêtre* reappear in the frescoes; and that there is a strong affinity between the man with long hair in the Glasgow *Christ and the Adulteress*, the ascetic musician in the Pitti *Concert*, and the figure of Christ in the "Noli me tangere" in London. The solemn figure of the mother in the scene representing St. Anthony granting speech to an infant may well be regarded as sister to the lady known as "La Schiavona" in the National Gallery, London.

Titian's brilliance was also affirmed in portraiture. Among the most significant examples from his youthful period are the pensive *Knight of Malta* (Uffizi), assigned to Giorgione by some critics; the *Sick Man* in the same gallery, dated 1514; the *Young Man with Blond Hair and Plumed Cap* (Sussex, Petworth House), whose lively, yet dreamy look is reminiscent of Giorgione; the *Man in a Red Cap* (PL. 90), portraying the same figure absorbed in reverie; and the similar *Young Man Holding His Cap* (London, Earl of Halifax Coll.).

Other splendid portraits dating approximately from this period are the *Portrait of a Venetian Gentleman* (Washington, D.C., Nat. Gall., Kress Coll.), previously attributed to Cariani (G. de' Busi); the supposed portrait of Raphael (formerly London, Saville Coll.); the so-called "Ariosto" (London, Nat. Gall.); and the *Portrait of a Man* (New York, Met. Mus., Bequest of Benjamin Altman).

Stylistically close to the examples enumerated above are the *Portrait of an Elderly Man in a Landscape* (Copenhagen, Statens Mus. for Kunst); the *Portrait of a Musician* (Rome, Gall. Spada); the so-called "Bravo" (Vienna, Kunsthist. Mus.), which is markedly Giorgionesque in taste; the *Portrait of a Man in Fur* (Derbyshire, England, Trustees of the Chatsworth Settlement); the *Portrait of a Man of Letters* (Hampton Court, England, Royal Colls.), previously identified with Jacopo Sannazzaro; the portrait once thought to be Aretino (Munich, Alte Pin.); and the portrait of Tommaso Mosti (Florence, Pitti). All these are strongly individualized portraits, which are at the same time idealized by an intense expression of inner life and by a sense of high moral dignity.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Probably a little earlier in date, from between 1512 and 1514, is the brilliant Balbi *Sacra Conversazione* (Genoa, Coll. Doria Balbi), which Morassi (1946) has added to the catalogue of Titian's important early works.

In 1513 Titian declined an invitation to go to Rome as court painter to Leo X and remained instead in Venice, where he offered to paint a battle scene in the Sala del Maggior Consiglio of the Doges' Palace for the Council of Ten. He is known to have set up his studio in the area of S. Samuele and to have taken on two assistants. However, it was only after the death of Giovanni Bellini in 1516 that Titian assumed a position of unrivaled supremacy in Venice. That year he was accorded the most desired form of official recognition: the commission to paint the Frari *Assumption*. This altarpiece for the Church of S. Maria Gloriosa dei Frari was completed in 1518. Poised in the vivid golden light of the sky, the powerful figure of the Virgin, in adoration of the vision of God the Father, is surrounded by angels, while the Apostles below, surprised by the miraculous event, dramatically express their mood with expansive gestures of wonder (cf. study of Apostles, IV, PL. 276). Heaven and earth seem to be united by the dynamic quality of the divine and human figures.

Few of the works carried out by Titian between 1510 and 1520 may be dated with certainty, except for the Frari *Assumption*. He was present at the court of Ferrara early in 1516, the year in which he painted *Christ and the Tribute Money* (Dresden, Gemäldegal.) for Alfonso d'Este. This work is said by his biographers to have been painted in emulation of Dürer. Another work from this period, signed and dated 1520, is the altarpiece representing the Madonna and Child with SS. Francis and Blaise commissioned by Alvise Gozzi of Ragusa for the Church of S. Francesco delle Scale in Ancona, where it is now housed in the Pinacoteca Comunale. Although considerably darkened owing to its imperfect state of preservation, this monumental work possesses a strength of light and a solemnity of conception that make it one of Titian's major altarpieces.

On stylistic grounds it is also possible to assign the following works to the decade 1510–20: the *Baptism of Christ* (Rome, Mus. Cap.), mentioned by Michiel as being in the house of the Spanish art dealer Zuan Ram in 1531; the *Three Ages of Man* (PL. 93); the *Holy Family and a Shepherd* (London, Nat. Gall.); the *Sacra Conversazione* (Dresden, Gemäldegal.); the *Madonna of the Cherries* (Vienna, Kunsthist. Mus.); and the *Madonna and Child with SS. Ulfus and Bridget* (Prado), one of Titian's most pleasing *sacra conversazione* paintings, in which St. Ulfus is thought to be a self-portrait. The Louvre *Madonna and Child with SS. Stephen, Maurice, and Jerome*, long held to be a copy of a lost original, dates from about 1520.

The altarpiece depicting Alexander VI presenting Jacopo Pesaro, Bishop of Pafo, to St. Peter (Antwerp, Mus. B. A.) occupies a place of its own. The somewhat archaic composition has led some critics to consider it an extremely early work, possibly even begun by Giovanni Bellini, and executed during two different periods, one before the Padua cycle and the other, limited to the bas-relief, between 1515 and 1520. However, it is more likely that it dates from about 1512–14 on the basis of stylistic affinities with the above-mentioned Balbi *Sacra Conversazione*.

Meanwhile Titian painted three fine scenes for the Duke of Ferrara: the *Worship of Venus* (PL. 94), the *Bacchanal* (PL. 93), and lastly, in 1523, the *Bacchus and Ariadne* (X, PL. 250). These paintings stand out in Titian's *œuvre* not only for their extraordinary wealth of poetic invention and the classical perfection of the lively figures (on which Rubens was to draw copiously for inspiration) but also for their brilliant and translucent coloring. In these works the drawing is precise and the separate parts are carefully elaborated and "executed with incredible diligence" (Vasari). Since the same characteristics are to be found in the previously mentioned *Christ and the Tribute Money*, it appears that Titian carried out his commissions for the Duke with maximum care and in a more measured and traditional style, reminiscent of Giovanni Bellini. It should be remembered that Bellini had also painted for the Duke of Ferrara the famous *Feast of the Gods* (XII, PL. 44), which was unfinished at his death and subsequently completed by Titian. Thus Bellini's influence on Titian's Ferrara works may have been spontaneous or an adaptation to the milieu, or else it may have entered into them in response to the expressed wishes of the Duke. These works do in fact provide a contrast to his altarpieces, in which he adopted a bolder, broader technique and a play of color and chiaroscuro designed to obtain more striking effects.

Shortly after the Frari *Assumption* Titian must have executed the painting (variously dated by scholars, but certainly of the years 1519–22) for the Malchiostro Chapel in Treviso Cathedral. This work treats the theme of the Annunciation in an entirely original manner, with the Angel appearing from the background and the Madonna turning toward him, while the lines of the floor and the architecture accentuate the sense of depth.

The scheme of the slightly turned and foreshortened head set at an angle to the body, which first appears in the Fondaco dei Tedeschi frescoes and occurs repeatedly thereafter in scenic compositions and portraits, reaches its fullest development in the *Sacred and Profane Love* (PL. 94), a masterpiece in the same lyrical vein as the Louvre *Concert Champêtre* that dates from about 1515. The two female figures, whose real meaning remains obscure, fully incarnate the ideal of beauty found in Italian art throughout the first decades of the 16th century: fullness of form, balance, and fluidity of line.

Between 1520 and 1530 Titian's work was in great demand. On Apr. 24, 1519, Titian signed a contract with Jacopo Pesaro, Bishop of Pafo, to paint another work for the Church of S. Maria Gloriosa dei Frari. The work, which was not completed until 1526, shows the enthroned Madonna and the Christ Child between SS. Peter and Anthony with adoring members of the Pesaro family (PL. 96). That sense of grandiosity which characterizes Titian's art is still further accentuated here, not only in the stateliness of the figures but also in the skillful diagonal composition, which is based on a rhythmic recession of ascending planes, culminating in the monumental architecture with the two columns that seem to soar into the sky.

Altobello Averoldo, the papal legate, ordered a polyptych from Titian for the Church of SS. Nazaro e Celso in Brescia (PL. 95), for which Titian had completed only the section representing St. Sebastian by November, 1520. At the same time he was under pressure to complete the Duke of Ferrara's *Bacchanal* and thus was unable to complete the polyptych until more than a year later, after a stay in Brescia. This complex work, which follows the traditional scheme of 15th-century polyptychs, is imbued, however, with a totally revolutionary pictorial spirit. The painting is full of dramatic chiaroscuro effects and displays a plasticity that is grandiose and almost baroque, especially in the contorted figure of St. Sebastian and in the triumphant Christ rising heavenward.

By this time Titian's fame had also reached the court of Mantua, where he is documented as having painted a portrait for Federico Gonzaga in 1523. In the same year Titian was asked to deliver the paintings commissioned earlier for the Sala del Maggior Consiglio of the Doges' Palace. The newly elected doge Andrea Gritti also commissioned Titian to fresco the figure of St. Christopher on the stairway of his private apartments, a work resembling the St. Sebastian of the Brescia polyptych in its Michelangelesque physique.

In 1524 Titian paid a second visit to the Este court at Ferrara, and on his return to Venice in 1525 he married Cecilia, who had come with him from his native Cadore. Before her death in 1530 she was to bear him three children: Pomponio, Orazio, and Lavinia.

Titian's *Martyrdom of St. Peter* won the competition sponsored by the Venetian Confraternity of St. Peter Martyr in 1528, and the work was unveiled in the Church of SS. Giovanni e Paolo on Apr. 27, 1530. The altarpiece was destroyed by fire in 1867, but the composition is known from engravings and numerous copies. This is an important work because it reveals Titian's renewed interest in landscapes.

In 1527 Pietro Aretino fled the Sack of Rome and settled in Venice. Titian immediately became one of his friends, and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Aretino spread Titian's fame "as far as [his] pen reached" (Vasari). Another figure who made Venice his permanent home after the Sack of Rome was Jacopo Sansovino, who likewise became a close friend of Titian and with whom he is recorded as having worked for the court of Mantua in 1531.

In 1529 Clement VII and Charles V met in Bologna, where, owing to introductions from Aretino and the Marquis of Mantua, Titian had his first contacts with the Emperor and painted his portrait. When Charles V returned to Bologna in the years 1532–33 to have Titian paint another portrait, he appointed the artist his official portrait painter and granted him titles of nobility.

As Titian's fame increased, more and more public figures vied with one another to have their portraits painted by him. Portraits that undoubtedly date from between 1520 and 1530 are the following: *Federico Gonzaga* (Prado); *Nobleman of the Farnese Family* (Pommersfelden, Germany, Countess Ruffo-Schönborn Coll.); *Baldassare Castiglione* (Dublin, Nat. Gall. of Ireland); *Gentleman with Hawk and Hound*, or *Federico Gonzaga* (Omaha, Nebr., Joslyn Art Mus.); *Portrait of a Man* (signed; Berlin, Mus. in Dahlem); and *Mathias Hofer* (Duino, Italy, Coll. Prince Torre e Tasso). From all these figures there breathes a sense of dignity, an aura so austere that it transports them to a higher, ideal sphere. In about 1523 Titian also painted the portrait of Alfonso d'Este with his arm resting on a large artillery piece. This painting has been identified by some critics with the portrait of Alfonso of Ferrara in the Metropolitan Museum, New York.

The fact that Titian painted Charles V on several occasions — for instance, the full-length portrait of the austerely clad Emperor with his dog in the Prado — could not fail to increase his reputation as a painter. In the 1530s commissions continued to multiply. Titian portrayed Cardinal Ippolito de' Medici in Hungarian costume (Florence, Pitti), a work which Vasari says was executed in Bologna in the years 1532–33. Then he painted an idealized reminiscence of Isabella d'Este (1534–36) as a youthful beauty (Vienna, Kunsthist. Mus.) and a now lost portrait of the Cardinal of Lorraine (ca. 1534).

In 1536 Titian was working on a portrait of Francesco Maria della Rovere, Duke of Urbino, which he completed in 1538, and in the same period he also painted Eleonora Gonzaga, Duchess of Urbino (both, Uffizi). Meanwhile, in 1537, Ercole II, Duke of Ferrara, received a portrait of Alfonso d'Este (d. 1534), of which the Pitti canvas is perhaps a copy. To this distinguished list should be added the following lost works: a profile portrait of Francis I of France (1539), executed from a medal by Benvenuto Cellini and generally identified with the canvas of the same subject in the Louvre (1538; copies in the Coppet Coll., Lausanne, and the Harewood Coll., London), and yet another rendition of Charles V and a portrait of Suleiman the Magnificent, to both of which Titian was putting the finishing touches in 1539, according to a letter of Gian Giacomo Leonardi, Urbino's ambassador to Venice.

Vasari also records a portrait of Francesco Sforza, Duke of Milan (ca. 1534). From other sources it is known that Titian executed no longer traceable portraits of Guidobaldo di Camerino (1538), Count Agostino Lando (1539), Giulia and Paolo Da Ponte (1540), and Don Diego Mendoza, ambassador of Charles V to Venice. According to Vasari, the last-mentioned work, painted in 1541, was a full-length portrait, important for being one of the earliest examples of this type, which was introduced by Titian and later widely imitated.

Other portraits of this period are those of Alessandro degli Organi (now lost), Pietro Bembo (possibly the painting in the National Gallery, Washington, D.C.), and Commandante Vincenzo Capello (the example in the National Gallery, Washington, D.C., although sometimes attributed to Titian, is more probably a work of the school of Tintoretto) — all of which were painted in 1540. To these should be added the portraits of General Alfonso d'Avalos del Vasto (Paris, Coll. Marquis de Ganay); Gabriele Tadino, commander of Charles V's artillery (New York, L. Bendit Coll.); the Friulian Count Antonio Porcia (Milan, Brera); and, lastly, the signed portrait thought to be Laura de' Dianti (formerly, Richmond, Surrey, Cook Coll.; copy in Modena). In these works the aura of mystery and intimacy of his earlier Giorgionesque portraits has given way to a new heroic and ideal conception in which the individuality and the moral and social character of the sitter are acutely expressed.

Titian's sacred and secular compositions were no less in demand than his portraits. It is known that in February, 1530, he was working for Federico Gonzaga on a depiction of the Madonna and Child with the Infant St. John and St. Catherine, a work that is generally thought to be the so-called "Madonna of the Rabbit" in the Louvre. This work shows a renewed interest in landscape and a greater harmony in its relationship to the figure. The same subject is repeated in the *Madonna with the Infant St. John and St. Catherine* (1533) in the National Gallery, London, which is also stylistically close to the Louvre canvas in the emphasis given to the evocative landscape. The Uffizi *Madonna and Child with the Infant St. John and St. Anthony Abbot* probably dates from a few years earlier.

Also dating from this particularly poetic period in the art of Titian is the moving *Entombment* (PL. 91), datable about 1525, in which the intensity of the drama is expressed both by the sorrowful figures and by the landscape under an evening sky. The composition was probably inspired by Raphael's *Deposition* (IV, PL. 314), but Titian's work surpasses it in the effectiveness of the coloring and the touching human depth. Another work of perhaps about this date is the *Twilight Landscape with Shepherd and Flocks* (Hampton Court, England, Royal Coll.), which, though not unanimously agreed upon, is almost certainly by the master.

Stylistically similar to the *Entombment* and perhaps a few years later in date is the *Supper at Emmaus* (Lincolnshire, Brocklesby Park, Earl of Yarborough Coll.), in which the artist has succeeded in establishing a profound and intimate relation between the separate figures in a composition that appears almost archaic owing to its single perspective plane. A second version of this work painted for the Maffei family of Verona is now in the Louvre. A still later replica, probably executed with the participation of assistants, is in the National Gallery of Ireland in Dublin.

On Sept. 1, 1531, Titian left his S. Samuele studio and moved into his house in the S. Canciano ai Birri district. His relations with the Doge remained close. A votive painting representing Doge Andrea Gritti in adoration of the Madonna and Child with SS. Mark, Bernardino, Alvise, and Marina was noted in the Doges' Palace in 1531 (Sanuto, 1496–1533, diary entry for Oct. 6, 1531). Destroyed by fire in 1577, the work is known from an anonymous engraving to have followed the same grandiose scheme as the Pesaro altarpiece. A number of other works painted in 1531 are also lost.

Titian's relations with Francesco Maria della Rovere, Duke of Urbino, began in 1532 through Gian Giacomo Leonardi, Urbino's ambassador to Venice. In the same year he was working on no less than three canvases for the Duke: a Christ, a Nativity, and a portrait of Hannibal. The painting of the Nativity, probably identifiable with the *Adoration of the Shepherds* in the Pitti, Florence, reached Pesaro in November, 1533, while the other two works were delivered in March, 1534. The depiction of Christ is almost certainly the same painting as Titian's *Head of Christ* in the Pitti, which is typologically close to that of the *Christ and the Tribute Money* in the Gemäldegalerie, Dresden, but rendered more poetic by the presence of a landscape background. Titian again took up the same theme in the *Temptation of Christ* in the Institute of Arts in Minneapolis. In this work, datable to the early 1540s, certain mannerist tones are apparent.

In 1536 Federico Gonzaga commissioned Titian to paint bust portraits of the Twelve Caesars for the Sala di Troia of the Palazzo Ducale in Mantua, which Giulio Romano had just finished decorating. Four of the portraits were completed by the following year. The last in the series must have been painted by Giulio Romano. Though the portraits were lost when they were transferred to Spain, they are recorded in the Sadeler engravings and in numerous copies.

Titian painted the theme of the Annunciation in 1537 for

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the Convent of S. Maria degli Angeli in Murano. This lost work is known from an engraving by Gian Giacomo Caraglio. Some years later he returned to the same subject in the painting given by Amelio Cortona to the Scuola di S. Rocco, Venice, in 1555. In this work the figures are placed before a balustrade, beyond which a landscape is visible — a compositional scheme that would later inspire Paolo Veronese.

In 1513 Titian had offered to paint a battle scene for the Sala del Maggior Consiglio of the Doges' Palace, but it was only on June 23, 1537, that he actually began work on it. The work was delivered in August of the following year. This vast canvas (or *telero*) is believed by some to have represented the rout at Chiaradadda (Vasari), by others the battle of Spoleto (Sansovino, 1581), and by still others the battle of Cadore (Ridolfi, 1648) — the last being the title by which it is generally designated. Destroyed by fire in 1577, the work is known through a copy in the Uffizi and a 1569 engraving by Giulio Fontana. This depiction of a battle scene, vigorously and dramatically portrayed, was to remain the supreme example of the genre until the advent of Rubens and Velázquez.

Stylistically related to Titian's work of the 1530s are the Louvre *Allegory*, datable to the early years of the decade, the subject of which has been variously interpreted, and the *Assumption* in Verona (III, PL. 310). In the latter the color tones are more subdued, resulting in a softness of transitions and gradations, and there are echoes of Roman mannerism in the agitated poses of the Apostles that contrast strongly with the inspired ardor of the Frari *Assumption*.

Another work of the mid-1530s, the *Madonna and Child in Glory with Six Saints* (Rome, Pin. Vat.), is somewhat archaic in its harsh, almost synthetic simplicity and in the presence of the wall in the background. Between 1534 and 1538 Titian painted the *Presentation of the Virgin in the Temple* (PL. 99), his largest work up to that time, for the Scuola della Carità in Venice.

It is now universally accepted that the *Venus of Urbino* (XII, PL. 66) is to be identified with the canvas of a nude woman received by Guidobaldo II, Duke of Urbino, in March, 1538. Instead of being depicted in a vast, open landscape, which is the dominant element in Giorgione's *Sleeping Venus* (VI, PL. 195), Titian's Venus is reclining within a sunlit room, where two women are taking clothes from a chest. The model for the *Venus of Urbino* had been immortalized two years earlier in the masterpiece *La Bella* (Florence, Pitti), identifiable with the picture of the woman in a blue dress that the Duke of Urbino asked Titian to finish on May 2, 1536. She appears again in the *Girl in Fur* (Vienna, Kunsthist. Mus.), more intimately portrayed with her right hand arresting her fur mantle on the naked beauty of her breast. This theme, with the addition of a plumed hat, is repeated in the version in The Hermitage in Leningrad.

The Duke of Urbino also owned the *Magdalen* (Florence, Pitti) — which, according to Vasari, hung in the palace cloakroom — whose languid pose anticipates the baroque. This subject was often repeated by Titian with slight variations and toward the end of his life with a more fluent technique.

Another famous masterpiece is the variously dated *Jupiter and Antiope*, known as "Vénus du Pardo" (PL. 99), the composition of which unmistakably recalls the *Bacchanal* painted for the Duke of Ferrara, though the pictorial rendering is freer and more elaborate. This enormous canvas is almost a recapitulation of the path Titian had traveled from his youthful period of lyrical Giorgionesque themes to the moment of his rediscovery of landscape as the balancing element between the human figure and nature. The dates proposed for the painting generally fall within the last half of the 1530s; judging from the breadth and fluency of the pictorial style, however, it is likely that the painting was later reworked, possibly as late as 1560.

Titian's artistic production between 1530 and 1540 concludes with a historical painting, *The Allocution of Alfonso d'Avalos, Marqués del Vasto* (PL. 100). A letter from Aretino to the Marqués tells us that Titian began the work toward the end of 1540 and that he sent the "modello," now lost, to D'Avalos in December of the same year. In August, 1541, the canvas was finished and dispatched to Milan, where the Marqués was staying at the time. In this work Titian once more displays his mastery in elevating a worldly event to an idealistic plane through the dignity he confers on the scene. The pictorial rendering, true to life but never lost in superfluous detail, lends itself perfectly to the creation of this timeless quality.

Mention has already been made of mannerist tendencies in Titian's works of the 1530s and earlier. The source of these suggestions was the particular cultural and artistic climate of Venice in those years. The cultural environment was dominated by Pietro Aretino, who had been in contact with the "classical" idols in Rome, as well as by the classical influence that the works of Michelangelo were spreading everywhere. Also in Venice the Roman style had made its converts, foremost among them Pordenone. The spread of the mannerist movement was rekindled by the presence of several Roman-Florentine painters, among them Francesco Salviati, who was summoned to Venice by the Grimani family in 1539; another was his pupil Giuseppe Porta, called Salviati, known from documents to have been in Venice in 1541, where he popularized the mannerist style in frescoes painted on the façades of several Venetian palaces. In addition, interest was aroused by the activity of Giulio Romano and Francesco Primaticcio in Mantua and by the elegant style of Parmigianino, whose work was well known from engravings. Titian was unable to ignore these formal innovations, but through the high level and originality of his style he gave them an entirely personal interpretation, constituting not so much an ideological acceptance as a transitory recognition of taste, which in no way damaged the spirit of his work.

In fact, the extreme formal attitudes in the *Crowning with Thorns* (Louvre) might be defined as manneristic, even though the term, in this case, does not apply to the over-all conception. The painting probably dates from shortly before Titian's journey to Rome. His new treatment of the subject did not fail to make a profound impression on his contemporaries; this was the first time they had seen the theme of Christ being mocked by the Jews depicted with such dramatic violence and with such a forceful sense of modeling in the figures. The pained and contorted face of Christ and the ferocity of the mockers bring to mind the terrifying "naturalistic" representations of northern artists.

On the contrary, none of this formal or dramatic ostentation is encountered in the *John the Baptist*, painted for the Church of S. Maria Maggiore in Venice and now in the Accademia. The powerful figure of the saint is truly daring, though the slightly mannered pose (perhaps inspired by Sansovino's sculpture) obscures its spontaneity. Mannerist accents are also found in the *Tobias with the Angel Raphael* in the Church of S. Marziale in Venice.

Vasari relates that during his stay in Venice (1541–42) he was asked by Sansovino, who was directing the building of the Church of Sto Spirito in Isola, to design three large oils for the ceiling. After Vasari's departure, however, the commission was given to Titian. These works — *The Sacrifice of Abraham*, *David and Goliath*, and *Cain Slaying Abel* — now hang in the sacristy of S. Maria della Salute. Begun after August, 1542, they were presumably finished in 1544, on the evidence of a letter from Titian in December, 1544, to Cardinal Farnese. These scenes are conceived with deliberate violence, and Titian's *giganti* vie with those of Giulio Romano. The use of light bursting and darting through the compositions increases the expressiveness of the forms.

Contemporary with these works are the *St. John the Evangelist on Patmos* (Washington, D.C., Nat. Gall.), which repeats the foreshortened motifs of the canvases in S. Maria della Salute, and other studio works that originally formed part of the decoration of a ceiling in the Scuola di S. Giovanni Evangelista in Venice.

Titian's letter to Cardinal Farnese also tells of a dispute between the painter and the monks of Sto Spirito in Isola, who owed him money for several works, including the three above-mentioned ceiling canvases now in the sacristy of S. Maria della Salute. The controversy apparently arose over a panel depicting the descent of the Holy Spirit, painted in 1541 for

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

the church of the canons of Sto Spirito in Isola, which had deteriorated to such an extent that the artist was obliged to repaint it. The second version, preserved in S. Maria della Salute, is generally dated on stylistic grounds between 1555 and 1560; it marks an important step in Titian's artistic development because of its highly dramatic quality and the gleaming light effects, significant for future artists and for El Greco in particular.

Payments made by the Confraternity of Corpus Domini of Urbino indicate that between 1542 and 1544 Titian painted a *Resurrection* and a *Last Supper* (Urbino, Gall. Naz. delle Marche), which originally formed the two sides of a banner, but which were already divided by 1546. In both these works there is perhaps less creative impulse, which has led some critics to regard them as studio products; but they are certainly Titian's own work by virtue of their inventiveness and their stylistic affinities with the *Ecce Homo* in Vienna (Kunsthist. Mus.). The latter work, signed and dated 1543, was Titian's highest achievement of the early 1540s. According to Vasari, this large canvas was painted for Giovanni d'Anna, a Flemish merchant, in whose house the painting was hanging in 1574. It was highly praised by Henry III of France, who offered to buy it for 800 ducats. Ridolfi (1648) noted that it was Titian's intention to portray Aretino in the figure of Pontius Pilate, Suleiman and Charles V in the two knights, and himself in another figure. In the girl dressed in white Tietze (*Leben und Werk*, II, p. 315) saw Titian's daughter, Lavinia. The tumult of the crowd with arms upstretched before the background of a threatening sky, against which are silhouetted standards and halberds, subsides in the figure on the flight of steps leading to the platform, where Pontius Pilate points at the suffering Christ. It is a highly dramatic composition in which each figure assumes the force of a personage, becoming a pictorial entity in itself.

During this period Titian was very active in the field of portrait painting. Two of his masterpieces are the child portraits of Ranuccio Farnese (1542; Washington, D.C., Nat. Gall.) and Clarice Strozzi (Berlin, Mus. in Dahlem). The latter (signed and dated 1542), with its vibrant spontaneity in the figure of the young girl seen before an airy stretch of countryside, came to exert significant influence on the history of portraiture.

From a letter written on July 10, 1542, by a correspondent to Cristoforo Madruzzo, later appointed bishop of Trento, it is known that by then Titian had completed a portrait of the prelate, which is now generally regarded as the one in the Museu de Arte in São Paulo, Brazil. However, the date 1552, inscribed with the signature on the canvas, suggests that this is a second version of the portrait, or else the first version, finished ten years later and in part repainted.

In April, 1543, Pope Paul III arrived in Emilia for a meeting with Charles V. Titian, who was present at his entry into Ferrara, followed the court to Busseto and Bologna. In July of that year he finished a portrait of the Pope (Naples, Mus. di Capodimonte) that reveals an exceptional expressive power.

Other works documented by Aretino's letters are the portrait of Daniele Barbaro (Ottawa, Nat. Gall. of Canada), executed for Paolo Giovio and mentioned in February, 1545, and the portrait of Pietro Aretino, usually identified with the Pitti painting (PL. 97), which was sent to Cosimo I de' Medici in October, 1545, as well as a number of other portraits now lost. Also significant examples of Titian's work in this field from the same period are the portraits of Giacomo Doria (Bedfordshire, Luton Hoo, Wernher Coll.), Monseigneur D'Aramont (Milan, Castello Sforzesco), Doge Andrea Gritti (Kenosha, Wis., Heirs of N. Allen), the same sitter in a later work (Washington, D.C., Nat. Gall.), Doge Niccolò Marcello (Rome, Pin. Vat.), and Sperone Speroni (slightly marred; Treviso, Italy, Mus. Civ.), as well as the portrait of a gentleman wearing the Order of Santiago (Munich, Alte Pin.). Another work that probably belongs to this period is the refined portrait known as the *Young Englishman* (Florence, Pitti), in which the subtlety and psychological penetration demonstrate Titian's capacity for capturing all the nuances of human feeling.

It was as a result of his contacts with the Farnese family that Titian was invited to Rome. He undertook the journey in the autumn of 1545, passing through the Marches, where he stopped at the court of Guidobaldo II, Duke of Urbino, in order to paint the Duchess, Giulia da Varano. Titian reached Rome in October and was welcomed with many honors by Pietro Bembo, Cardinal Farnese, and Pope Paul III. He stayed in the Belvedere Palace in the Vatican and was visited by the elderly Michelangelo. Vasari guided him on his tours of Rome, and Sebastiano del Piombo accompanied him to admire the Vatican Stanze.

Titian painted another, full-length portrait of the Pope seated in a large chair and attended by his grandchildren Ottavio and Alessandro Farnese (Naples, Mus. di Capodimonte), thereby introducing a new type of portrait containing several figures. This work, only barely sketched in parts, and executed with free and impetuous brushstrokes, already contains the potential measure of Titian's late style. The Museo di Capodimonte also possesses other portraits painted for the Farnese family in this period: those of Cardinal Alessandro Farnese and Pier Luigi Farnese, who is shown in a suit of armor with his hand on his sword, and a portrait of the aged Pietro Bembo before a landscape background. Other works that undoubtedly belong to the Farnese group are the portrait of a young girl (Naples, Mus. di Capodimonte), thought by some critics to be Titian's daughter, Lavinia, and that of Pope Paul III wearing the *camauro* (PL. 92). The supposed portrait of Vittoria Farnese (Budapest, Mus. of Fine Arts) should be excluded from the catalogue of the artist's works.

But the best-known work of the Farnese group is the *Danaë* (Naples, Mus. di Capodimonte), one of Titian's most successful and balanced mythological interpretations. Vasari relates that he saw the painting with Michelangelo, who praised it highly, adding that "it was a pity that good design was not taught at Venice." The fruit of a completely original invention, the *Danaë* is remarkable for the realization of the figure in a new plastic rhythm. It is the prototype for the later versions in Vienna (Kunsthist. Mus.), Leningrad (The Hermitage), and Madrid (Prado).

At the request of Guidobaldo II of Urbino, Titian painted two portraits of popes of the Della Rovere family while he was in Rome: one of Julius II (Florence, Pitti), copied from the famous original by Raphael (now lost), at that time in S. Maria del Popolo, and another of Sixtus IV (Uffizi), based on the medallion in the Vatican fresco by Melozzo da Forlì.

In March, 1546, Roman citizenship was conferred on Titian. However, his stay was drawing to a close, and he returned to Venice on June 19, passing through Florence, where he visited Duke Cosimo at Poggio a Caiano.

It is known from Aretino's letters that at this time Titian painted a portrait of Doge Francesco Donato, which was destroyed in the fire of 1577 (copy in San Diego, Calif., Fine Arts Gall.). In addition to his intense activity as a portraitist, Titian finished the altarpiece *Madonna and Child in Glory with SS. Peter and Paul* (begun in 1542) for the Cathedral of Serravalle (now Vittorio Veneto), a work that betrays a somewhat archaic composition and unequal execution; and he also painted the altarpiece *St. James of Compostela* for the Church of S. Lio and *St. John the Almsgiver* for the church dedicated to that saint (S. Giovanni Elemosinario), both in Venice.

But Titian's most notable achievements of this period were primarily in the field of portraiture, of which the finest example is probably the votive portrait of the Vendramin family (ca. 1547; PL. 100). Along with the portrait of Paul III with his grandchildren, this work, which is even more lifelike and complex, gives a new and broader dimension to his art.

Invited by Charles V to Augsburg, Titian left Venice in January, 1548, accompanied by his son Orazio, his grandchild Cesare, and his pupil Lambert Sustris. He took with him an *Ecce Homo*, probably the canvas now in the Prado (of which he left a copy for Aretino), to offer to the Emperor as a token of respect.

At Augsburg Titian set to work on portraits of the most illustrious personages assembled there for the Diet. In April he began the painting of Charles V on horseback (Prado),

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

one of his most significant masterpieces in the field of portraiture. The Emperor is represented in a suit of armor, his lance at rest, as he departs for the Battle of Mühlberg. The horse, beginning to trot, is silhouetted in a landscape of trees against a reddish sky. Charles V is depicted in all his severe dignity as monarch, the embodiment of the maximum temporal power of his time. This work was to be the model for many later equestrian portraits, from Rubens to Van Dyck, from Velázquez to Rembrandt. In the same year Titian also painted a full-length portrait of the Emperor seated (Munich, Alte Pin.). From Titian's letter of Sept. 1, 1548, to Cardinal Granvelle it appears that he had painted other works for the Emperor: "a Christ [probably the above-mentioned *Ecce Homo* in the Prado], a Venus, the Empress alone, and later . . . His Majesty and the Empress." The portrait of the Empress is definitely the portrait of Isabella of Portugal in the Prado, while the Venus and the dual portrait of Charles V and the Empress must have been lost. There is a copy of the latter, attributed to Rubens, in the F. Sabin Collection in London. While he was in Augsburg Titian painted Johann Friedrich, Grand Elector of Saxony (Vienna, Kunsthist. Mus.); another portrait of the Elector in armor (Prado) is probably a copy of the lost original by Titian. Also during 1548 Titian painted Nicholas Perrenot de Granvelle (Besançon, Mus. des B. A.) and his son Antoine Perrenot (Kansas City, Mo., Nelson Gall. of Art and Atkins Mus.), works of marked formal purity that seem to reflect a certain northern influence, perhaps of Lucas Cranach the Elder or Holbein.

Titian executed portraits of other personages who were in Augsburg for the Diet: Mary of Hungary, sister of Charles V (copy in Paris, Mus. des Arts Décoratifs); Christina of Denmark; Maria Jacqueline of Baden; Maurice, Duke of Saxony; Dorothea von der Pfalz; Archduke Maximilian of Austria; Emmanuel Philibet of Savoy; Ferdinand I, King of Hungary and Bohemia (copies in the Prado and in Augsburg, Fugger-Babenhausen Coll.); Archduke Ferdinand, son of Ferdinand I; and the Duke of Alba. The quantity of works executed in such a short time, and while the painter was occupied on yet other compositions, is proof of Titian's extreme rapidity in synthesizing the characters of his subjects. His method was to sketch each sitter's basic physiognomy from life and complete the work at his leisure. Many of the works enumerated above were lost in transit to Spain or destroyed by fire in 1608.

Titian returned to Venice at the end of October, 1548. This date marks the beginning of one of the artist's most successful periods. For Mary of Hungary he started on a series of the "doomed," of which only two are extant: the *Sisyphus* and the *Tityus* now in the Prado. The *Tantalus* is known from an engraving, but there is no trace of the *Prometheus*. The conception of these figures is somewhat Michelangelesque and recalls his earlier canvases for Sto Spirito in Isola, which are now in S. Maria della Salute. About two months after his return to Venice, Titian was summoned to Milan by Crown Prince Philip of Spain, who sat for a portrait that has been identified by some critics with the painting of Philip II in the Cincinnati Art Museum; but the face in this work would seem to represent the prince some years later.

In 1548 he completed the triptych commissioned in 1543 for the parish church of Castello di Roganzuolo, representing the Madonna and Child with SS. Peter and Paul. However, this elegant composition reveals weaknesses in the execution that may be attributed to the collaboration of assistants. The work shows stylistic affinities with the polyptych with the Assumption and saints in the parish church of Lentiai; only the figure of Titian's patron saint is generally ascribed to the artist himself. Other predominantly workshop pieces are the polyptych in Dubrovnik Cathedral and the painting depicting Mary Magdalene, St. Blaise, Tobias, the archangel Raphael, and a donor in the Church of St. Dominic in the same town. It is clear that during these years Titian himself painted the more important secular and religious compositions and portraits of famous people and entrusted lesser commissions to assistants working under his direction.

Titian painted a number of works for members of the Granvelle family, most of which are no longer extant. In 1600 a Granvelle sold paintings of "a Venus in bed, with an organist" (Prado) and "a Venus sleeping with a disguised satyr" to Rudolph II. He had long since abandoned the Phidian ideal of beauty; in the works of this period he resumed the physical type of the Naples *Danaë*, emphasizing the sensual quality. Titian repeated this theme of the reclining Venus with slight variations. In the Prado there is a painting of Venus with a small dog. In Berlin (Mus. in Dahlem) a Moorish-type organist is depicted. In the version in the Metropolitan Museum, New York, he substituted a lute player for the organist and made the background more detailed, as he also did in the somewhat inferior rendering of this theme in the Fitzwilliam Museum in Cambridge, England; both of these works were painted about 1560. The Uffizi *Venus with an Owl* is a studio product.

Titian returned to Augsburg in November, 1550, again at the invitation of Charles V, and presented him with the *Mater Dolorosa* (Prado), which the Emperor took with him when he voluntarily exiled himself to Yuste in Estremadura. Also in Augsburg, Titian executed a full-length portrait of Philip II, then a prince, wearing a suit of armor, with his helmet placed on a long, cloth-covered table beside him (Prado). This was Titian's last journey, and he was never to leave Venice again after his return there in August, 1551.

As has already been pointed out, this period of Titian's activity was particularly prolific in portrait painting, which as a result of his visits to Augsburg came to be pervaded with a severity of style that conferred on his subjects an intense inner life. Both the supposed portrait of Benedetto Varchi (Vienna, Kunsthist. Mus.) and that of Antonio Anselmi (Lugano, Switzerland, Thyssen-Bornemisza Coll.) are imbued with an almost austere spirituality.

On renewed contact with the Venetian environment, however, the artist's style reverted to its former freedom. During this period he produced such masterpieces as the *Knight of Malta* (Prado), previously attributed to Tintoretto, and the portrait of the Duke of Atri (PL. 100). The latter work, chromatically dazzling and evocative for its strange interweaving of reality and fantasy, became a prototype for Velázquez. Other portraits of this period are the *Franciscan Friar with a Book* (Melbourne, Australia, Nat. Gall. of Victoria); the "Singolare Amico," a portrait of a friend of the artist (San Francisco, M. H. de Young Memorial Mus.), so called from the inscription on a sheet of paper in the sitter's left hand; and the portrait of Ludovico Beccadelli (Uffizi), signed and dated 1552. The portrait of Doge Francesco Venier (Lugano, Switzerland, Thyssen-Bornemisza Coll.), painted between 1554 and 1556, is a work of superb quality, with a view of the lagoon illuminated by the glare of a fire in the background.

On June 18, 1553, Prince Philip wrote Titian that he had received his portrait, probably the one in Naples (Mus. di Capodimonte), in which he is portrayed full-length in sumptuous dress, a dignified figure standing out against a monochrome background that dissolves into gradations of clear grayish and greenish tints. However, more human warmth and a freer use of color are to be found in Titian's less official portraits, such as that of Fabrizio Salvaresio (Vienna, Kunsthist. Mus.), which is signed and dated 1558. Also dating from the 1550s are the portraits of the sculptor Martino Pasqualigo (signed; Washington, D.C., Corcoran Gall. of Art) and Archbishop Filippo Archinto of Milan (New York, Met. Mus.), as well as the knee-length portrait of a bearded man with a scroll in his left hand (Copenhagen, Statens Mus. for Kunst).

Titian's ideal of female beauty triumphs once more in the *Portrait of a Lady* (Washington, D.C., Nat. Gall., Kress Coll.), of the early 1550s, and in the *Lady in White* (or *Portrait of a Young Bride*; Dresden, Gemäldegal.). The latter, which depicts a girl with a fan (held by some to be Titian's daughter, Lavinia, on the occasion of her marriage in 1555), was copied by Rubens (Vienna, Kunsthist. Mus.). Also said to be Lavinia is the sitter for the splendid portrait *Girl with a Fruit Dish* (Berlin, Mus. in Dahlem), who is portrayed with a fruit-laden container in her hands and with her head turned naturally toward the viewer; this fresh and original compositional invention is repeated in

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the rather weak *Lavinia as Salome* in the Prado, in which the head of the Baptist is held in upraised hands.

Feminine beauty is splendidly represented in the *Venus with a Mirror* (Washington, D.C., Nat. Gall., Mellon Coll.), which fully reflects Titian's ideal. This work, saturated with sensual and chromatic nuances, is the only one of many versions of the same subject that can be ascribed to Titian's own hand.

It is known that in 1552 Titian sent Prince Philip a landscape and a portrayal of St. Margaret. The former, which proves that Titian was still painting in that genre, has been lost. The latter has been identified with the poorly preserved painting in the Escorial, a composition — possibly inspired by Raphael's treatment of the same subject — that is repeated some ten years later in the signed *St. Margaret* in the Prado, which is full of poetic echoes both in the figure of the saint and in the impressive landscape background caught in the light of a fire. A third version of the same subject, also signed, is in a German private collection.

In 1553, writing to Philip, Titian announced that he was completing several "poesies," or mythological compositions, and had given Francesco Vargas (Charles V's ambassador to Venice) the prince's portrait. The following year he informed Charles V that he had sent him the *Triumph of the Trinity* and the *Mater Dolorosa* (both, Prado). During Titian's second visit to Augsburg, Charles V had commissioned him to paint the *Triumph of the Trinity* (IV, PL. 232), which he took with him when he retired to a life of solitude. On the right, below the Trinity, are the Emperor, Empress Isabella, Philip II, Mary of Hungary, and the Infanta Juana. This is an ambitious work, full of tragic presentiments, which aims at grandiose effects and imitates in parts the vigorous and contorted modeling of Michelangelo. The *Mater Dolorosa* is, in the gesture of the opened hands, slightly different iconographically from the earlier painting of this subject that Titian presented to the Emperor.

One of the "poesies," *Venus and Adonis* (Prado), was sent in the autumn of 1554 to London, where Philip had married Mary Tudor. Venus, seen from behind, is attempting to hold back Adonis as he is about to leave for the chase, while a troubled and dramatic atmosphere pervades the landscape and the ragged sky. The composition recalls the *Jupiter and Antiope* (PL. 99) in its intense, lyrical tone and intimate, poetic communion between the figures and nature. There is a good replica of the *Venus and Adonis* in the National Gallery, London; two other versions, probably later, are in the Metropolitan Museum, New York, and the National Gallery, Washington, D.C. The example in the Galleria Nazionale, Rome, is mostly by Titian's own hand.

Another "poesy," also delivered to Prince Philip in 1554, is the *Danaë* in the Prado. In the same year Titian painted a "Noli me tangere" for Mary of Hungary; the fragment with Christ, which Philip had cut out of the painting, survives in the Prado. The composition is known from a copy attributed to Isabel Sánchez Coello (1564–1612) in the Escorial.

Despite his ever-increasing commitments to the imperial family, Titian succeeded in maintaining his contacts with the Venetian Republic. In 1555 and 1556 he executed a votive painting for Marcantonio Trevisan, representing the Doge kneeling before the Madonna and Child, with SS. Mark, Anthony, Dominic, and Francis. Placed above the door of the Sala dei Pregadi (or del Senato) of the Doges' Palace, this work was destroyed in the fire of 1577.

In the *St. Jerome* (Milan, Brera), probably datable to the early 1550s, which was painted for the Church of S. Maria Nuova in Venice, Titian returned to a subject he had depicted many years earlier in the Louvre canvas. Here the artist focused on a fresh, dramatic realization of pictorial concepts through new chromatic ranges and the juxtaposition of strokes and spots of contrasting color.

Between 1557 and 1559 Titian's *Martyrdom of St. Lawrence*, commissioned by Lorenzo Massolo in 1548, was placed in the Jesuit Church of S. Maria Assunta. Highly praised by Vasari, this work anticipates the late, luministic achievements of Tintoretto (q.v.) in the violent contrasts of darting light, in the emphasis of perspective, and in the tormented and excited rhythms of the forms.

In 1558 he delivered the *Crucifixion* for the Church of S. Domenico in Ancona. The solemn figures are seen against an immense night sky pierced by a reddish glow, and the drama is conveyed without a shade of rhetoric. Another work that can be assigned to about the same date is the *Annunciation* painted for the Church of S. Domenico Maggiore in Naples. This work marks the beginning of a new way of conceiving painting, no longer as solely an artistic expression of what is visible in nature but, in the search for the symbol and for the intimate essence that objects represent, as the expression of the ultimate and profound truth.

From 1559 to 1562 Titian worked on numerous projects for Philip II. Among the "poesies" promised to the king since 1553 was the *Perseus and Andromeda* (London, Wallace Coll.), which betrays the influence of Tintoretto in the emphatically foreshortened figure of the hero, who seems to be rolling down the cliff. In June, 1559, Titian wrote that he had completed two "poesies" — the *Diana and Actaeon* and the *Diana and Callisto* (Edinburgh, Nat. Gall. of Scotland, Ellesmere Loan) — and was about to start on two more, depicting the rape of Europa and Actaeon being torn to pieces by his dogs, as well a painting of the Agony in the Garden.

In the *Diana and Actaeon* and *Diana and Callisto* the pictorial achievements already manifested in the Naples *Annunciation* are further developed. The light permeates the forms, filtering through them, melting them and blurring the outlines, and imparting a sensation of vibrancy to the whole composition. The succinct lucidity of the early *Bacchanal* is far removed from this new world of the artist, who at this point stands on the threshold of modern trends, which he foresees and experiences. Copies of these two paintings, attributed to Juan Bautista Martínez del Mazo, are in the Prado. Another, slightly different version of the *Diana and Callisto* (Vienna, Kunsthist. Mus.) is undoubtedly by Titian himself.

Titian's last period is best explained by his biographers. Dolce (1557) foresees the painter's ultimate achievements when he writes that every figure "moves, and the flesh quivers," and that in his compositions "light and shadow are forever fighting and playing, and the light disappears and diminishes in the same way that it does in nature itself." Vasari is more circumstantial: "Titian's methods in these paintings differ widely from those he adopted in his youth. His first works are executed with a certain fineness and diligence, so that they may be examined closely, but these are done roughly in an impressionist manner, with bold strokes and blobs, to obtain the effect at a distance."

Boschini (1674) speaks at length of Titian's technique. He was aware from the works of Palma Giovane that the latter had "the good fortune to enjoy some of the erudite precepts" of the master. He informs us that Titian "laid the foundations for his paintings in a mass of colors, serving — as it were — as a bed or base for the expression that was later to emerge . . . after laying these precious foundations, he would turn the paintings to the wall, leaving them, sometimes for months, without looking at them: and when he once more put his brush to them, he would scrutinize them with rigorous care as though they were his deadliest enemies, to see if he could detect some fault in them. . . ." Boschini adds that Palma Giovane also attested that in putting the final touches to his works, Titian would paint "more with his fingers than with his brushes."

Far from being prey to the weakness of old age — as was once erroneously maintained by those critics, such as Mengs, Burckhardt, and others of a neoclassic formation, who had not succeeded in understanding the final message of the great artist — Titian was intensely aware of the torment of his search to achieve the sublime. In this respect the fourth "poesy," showing Actaeon being torn apart by his dogs (*Diana and Actaeon*; London, Harewood Coll.), is one of the most powerful expressions of Titian's art. The incautious shepherd, being attacked by the pack of hounds, seems to merge with the bushy shrubs and trees, which are executed with impetuous, broad brushstrokes; the pictorial texture is so alive that it animates everything in the painting.

In 1559 Titian finished two religious works for Philip II of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Spain: the *Entombment* in the Prado and the *Adoration of the Magi* in the Escorial. In the first Titian achieves a highly dramatic intensity in the scene, with its haggard and tragic figures surrounding the dead Christ. Another signed version, also in the Prado (No. 411), is probably the painting seen by Vasari in Titian's house in 1566. Other studio replicas of this painting are in Vienna (Kunsthist. Mus.) and Milan (Pin. Ambrosiana). The *Adoration of the Magi*, which has a truly magical atmosphere, is traditional in design but expressed with a sensitivity that is modern. The Prado version is by the artist himself, and there is a good replica in Cleveland (Mus. of Art). Yet another replica, also by Titian, which differs from that of the Escorial in some details — particularly in the landscape — is in Milan (Pin. Ambrosiana). In a letter to Philip II in September, 1559, Titian mentions "a small painting with Christ on the Cross" that his son Orazio was sending the King as a gift. This portable *Crucifixion*, now in the Royal Palace in Madrid, is of such high quality that it is presumed to be a work by Titian himself.

In April, 1562, Titian delivered two more works to the King: the *Rape of Europa* and the *Agony in the Garden*. The mythological subject (PL. 102) is transformed into a fantastic Orphic composition, a vision of silver and blue that transcends any connection with reality. The *Agony in the Garden* is identified by some with the canvas in the sacristy of the Escorial and by others with that in the Prado. The two canvases are coeval and conceived in the same expressive vein, underlined by an extremely bold use of luministic effects, especially the one in the Prado, which anticipates Rembrandt's nocturnal scenes. Probably also painted for Philip II was the *Madonna and Child*, formerly in the sacristy of the Escorial and now in Munich (Alte Pin.). In this work the soft and delicate landscape provides a luminous background for the two figures.

During the 1560s Titian was very active, though he concentrated less on portraiture. It is likely that he painted the figure of Wisdom in the center of the ceiling of the anteroom in Sansovino's Biblioteca Marciana shortly after September, 1559. The *Transfiguration* in the Church of S. Salvatore in Venice may also have been executed in this period, but its poor condition makes a more precise dating and stylistic evaluation difficult. The rather damaged altarpiece *St. Francis Receiving the Stigmata*, in which the donor Desiderio Guidone is portrayed (Ascoli Piceno, Italy, Pin. Civ.), though signed, is largely a studio production. The altarpiece *St. Nicholas of Bari* in the Venetian Church of S. Sebastiano, commissioned by the lawyer Nicolò Crasso, was probably painted after 1563.

By 1564 the *Last Supper*, begun for Philip II in 1558, was finished, but when it arrived at the Escorial (where it hangs in the Chapter House) it was thought to be too large and was cut down. What remains can give but a minimal idea of the original conception, and retouchings have darkened and spoiled the original coloring of the work. In it the figures are arranged with classical symmetry, and the light of the sun focuses attention toward the center of the scene. A copy from Titian's studio in Milan (Brera) gives an approximate idea of the appearance of the painting before it was cut.

The *Crucifixion* in the sacristy of the Escorial, probably painted about the middle of the 1560s, is reminiscent of the Ancona *Crucifixion* of 1558. The sacristy also contained a depiction of Mary Magdalen (now lost), well described by Vasari, which was sent to Philip II in 1561. Titian repeated the theme in the version in Leningrad (The Hermitage), datable about 1565. In these portrayals of the subject the sensuous spirit that pervades the earlier Pitti *Magdalen* gives way to a more religious feeling, in which there are slight exaggerations. There are several versions and replicas, partly by Titian and partly by the studio (formerly Lincolnshire, Brocklesby Park, Earl of Yarborough Coll.; Malibu, Calif. J. Paul Getty Mus.; Stuttgart, Staatsgalerie). The one in Naples (Mus. di Capodimonte) may be the painting sent as a gift to Cardinal Farnese in 1567.

One of the works that most clearly reveals Titian's intentions in his last years is the *Annunciation* in the Church of S. Salvatore, Venice. It was painted before 1566, the year in which Vasari remarked that he found in this painting a lack of "the perfection of his other paintings"; Vasari's judgment indicates that he did not fully understand the highest expressions of Titian's late style. An intense light is diffused throughout the scene like incandescent rain, transhumanizing the holy event. The dazzling angel, with outspread wings, surprises and almost frightens the Virgin as she kneels absorbed in prayer, while a host of angels descends from on high. This work is one of the masterpieces of Titian's maturity.

During these years he also produced the *St. Dominic* and the *Scourging of Christ* (both, Rome, Gall. Borghese), as well as the *Allegory of Prudence* (formerly London, F. Howard Coll.) and the *Judith* (Detroit, Inst. of Arts) — all of which illustrate the innovations in taste of the artist at that time.

The joyous and pagan sense of classicism, which Titian had so happily given expression to in the past, radiantly reappears in the *Venus Blindfolding Cupid* in the Galleria Borghese, Rome, which also houses the earlier masterpiece *Sacred and Profane Love* (PL. 94). Comparison of these two works provides a measurement of the distance covered so far by the artist and an appreciation of his pictorial advances — all of fundamental importance to the future of the art of painting. The *Venus Blindfolding Cupid*, a luminous canvas with grand figures, is executed in accordance with that principle of painting in spots of color which was to be taken up by the impressionists in the 19th century. It seems that within the "thick brushstrokes of color," as Boschini says so aptly, Titian fused the light of the sun, such is the luminosity that emanates from the painted canvas. The subject is expressed with greater simplicity but less effectiveness in the painting in the National Gallery in Washington, D.C., which is undoubtedly a fragment.

Vasari, who was in Venice from May 21 to 27, 1566, observed the following works "sketched out and begun" in Titian's studio: *The Martyrdom of St. Lawrence*; *Christ on the Cross*; a composition titled *Doge Grimani Kneeling before Faith*; three vault paintings with mythological subjects for the hall of the Palazzo Pubblico in Brescia; "a naked maiden bowing to Minerva," which has been identified with the *Religion Succored by Spain* (Prado); a "Noli me tangere"; a "Christ laid in the sepulcher," with the Madonna and three Marys; a self-portrait; and a "half-length figure of St. Paul reading."

The *Martyrdom of St. Lawrence*, placed on the high altar of the Escorial, arrived from Venice in 1567. The composition is related to the work in the Jesuit Church of S. Maria Assunta in Venice, though it differs in the background architecture; but the nocturnal effects are even more pronounced, in keeping with the accentuated violence of the drama. The large *Christ on the Cross*, commissioned by Giovanni d'Anna, is convincingly identified by Suida (1933) with the fragment showing Christ and the good thief in Bologna (Pin. Naz.). Other critics have assigned it to Tintoretto or to Palma Giovane, who actually may have collaborated on it. The painting of Doge Grimani is the votive painting commissioned by Doge Francesco Vernier in 1555 and located in the Sala delle Quattro Porte of the Doges' Palace. Since Vasari describes it as only "begun," and since it was not destroyed in the fire of 1577, it is probable that is was completed in the studio after Titian's death. This theory would also be supported by Boschini's affirmation that several figures were added by Marco Vecellio.

In 1564 Titian was commissioned to paint three large canvases for the vault of the hall of the Palazzo Pubblico in Brescia. The compositions represented Vulcan's forge; Brescia, Minerva, Mars, and three Naiads; and Ceres and Bacchus. Finished in 1567, they were sent to Brescia in 1568. The fact that the Brescian authorities thought the works were not by Titian's own hand gave rise to a series of disputes. Since they were burned in the fire of 1575, it is impossible today to know whether the doubts about their authenticity were well-founded and not the fruit of the incomprehension surrounding Titian's new pictorial vision (the composition of the painting with Vulcan's forge is known from an engraving).

The painting described by Vasari as showing a "naked maiden bowing to Minerva [with] a figure beside her and the sea in the distance with Neptune in his chariot" — a work that

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Titian is said to have left unfinished after the death of Alfonso I of Ferrara in 1534 — is usually identified with the signed work in the Prado representing *Religion Succored by Spain*. It is possible that the painter returned to it after the victory at Lepanto in 1571, adapting it to the new subject and sending it to Philip II in 1575. This is one of the most important works of Titian's last period. It is a symphony of vivid colors and muted tones, from the gray of the clouds to the pale pink of the dress worn by the personification of Spain, from the silvery tones permeated with pink in the sky to the pearly luster of the sea, reverberating in the deeper tone of the mantle covering the splendid nakedness of the figure of Religion. In the Galleria Doria Pamphili in Rome there is a slightly modified copy of this painting, certainly by some later copyist. A version of the same subject, sent to Maximilian II in 1568, has since been lost.

In the same year, Titian was elected to the Academy of Tuscan Painters, together with Tintoretto and Palladio. The following year Titian presented Cardinal Michele Bonelli with a *St. Catherine of Alexandria* (possibly the signed canvas in the Museum of Fine Arts, Boston) and painted a *Magdalen* for Alessandro Farnese. Titian also sent Pope Pius V a *St. Peter Martyr* (lost), which on the basis of an engraving by Luca Bertelli appears to have varied only slightly from the lost altarpiece painted earlier for the Venetian Church of SS. Giovanni e Paolo.

In October, 1568, Titian informed Philip II that he had finished a canvas depicting Christ and the Pharisee (*The Tribute Money*; London, Nat. Gall.), in which the strong naturalism of the figure of the Pharisee is almost pre-Caravaggesque. In the same year Titian also offered Maximilian II (through Jacopo Strada of Mantua) seven "mythologies," since lost, which repeated the same themes as "poesies" painted for Philip II (see above). Two other works that may be attributed on stylistic grounds to the 1560s are the small altarpiece *Madonna and Child with SS. Titianus and Andrew* in the archidiaconal church of Pieve di Cadore and the signed *Christ and Peter of Cyrene* in the Prado.

Titian was in Pieve di Cadore in 1565 in connection with certain frescoes for the apse of the archidiaconal church, whose execution he left to pupils, among whom were Cesare Vecellio, Emmanuello of Augsburg (Emanuel Amberger), and Valerio Zuccato. Completed in 1567, they were destroyed together with the church in 1813.

In the two paintings of Christ carrying the Cross in the Prado Titian returned to the theme of the disputed early canvas *Christ and the Executioner* in the Scuola di S. Rocco in Venice. A replica by Titian himself exists in The Hermitage in Leningrad. Also in The Hermitage there is a *Christ Blessing* (acquired in 1850 from the Barbarigo Coll.), which recalls the various representations of Christ painted by Titian since his youth, from the Dresden *Christ and the Tribute Money* onward.

It has already been noted that Titian dedicated himself less and less to portraiture in his last years. There are, in fact, few portraits that can be dated after 1560. Two are signed and dated 1561: the *Man with a Palm* (held to be Antonio Palma, father of Palma Giovane) in Dresden (Gemäldegal.) and the *Man Holding a Book* in Baltimore (Mus. of Art, Epstein Coll.). Probably of about the same date are the *Man Holding a Flute* (Detroit, Inst. of Arts) and the portrait of Titian's daughter, Lavinia, as a matron (according to an inscription on the painting) in Dresden (Gemäldegal.). The self-portrait completed in 1562, which Vasari says he saw in Venice in 1566, is very likely the example in Berlin (XI, PL. 218). Two other so-called self-portraits in the Uffizi may be regarded as copies by later followers. The portrait of Jacopo Strada (Vienna, Kunsthist. Mus.) was begun in 1567 and finished the following year. The sitter is portrayed in the gesture of exhibiting a small statue that rests on a table, on which there are also a few coins. This portrait is a penetrating analysis of character, which emerges all the more clearly by virtue of Titian's new luminism and technique. A painting that may also be considered a portrait is the *Child with a Dog*, in which the figures are standing in a landscape with a fire in the background (possibly a fragment; Rotterdam, Mus. Boymans-Van Beuningen). The large dog to which the child clings is the same as that which appears in the portrait of a gentleman in Kassel (Gemäldegal.).

In August, 1571, Titian wrote to Philip II that he had sent him a painting of *Tarquin and Lucretia* (PL. 98). The episode is expressed with dramatic violence, and the figures of the protagonists, towering in their passion, dominate the canvas. A more generalized interpretation is found in the *Tarquin and Lucretia* in Vienna (PL. 101), in which any theatrical quality in gesture or pose has completely vanished, giving way to an extremely intense inner "expressionism." For the poetry of space, nature, and the human figure Titian has substituted the poetry of color, from which spring the most fascinating expressions of his final period.

The same intentions that informed the Vienna *Tarquin and Lucretia* are apparent in the *St. Sebastian* in Leningrad (The Hermitage), a powerful figure created with spots and brushstrokes, generating a warm luminosity against a background in which the colors are agitated as in the turbulent waters of a whirlpool.

The expressionism that characterizes Titian's last works is apparent both in the *Ecce Homo* in St. Louis (City Art Mus.), which repeats the Prado *Ecce Homo* of 1548 in the figure of Christ, and in the Munich *Crowning with Thorns* (PL. 101), which is possibly the canvas that came into Tintoretto's possession on Titian's death. Many replicas of the first work exist, the most famous being that in the Prado, which was mentioned as being in the Escorial in 1574 (still another *Ecce Homo*, stylistically slightly earlier, also hangs in the Escorial). However, the Munich canvas follows the composition of the Louvre *Crowning with Thorns*, painted about thirty years earlier for the Church of S. Maria delle Grazie in Milan, but transforms the scene into an almost mysterious nocturne through the new chromatic conception and a deepening of the drama.

In the *Madonna and Child* in London (PL. 103) the figures are magically depicted in the subtly melancholy enchantment of a color scheme suffused with light. Contrasting with this work is the severe and classical grandiosity of the *Adam and Eve* (Prado), datable between 1565 and 1570, which harks back to the plasticity found in earlier works that show certain suggestions of Michelangelo.

The victory of Lepanto (1571) coincided with the birth of Infante Don Ferdinand, and Titian was commissioned to commemorate these events in the painting *Philip II Offering Infante Don Ferdinand to Victory* (Prado). Documents affirm that Titian was working on this canvas in 1573 and that it was dispatched to Spain in 1575. Against the background of the famous naval battle, crackling with a nocturnal glare, the King raises the child toward the figure of Victory, who is descending from on high with an impetus that calls to mind the earlier *Perseus and Andromeda*, while a Turkish slave lies in chains at the feet of the monarch. According to some scholars, the latter is an addition (or the completion of a figure only roughly sketched) by Vincenzo Carducci, who in 1625 enlarged and restored the painting, with the result that much of its original freshness has disappeared.

One of the highest and most profound creations of Titian's old age is the *Shepherd and Nymph* (PL. 102). In this work the artist, at the close of his long career, has succeeded in grasping the very essence of life and, almost as a summary of that life, expresses himself in a definitive and transcendental language that suggests in a few unforgettable "words" the meaning of existence. The same expression appears in the *Flaying of Marsyas* (Kroměříž, Czechoslovakia, Nat. Gall.): the work is less a fable than a symbology, since the cruel violence of the action and the hallucinatory reddish ghost of Marsyas lose their physical substance in a glowing fume of light.

The last example of Titian's portraiture is the impressive profile of the artist in the Prado self-portrait. His gaunt face is made spiritual by the marks that time has etched in his thin, drawn features and by the slightly dimmed sky blue of the cavernous eyes, the pupils fixed in a stare that seems to look beyond the visible world. It is a face illuminated from within, a face of unbounded wisdom, and the master's hand, surrounded

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

by his voluminous black garment, holds a brush between the fingers.

At this point, aware of his approaching death, Titian asked to be buried in the Chapel of the Crucifix in S. Maria Gloriosa dei Frari, where his fortune had begun with the *Assumption*, and with this wish in mind he promised the Franciscans a painting of the Pietà. The painting was put aside after disputes with the friars, and death overtook the painter on Aug. 27, 1576, before he had completed the work (PL. 101). Finished by Palma Giovane, it was placed in the Venetian Church of S. Angelo and after the demolition of the church was moved to the Accademia. Restoration of the altarpiece has revealed that Palma's contributions to it are rather limited.

Titian's artistic and spiritual last testament lies in this *Pietà*, in which the culmination of the drama is reached in the dominant figure of Mary Magdalene, who with her arms uplifted is crying out her sorrow. The figures are seen against the background of a rusticated portal with a small mosaic semidome of gleaming gold, which is flanked by the powerful figures of Faith and Moses. In the right-hand corner there is a small votive painting of Titian and his son Orazio praying before the Madonna.

The conclusions of scholars concerning Titian's graphic art are still not unanimous. In the 20th century this problem has been discussed by Von Hadeln (1924, 1927), who may be regarded as having laid the foundations for such study, by Fröhlich-Bum (1928, 1929), and by H. Tietze and E. Tietze-Conrat, who have achieved more positive results in their fundamental volume on Venetian drawings (1944).

Even in his initial drawings (IV, PL. 276) Titian's style goes beyond the influence of Bellini and, though subtle, clear, and precise, expresses a completely original animation and force. In these early stages a leaning toward Giorgione's art is evident in the choice of lyrical subjects and especially in his manner of "drawing without outline," as Vasari said, to achieve a more atmospheric effect, as well as his use of a softer chromatic medium, as, for example, in the half-length bust of a woman in the Uffizi. Besides drawing with pen and ink, Titian also began to use charcoal, which was better suited to his pictorial purposes.

By the time of his early maturity the expressive power of Titian's drawing was exceptionally marked, as is clearly illustrated by the two known studies (Berlin, Kupferstichkabinett; Frankfurt am Main, Städelsches Kunstinstitut) for the Averoldo altarpiece (1522) in the Church of SS. Nazaro e Celso in Brescia. In these studies the soft lines of his early drawings are replaced by a more modeled treatment, with the volumes accentuated by incisive intersecting lines. This technique, alternating with instances of still greater economy and dynamism, led toward a style of drawing of ever-increasing rapidity and synthesis that aimed toward new concepts.

Later, toward 1550, Titian's drawing style became more expressionistic, as he sought to convey more the inner spirit of things than their actual physical appearance. At this stage his designs are enmeshed in a multitude of lines that contend with one another in an excited frenzy, so that the very outlines of the figures are lost within the flow of a new rhythm that surpasses the limits of the subjects. The drawings of this period have come to be recognized as the works of a genius who was in advance of his age.

Titian's paintings and drawings were frequently engraved on wood and copper by his contemporaries. It is supposed that Titian himself sometimes drew directly on wood, entrusting the engraving to others. This supposition is accredited by Vasari's discussion of the woodcut of the alterpiece *Madonna and Child in Glory with Six Saints* (Pin. Vat.) for S. Nicolò dei Frari, as well as by a self-portrait engraved by Giovanni Britto, showing the master in the act of drawing on a wood block. The spirit and imprint of Titian's style, which he was able to give to woodcuts, were inevitably weakened by the absence of his direct touch when the engraving was on copper. These were carried out by the etchers alone and with the principal aim of popularizing the artist's works.

Titian had pupils and assistants early in his career. Their collaboration consisted in the purely manual and technical work and in the first draft of secondary elements, which Titian would then work over and finish. The participation of his assistants increased in his mature and late years. As far as is known, many were members of his family or close relatives, as was often the case in the studios of important artists, but, in addition, a number of Venetian and foreign artists collaborated with Titian. When he first opened his workshop in the area of S. Samuele in 1513, Titian brought with him as helpers Antonio Buxei and Ludovico di Giovanni, the latter a former assistant of Giovanni Bellini.

The first of Titian's collaborators was his brother Francesco, who must have worked with him from the time of the frescoes (1510–11) for the Scuola di S. Antonio in Padua, but who was also an independent artist (Morassi, 1956). He is also known to have worked with Titian in the ancient Loggia del Capitanio in Vicenza in 1521. Francesco probably continued to collaborate with his brother from time to time until his death at Pieve di Cadore in 1559 or 1560. One of Titian's most faithful and frequent collaborators was his second son, Orazio (b. before 1525; d. 1576), who accompanied him to Augsburg, Rome, and certainly on other journeys. In his own works, however, he shows himself to be a weak and awkward painter. Cesare Vecellio (1521–1601), son of a cousin of Titian's father, was also an able assistant but a mediocre artist. Marco Vecellio (1545–1611), known as Marco di Tiziano, son of a second cousin, was brought up in Titian's house and helped the master in the last years of his life; but his works show little talent (Valcanover, 1951).

Other collaborators, outside the family circle, were Girolamo Dente, called Girolamo di Tiziano (ca. 1510–ca. 1566), a faithful pupil and capable helper, but himself a limited painter; Jan Stephan van Calcar (ca. 1499–1546/50), whom Vasari refers to as Giovanni the Fleming, an excellent painter, who fled from Flanders in 1536/37 and then remained in Titian's studio for several years; and Lambert Sustris (ca. 1515/20–ca. 1584), variously designated as a Fleming, a German, or a Paduan, an excellent painter who worked with Titian for a short time. Other recorded assistants or pupils were Natalino da Murano and Damiano Mazza (Fiocco, 1929). Among the foreigners were Emmanuello of Augsburg, who became an excellent portrait painter, the German Christoph Schwartz (1545–92), and the Dutchman Dirck Barendsz. (1534–92), about whom little is known. El Greco also worked in Titian's studio for a short time. In the final years of his life Titian was assisted by Palma Giovane, who after the master's death completed the *Pietà* in the Accademia in Venice. Another follower and imitator was Pietro Muttoni, known as Pietro della Vecchia.(1605–78), who sometimes copied works of Titian and Giorgione.

Titian's influence extended beyond the limits of his country and his time, through its effect on such universal geniuses as El Greco, Rubens, Van Dyck, Velázquez, and Rembrandt, whose art would have been inconceivable without the lessons learned from Titian. His art was admired in the 18th century, but only in the second half of the 19th century was his ultimate style "rediscovered" and understood.

In about seventy years of artistic activity Titian created a great number of masterpieces and exceeded the production of any other great artist, including Rubens, Rembrandt, and Goya. Titian's genius exploded with incredible precocity and remained at a summit of excellence as a result of the incessant search for perfection until his death. Any division of Titian's *œuvre* into periods is arbitrary, having only a scholarly significance and practical intention. In reality, there were no real breaks in his development, nor were there any substantial changes in direction. An over-all analysis of his art reveals instead an enrichment of ideas through new contacts, new horizons, and exploration in new fields, as well as a rethinking of youthful attitudes and reelaboration of themes in different keys. There were, however, no breaches in the continuity of his vision of the world. Titian's pictorial faculty was extraordinarily rich, enabling him to depict the lyrical, the dramatic, the epic, and the sacred or profane. His portraits are documents of a live, attendant humanity. His perception of nature, ever acute and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

truly Pandean, coexists with a sincere religious feeling, and it is perhaps owing to the latter that Titian's art, especially in his late works, reaches into the most intimate regions of existence, to the borders of a world that ceases to be apprehended by the eye by being transformed into sensations and metaphysical significance.

Nevertheless, it is necessary to divide Titian's pictorial development into periods for better understanding of his art. In his first period, while developing the ideals and especially the lively color effects of Giorgione in a more naturalistic and direct manner, Titian also established a new Phidian canon of human beauty and incarnated the forms with warm and tender flesh colors, without the vividness and detachment of those used by Giorgione, who created, on the contrary, a broader range and more elegiac fusion. Titian's art of this period, with its fluent use of color and its sensitive and delicate touches, constitutes an enchanted vision of the real world freshly discovered by a young spirit and captured in images of glorious joyfulness.

In his middle period, stretching approximately from 1520 to 1545, Titian furthered his youthful achievements with more vigorous accents. His conception of the human figure grew progressively less hedonistic and was in essence endowed with a new dignity. His color, which remained vibrant, became denser, at times almost monochromatic, through a completely new technical procedure that was of fundamental importance for later centuries. The lyrical sense of the world was almost imperceptibly replaced by a greater awareness of the tragic in life.

In his last period the spirituality of his art became more intense. Through a process of synthesis he established a deeply personal language that gave his painting a new expressive life. The figures of Titian's last years, phantoms evoked by a spirit dedicated to another, eternal existence, were no longer tangible bodies, but immanent apparitions of sublime moral significance, aloof from triviality as if immersed in the burning essence of another universe.

The style of Titian's last years was understood neither by his contemporaries (except for Tintoretto), who, like Palma Giovane, merely imitated some of its external aspects, nor by those who came after him, with a few exceptions, most notably Rembrandt and a few other extraordinary artist spirits. It was not until the middle of the 19th century that his true greatness began to be understood.

SOURCES. M. Sanuto, I diarii, Venice, 1496–1533; P. Aretino, Lettere, 6 vols., Venice, 1538–57, Paris, 1609; P. Pino, Dialogo di pittura, Venice, 1548 (ed. R. and A. Pallucchino, Venice, 1946); L. Dolce, Dialogo della pittura, intitolato L'Aretino, Venice, 1557, London, 1770; Vasari; F. Sansovino, Venetia città nobilissima et singolare, Venice, 1581; G. P. Lomazzo, Trattato dell'arte della pittura, Milan, 1584 (Eng. trans., R. Haydock, Oxford, 1598); Tizianello, Breve compendio della vita del famoso Tiziano Vecellio di Cadore, Venice, 1622; C. Ridolfi, Le maraviglie dell'arte, Venice, 1648, Rome, 1965; M. Boschini, La carta del navegar pitoresco, Venice, 1660; M. Boschini, Le ricche minere della pittura veneziana, Venice, 1674; F. Baldinucci, Notizie de' Professori del disegno, 6 vols., Florence, 1681–1728; J. von Sandrart, Academia nobilissimae artis pictoriae . . . , Nürnberg, 1683; M. Michiel, Notizia d'opere di disegno . . . (16th cent. ms. in Bib. Marciana, Venice), ed. J. Morelli, Bassano, 1800 (Eng. trans., P. Mussi, The Anonimo, London, 1903).

BIBLIOG. P. A Orlandi, Abecedario pittorico, Bologna, 1704; G. B. Milesio, Descrizione del Fondaco dei Tedeschi (1715), in M. Brunetti, Il Fondaco nostro dei Tedeschi, Venice, 1941; C. de Brosses, Lettres familières écrites d'Italie a quelques amis, en 1739 et 1740, 2 vols., Paris, 1858; A. M., Zanetti, Varie pitture a fresco de' principali maestri veneziani, Venice, 1760; F. Algarotti, Saggio sopra la pittura, Venice, 1762, London, 1764, Paris, 1769; A. M. Zanetti, Della pittura veneziana, Venice, 1771; L. Lanzi, Storia pittorica della Italia, Bassano, 1789 (Eng. trans., T. Roscoe, The History of Painting in Italy, London, 1828); S. Ticozzi, Vite dei pittori Vecelli di Cadore, Milan, 1817; B. Gonzati, La Basilica di S. Antonio di Padova, 2 vols., Padua, 1852–53; T. Gar and B. Malfatti, Lettera di G. Della Torre a Cristoforo Madruzzo, del 1548, Calendario Trentino, 1854; G. F. Waagen, Treasures of Art in Great Britain, 3 vols., London, 1854; J. Burckhardt, Der Cicerone, Basel, 1855 (Eng. trans., Mrs. A. H. Clough, London, 1908); A. Ronchini, Delle relazioni di Tiziano coi Farnesi, Atti-DeSPa, Province modenesi e parmensi, II, 1864; G. Campori, Lettere artistiche inedite, Modena, 1866; G. Campori, Tiziano e gli Estensi, Nuova Antologia, IX, 1874, pp. 581–620; J. A. Crowe and G. B. Cavalcaselle, Titian: His Life and Times, 2 vols., London, 1877; G. B. Cadorin, Dei tre quadroni dipinti da Tiziano per la sala del Pubblico Palazzo di Brescia, Venice, 1879; G. Morelli (pseud. of I. Lermolieff), Die Werke italienischer Meister in den Galerien von München, Dresden und Berlin, Leipzig, 1880; W. Braghirolli, Tiziano alla corte dei Gonzaga di Mantova, Atti e Mem. della R. Acc. virgiliana di Mantova, 1881; G. Lafenestre, Les dernières années du Titien, L'artiste, 1886; G. Lafenestre, La vie et l'œuvre de Titien, Paris, 1886; G. Morelli (pseud. of I. Lermolieff), Kunstkritische Studien über italienische Malerei, Die Galerien Borghese und Doria Panfili in Rom, Leipzig, 1890; E. Delacroix, Journal, 3 vols., Paris, 1893 (Eng. trans., W. Pach, New York, 1961); G. Morelli (pseud. of I. Lermolieff), Kunstkritische Studien über italienische Malerei, Die Galerie zu Berlin, Leipzig, 1893; A. Venturi, Il Museo e la Galleria Borghese, Rome, 1893; F. Wickhoff, Les écoles italiennes au Musée impérial de Vienne, GBA, 3d ser., IX, 1893, pp. 130–47; B. Berenson, The Venetian Painters of the Renaissance, London, New York, 1894; C. Justi, Das Tizianbildnis der Königlichen Galerie zu Cassel, JhbPreussKSamml, XV, 1894, pp. 160–74; C. Justi, Tizian und Alfons von Este, JhbPreussKSamml, XV, 1894, pp. 70–80; C. Justi, Die Bildnisse des Kardinals Hippolyt von Medici in Florenz, ZfbK, N.S., VIII, 1897, pp. 34–40; H. Knackfuss, Tizian, Bielefeld, Leipzig, 1897; C. Phillips, The Earlier Work of Titian, London, New York, 1897; C. Phillips, Titian: A Study of His Life and Works, London, New York, 1898; G. Gronau, Tizian, Berlin, 1900 (Eng. trans., A. Todd, London, 1904); F. Wickhoff, Venezianische Bilder, Die Andrier des Philostrat von Tizian, JhbPreussKSamml, XXIII, 1902, pp. 118–20; M. Hamel, Titien, Paris, 1903; O. Fischel, Tizian, Stuttgart, 1904; G. Gronau, Die Kunstbestrebungen der Herzöge von Urbino, Tizian und der Hof von Urbino, JhbPreussKSamml, XXV, 1904, pp. 3–13; P. Kristeller, Il trionfo della Fede, Berlin, 1906; D. von Hadeln, Zu Tizian in Padua, RepfKw, XXXI, 1908, pp. 168–69; C. Gerola, Il supposto ritratto del Fracastoro dipinto del Tiziano, Archivio Storico Veneto, 1910, pp. 208–14; C. Ricketts, Titian, London, 1910; G. Ludwig, Archivalische Beiträge zur Geschichte der venezianischen Kunst, Aus dem Nachlass von G. Ludwig (ed. by W. Bode, G. Gronau, and D. von Hadeln), Italienische Forschungen, IV, Berlin, 1911; A. Luzio, La Galleria dei Gonzaga, Milan, 1913; V. Basch, Titien, Paris, 1919; L. Hourticq, La jeunesse de Titien, Paris, 1919; G. Lorenzetti, Per la storia del "Cristo portacroce" della chiesa di San Rocco in Venezia, Milan, 1919; T. Hetzer, Die frühen Gemälde des Tizian, Basel, 1920; A. E. Popp, Tizians Lukrezia und Tarquin der Wiener Akademie, ZfbK, N.S., XXXII, 1921, pp. 9–13; T. Borenius, Some Reflections on the Last Phase of Titian, BM, XLI, 1922, pp. 87–91; W. Suida, Unbekannte Bildnisse von Tizian, Belvedere, I, 1922, pp. 168–74; E. Waldmann, Tizian, Berlin, 1922; D. von Hadeln, Zeichnungen des Tizian, Berlin, 1924; R. Longhi, Giunte a Tiziano, L'Arte, XXVIII, 1925, pp. 40–50; G. Lorenzetti, Venezia e il suo estuario, Venice, 1926 (Eng. trans., J. Guthrie, Venice and Its Lagoon, Rome, 1961); P. Beroqui, Tiziano en el Museo del Prado, Madrid, 1927; M. Dvořák, Geschichte der Italienischen Kunst im Zeitalter der Renaissance, II, Munich, 1927–28; D. von Hadeln, Two Drawings by Titian, Art in America, XV, 1927, pp. 127–31; R. Longhi, Cartella tizianesca, Vita artistica, II, 1927, pp. 216–26; W. Suida, Rivendicazioni a Tiziano, Vita artistica, II, 1927, pp. 206–15; A. Foratti, Tiziano nella Scuola del Santo a Padova, Cronache d'arte, V, 1928, pp. 123–32; L. Fröhlich-Bum, Studien zu Handzeichnungen der italienischen Renaissance, JhbKhSammlWien, N.S., II, 1928, pp. 163–98; G. Gronau, Alfonso d'Este und Tizian, JhbKhSammlWien, N.S., II, 1928, pp. 233–46; Venturi, IX, 3; G. Fiocco, Venetian Painting of the Seicento and the Settecento, Florence, New York, 1929; L. Fröhlich-Bum, Die Landschaftszeichnungen Tizians, Belvedere, VIII, 1929, pp. 71–78; L. Hourticq, Le problème de Giorgione, Paris, 1930; B. Berenson, Italian Pictures of the Renaissance, Oxford, 1932 (Greenwich, 1963); W. Suida, Tiziano, Rome, 1933; L. Venturi, Italian Paintings in America, III, Milan, New York, 1933; A. Alvarez Cabanas, La ultima Cena, cuadro de Tiziano existente en las salas capitulares de El Escorial, Madrid, 1934; D. von Hadeln, Girolamo di Tiziano, BM, LXV, 1934, pp. 84–89; W. Suida, New Light on Titian's Portraits, BM, LXIV, 1934, pp. 272–78; W. Suida, Fremde Meister um Tizian, Belvedere, XII, 1934–37, pp. 11–16; G. Fogolari, Mostra di Tiziano, catalogo delle opere (Galleria internazionale d'arte moderna), Venice, 1935; T. Hetzer, Tizian, Geschichte seiner Farbe, Frankfurt am Main, 1935; W. Suida, Tizian, die beiden Campagnola und Ugo da Carpi, CrArte, I, 1935–36, pp. 285–88; G. Gronau, Documenti artistici urbinati, Florence, 1936; H. Tietze, Tizian, Leben und Werk, Vienna, 1936; H. Tietze and E. Tietze-Conrat, Tizian-Studien, JhbKhSammlWien, N.S., X, 1936, pp. 137–92; G. Gronau, Alcuni Quadri Di Tiziano Illustrati Da Documenti, BArte, XXX, 1937, pp. 289–96; J. Zarnoski, L'atelier de Titien: Girolamo di Tiziano, Dawna Sztuka, I, 1938, pp. 107–30; A. M. Brizio, Tiziano, Grande Dizionario Enciclopedico, X, Turin, 1939, s.v.; N. A. Gurvich, Tiziano, Leningrad, 1940; T. Hetzer, Tiziano Vecellio, ThB, s.v.; F. Mauroner, Le incisioni di Tiziano, Venice, 1941; G. Grappe, Titien, Paris, 1942; A. Morassi, Giorgione, Milan, 1942; H. Tietze and E. Tietze-Conrat, The Drawings of the Venetian Painters of the 15th and 16th Centuries, New York, 1944; E. Tietze-Conrat, Titian as a Letter Writer, AB, XXVI, 1944, pp. 117–23; R. Pallucchini, ed., Cinque secoli di pittura veneziana (exhibition cat.), Venice, 1945; G. Fiocco, Francesco Vecellio, Note su Cesare Vecellio, Lettere e Arti, II, 1946; R. Longhi, Viatico per cinque secoli di pittura veneziana, Florence, 1946; A. Morassi, Il Tiziano di Casa Balbi, Emporium, CIII, 1946, pp. 207–28; B. Berenson, Ristudiando Tintoretto e Tiziano, Arte Veneta, I, 1947, pp. 22–36; G. Fiocco, Un Tiziano dimenticato, Arte Veneta, I, 1947, p. 293; S. Ortolani, Restauro d'un Tiziano, BArte, XXXIV, 1948, pp. 44–53; E. Tietze-Conrat, Titian's Design for the Battle of Cadore, GBA, 6th ser., XXXIV, 1948, pp. 237–42; R. Huyghe, Le Titien, Paris, 1949; J. Babelon, Titien, Paris, 1950; G. F. Hartlaub, Tizian's "Liebesorakel" und seine "Kristallseherin": Ein Beitrag zur weltlichen Ikonographie der Renaissance, ZfbK, IV, 1950, pp. 35–49; H. Tietze, Titian, Paintings and Drawings, London, 1950 (2d ed.); G. Delogu, Tiziano, Bergamo, 1951; C. Fabbro, Notizie storiche sul casato di Tiziano, in I Vecellio (exhibition cat.), Belluno, 1951; G. Fiocco, I pittori Vecellio, Dispense universitarie, Padua, 1951; F. Valcanover, I Vecellio (exhibition cat.), Belluno, 1951; C. Nordenfalk, Titian's Allegories on the Fondaco de' Tedeschi, GBA, 6th ser., XL, 1952, pp. 101–08; W. Suida, Miscellanea Tizianesca, Arte Veneta, VI, 1952, pp. 27–41, X, 1956, pp. 71–81, XI, 1957, pp. 71–74, XIII–XIV, 1959–60, pp. 62–67; L. Vertova, ed.,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Tiziano, Milan, 1952; G. Fiocco, Profilo di Francesco Vecellio, Arte Veneta, VII, 1953, pp. 39–48, IX, 1955, pp. 71–79, X, 1956, pp. 90–94; R. Pallucchini, Tiziano, Lezioni universitarie, Bologna, 1953–54; G. Fiocco, Il ritratto di Sperone Speroni dipinto da Tiziano, BArte, XXXIX, 1954, pp. 306–10; A. Morassi, Esordi di Tiziano, Arte Veneta, VIII, 1954, pp. 178–98; E. Tietze-Conrat, Un soffitto di Tiziano a Brescia conservato in un disegno del Rubens, Arte Veneta, VIII, 1954, pp. 209–10; L. Baldass, Eine Porträtskizze vom jungen Tizian, ZfKw, IX, 1955, pp. 193–200; D. Cecchi, Tiziano, Milan, 1955; G. A. Dell'Acqua, Tiziano, Milan, 1955; T. Pignatti, Giorgione, Verona, 1955; T. Rousseau, Titian, New York, 1955; F. Valcanover, Il polittico vecelliano di Sedico, Archivio Storico di Belluno, Feltre e Cadore, 1955; P. Zampetti, ed., Giorgione e i Giorgioneschi (exhibition cat.), Venice, 1955; G. Fiocco, A Small Portable Panel by Titian for Philip II, BM, XCVIII, 1956, pp. 343–44; G. Gamulin, Un polittico del Tiziano nella cattedrale di Dubrovnik (Ragusa), Venezia e l'Europa, XVIII Int. Cong. on the H. of Art, Venice, 1956, pp. 269–71; A. Morassi, Ritratti del periodo giovanile di Tiziano, Festschrift für W. Sas-Zaloziecky zum 60. Geburtstag, Graz, 1956, pp. 125–31; A. Morassi, Tiziano, Gli affreschi della Scuola del Santo a Padova, Milan, 1956; E. Tietze-Conrat, Archeologia Tizianesca, Arte Veneta, X, 1956, pp. 82–89; B. Berenson, Italian Pictures of the Renaissance, The Venetian School, 2 vols., London, 1957; U. Christoffel, Tizian, Stuttgart, 1957; C. Fabbro, Notizie storiche sul casato di Tiziano, Archivio Storico di Belluno, XXIX, 1958, pp. 132–34, XXX, 1959, pp. 23–27, XXXI, 1960, pp. 30–35, 72–76, 145–48, XXXII, 1961, pp. 34–40; R. Pallucchini, Un Nuovo Ritratto Di Tiziano, Arte Veneta, XII, 1958, pp. 63–69; G. Fiocco, La Crocifissione di Tiziano all'Escuriale e Orazio Vecellio, in Studies in the History of Art Dedicated to W. Suida on His Eightieth Birthday, London, 1959, pp. 244–46; D. Frey, Tizian und Michelangelo, Zum Problem des Manierismus, Mouseion, Studien aus Kunst und Geschichte für O. H. Förster, Cologne, 1960, pp. 102–12; F. Valcanover, Tutta la pittura di Tiziano, 2 vols., Milan, 1960 (Eng. trans., S. J. Tomalin, Tiziano Vecelli, 1477–1576, All the Paintings of Titian, 4 vols., New York, 1960); L. Baldass, Zur Erforschung des "Giorgionismo" bei den Generationsgenossen Tizians, JhbKhSammlWien, LVII, 1961, pp. 69–88; R. Pallucchini, Studi Tizianeschi, Arte Veneta, XV, 1961, pp. 286–95; J. Neumann, Marsyas écorché, Prague, 1962; A. Morassi, ed., Titian, Greenwich, 1965; E. Panofsky, Problems in Titian, Mostly Iconographic, 1968.

Antonio MORASSI

Illustrations: PLS. 89–103.

TOMMASO DA MODENA. The painter Tommaso da Modena, son of Barisino dei Barisini, also a painter, was born at Modena in 1325 or 1326; he died shortly before 1379. His early years seem to have been divided between Modena and Bologna, where he may have received his early training in the workshops of miniaturists, perhaps in that of Nicolò da Bologna. In 1349 he is known to have been in Treviso, where he spent considerable periods thereafter. Some scholars (Bertoni and Vicini, 1904, 1917; Venturi; Berenson, 1932) believe that Tommaso also traveled to Bohemia, where the decoration of the Chapel of the Holy Face in Prague has been attributed to him; however, others (Schlosser, 1898; Coletti, 1963) deny that he was ever in that country, although there are indisputable connections between Tommaso's art and Bohemian painting of that period.

Probably among Tommaso's earliest works are the fresco fragment with three saints in the Cathedral of Modena; the panels framing a small altarpiece or reliquary in Baltimore (Walters Art Gall.); and a portable altar in Modena (Gall. Estense). The latter, which bears a partially indecipherable date that is probably 1345, shows contacts with Bolognese and Tuscan painting and indicates some uncertainty of direction.

In Treviso, early works include the fresco of the Mystical Marriage of St. Catherine and another fresco of the same saint in the Church of S. Caterina, which carry echoes of Vitale da Bologna (q.v.). The frescoes portraying illustrious Dominicans (PL. 105), made for the chapter house of the Dominican priory, date from 1352; in the subtle interpretation of the setting, they exemplify the most vigorous and expressionistic element of 14th-century Bolognese painting, and the powerful physiognomical characterization is unequaled in Italian painting of the time. From the same time or a little later are three frescoes in the Church of S. Nicolò: St. Jerome, St. Romuald, and SS. Agnes and John the Baptist (PLS. 104, 105), distinguished from the later frescoes by their refined, almost calligraphic detail. But there are also serene, vigorous forms that are given admirable expression in the St. Agnes and in a Virgin (restored) in the Church of S. Lucia. In a fresco of the Virgin with saints in the Church of S. Francesco, the powerful, restless artist broke the usual symmetry; the types are rendered in a warm, intense range of colors, the robes fall in deep folds, and the 14th-century Gothic idiom is transfigured by the painter's very personal naturalism and the subtle chiaroscuro that shapes the solid figures. In these frescoes there are hints (as in the cloak of the Virgin) of a taste that was to be developed in the second half of the century for the tonal contrasts afforded by the rippled edges and sharply broken folds of robes (a device seen in Bohemian painting in the first half of the century).

The triptych and diptych now in the Chapel of the Holy Cross in the castle of Karlštejn (PL. 106) are definitely later than 1356; the Virgin is of the same buxom, sensual type as the women in the probably later St. Ursula frescoes (PL. 107), but the Child is purely Sienese. To the same period seem to belong the small polyptych in the Pinacoteca of Bologna, characterized by a grave and balanced feeling for form and space, and a panel with SS. James the Great and Anthony of Padua in Verona (PL. 106). Toesca (1912) has attributed to Tommaso the frescoes of about 1360 in the Church of S. Francesco in Mantua narrating, in a tranquil and spacious style, legends of a Franciscan saint, although they show some differences from the Treviso frescoes.

In the cycle of St. Ursula (PL. 107; VI, PL. 361), the subject has stimulated a remarkable narrative treatment. The dominance of the human masses — which nearly overflow the frames in these crowded scenes — over the architecture shows unquestionable links with Bolognese painting as interpreted by a brilliant follower of Vitale da Bologna and of Jacopino de' Bavosi's lively style; the dating of this famous cycle may therefore fall between 1360 and 1366 rather than earlier. This Bolognese influence is confirmed in the scene of the abdication of the pope and in the gesture and the heightened characterization of the baptizing figure in the scene of the baptism of the English prince, which is reminiscent of the St. Joseph in Vitale's *Nativity* (PL. 376). In this St. Ursula cycle Tommaso attained an extremely flexible art that not only interprets the characters but also subtly captures the animated gesticulation (with more restraint than the Bolognese works) and emphasizes the climactic moment of the action with an immediacy that is found again only in Carpaccio (q.v.). The figures are caught in the act of speaking, their lips parted; one senses the whispers of the women and the buzz of the gesticulating crowd, in which the animated grimaces of the old stand out, all contributing to the unforgettable liveliness of Tommaso's art.

The powerful *Decapitation of John the Baptist* (PL. 107) in the Cathedral of Trent (unquestionably Tommaso's) was executed after 1368. A panel with Virgin and Child in the Saibene Collection in Milan, a miniature of the same theme in the Roberto Longhi Collection in Florence, a Man of Sorrows panel in the Episcopal Palace in Treviso, and the fresco fragment of a bishop-saint in S. Caterina in Treviso can be considered authentic works of Tommaso; the appreciably inferior fresco of the Virgin with St. Catherine in S. Caterina in Treviso, the detached fresco of the Virgin in S. Agostino in Modena, and other frescoes in Treviso must be attributed to his workshop. The drawings in the Albertina in Vienna and those formerly in the Ecole des Beaux-Arts in Paris (now lost) must be attributed (Toesca, Tr) to the school of Verona.

Coletti (1924–25, etc.), the most dedicated and sensitive student of Tommaso's work, saw in the great Lombard painter the first example of physiognomic "objectivism," earlier than the Flemish and of great importance for the painting and illumination of the Po Valley as well as for the development of the International Gothic style.

BIBLIOG. L. Lanzi, Storia pittorica dell'Italia, Bassano, 1795; S. D'Agincourt, Storia dell'arte, VI, Mantua, 1801, p. 208 f., pl. 133; D. M. Federici, Memorie trevigiane . . . . I, Venice, 1803, pp. 52, 58, 186; L. Crico, Lettere sulle belle arti trevigiane, Treviso, 1833, p. 285; J. von Schlosser, Ein veronesisches Bilderbuch und die höfische Kunst des XIV Jahrhunderts, JhbKhSammlWien, XVI, 1895, pp. 144–230; J. von Schlosser, Tommaso da Modena und die ältere Malerei in Treviso, JhbKhSammlWien, XIX, 1898, pp. 240–83; J. A. Crowe and G. B. Cavalcaselle, Storia della pittura in Italia, IV, Florence, 1900, pp. 100 ff. (Eng. ed., III, London, 1908); G. Bertoni and E. P. Vicini, Tommaso da Modena, pittore modenese del secolo XIV, Atti e Mem. della Deputazione di Storia patria per le provincie modenese, III, 1904, pp. 141 ff.; Venturi, V, VII; L. Testi, Storia della pittura veneziana, I, Bergamo, 1909, pp. 255 ff.; J. J. Berthier, Le châpitre de St.-Nicolò de Trevise, Rome, 1912; P. Toesca, La pittura e la minia-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

tura nella Lombardia, Milan, 1912; G. Bertoni and E. P. Vicini, Tommaso da Modena a Treviso, L'Arte, XX, 1917, p. 350; L. Coletti, Tommaso da Modena nello svolgimento della pittura veneta, BArte, IV, 1924–25, p. 214; Van Marle, IV, 1924, pp. 355 ff.; A. Venturi, Anconetta sconosciuta di Tommaso da Modena nella Pinacoteca di Bologna, L'Arte, XXVII, 1924, p. 14; L. Coletti, Tommaso da Modena e le origini del naturalismo nella pittura, RIASA, III, 1, 2, 1931; B. Berenson, Italian Pictures of the Renaissance, Oxford, 1932; L. Coletti, A Painting by Tommaso da Modena, BM, LX, 1932, p. 105 f.; L. Coletti, L'arte di Tommaso da Modena, Bologna, 1933 (with bibliog.); L. Coletti, Un affresco, due miniature e tre problemi, L'Arte, XXXVII, 1934, pp. 101–22; L. Coletti, ThB, XXXIII, 1939, pp. 270–72; L. Coletti, I primitivi, III, I Padani, Novara, 1947, pp. 40 ff.; L. Coletti, Pittura veneta dal Tre al Quattrocento, Arte Veneta, I, 1947, pp. 14 ff., 251, 252, 259, 262; Toesca, Tr, pp. 751 ff.; B. Montuschi, Il problema di Tommaso da Modena miniatore, Paragone, II, 17, 1951, pp. 13 ff.; F. Zeri, Trenta dipinti antichi della Coll. Saibene, Milan, 1955; L. Coletti, La mostra da Altichiero a Pisanello, Arte Veneta, XII, 1958, pp. 241 ff.; L. Magagnato, Da Altichiero a Pisanello, Verona, 1959, pp. 8 ff.; G. Paccagnini, Mantova, Le arti, I, Mantua, 1960, pp. 268 ff.; L. Coletti, Tommaso da Modena, Venice, 1963 (with bibliog.).

Edoardo ARSLAN

Illustrations: PLS. 104–107.

TOOLS. See UTENSILS AND TOOLS.

TOSA SCHOOL. Japanese school of painting originating in the 14th century. This was the only school to continue working in the tradition of Yamato-e (q.v.), which had played an important role in the painting of the late Fujiwara (898–1185) and the Kamakura period (1185–1333), but was overshadowed by ink painting (*suiboku-ga*) in the Muromachi period (1334–1573). The Tosa family of the 17th century, aiming to glorify their heritage, claimed as their ancestor the Yamato-e painter Fujiwara Tsunetaka (second half of the 12th cent.). The evidence, however, is not sufficient to prove a direct line of descent from this artist. Regarded by some as more likely to have been the originator of the Tosa school is the artist Fujiwara Yukimitsu (active 1352–71), who held the post of *edokoro azukari* (head of the painters' bureau). But Yukimitsu's family lineage is not clear; nor is it likely that he called himself by the name of Tosa.

Much more clearly understood are the life and work of Yukihiro (d. ca. 1434), who is sometimes recorded in the Tosa family's genealogy as son or brother of Yukimitsu. Yukihiro's name, with the title Tosa Shōkan (lord of Tosa), appears frequently from 1406 to 1434 in the official records of the court and of the Bakufu (military government). Thus there are firm grounds for regarding Yukihiro as the legitimate founder of the Tosa family. His *œuvre* is recorded in various contemporary literary sources, which contain numerous references to his Buddhist paintings and portraits. There are also some works by Yukihiro extant. He was one of a group of six painters — the others being Fujiwara Mitsukuni, Kasuga Yukihide, Rokkaku Jakusai, Awataguchi Ryūkō (also called Takamitsu), and Eishun — who worked in 1414 on the *Yūzū Nembutsu Engi* (Legend of the Echoing Nembutsu), a painted hand scroll, or *emaki* (Kyoto, Seiryōji), which was later abundantly reproduced in the form of wood-block prints.

Yamato-e was a type of painting that appealed to the aristocracy; its decline was inevitable during the Muromachi period, since the country was ruled by the warrior class (*buke*) and the court nobles performed a continually diminishing role in every phase of Japanese life. Nonetheless, the system of *edokoro azukari* survived at the court, and the Ashikaga shoguns of the Muromachi period even adopted the system for the Bakufu. Occupying the post of *edokoro azukari* as a hereditary office, the Tosa family could boast the oldest artistic heritage in the history of Japanese painting. Their monopoly of the highest position to which an artist could attain contributed to their becoming the most powerful school among the artists working in the Yamato-e tradition. Further prestige accrued to them from the naming of Yukihiro, Hirokane (active 1457–65), and some other members of the family as *edokoro azukari* of the Ashikaga shoguns as well as of the court; thus they enjoyed the patronage of both the aristocracy and the warrior caste.

The most important artist of the Tosa school, and the artist who established the family's pictorial style, was Mitsunobu (1434–1525). Said to have been the son of Mitsuhiro and grandson of Jukihiro, Mitsunobu was appointed *edokoro azukari* in 1469. In succeeding years he was honored with a number of high official titles rarely bestowed on artists. Mitsunobu's position was further strengthened when, in 1518, he inherited the post of *edokoro azukari* of the Bakufu. Not only was Mitsunobu held in high esteem in official circles; he also established close personal friendships with many influential court nobles. Because some of these titled friends kept diaries and day-by-day accounts of events at the court, Mitsunobu's activities there are well documented. Throughout his long career Mitsunobu maintained his standing as the greatest and most respected living Yamato-e painter. His *œuvre* covers a wide range: he painted Buddhist icons, *emaki*, large screens, and portraits of royalty. The most famous of the extant Buddhist paintings by Mitsunobu is a set of ten hanging scrolls representing ten kings of hells (PL. 111). The paintings of the ten kings (Jūō) are executed in brilliant colors and accented by strong brushstrokes in the manner of Kara-e (Chinese-style ink painting). The style of this set of scrolls influenced Mitsunobu's followers and became typical of the Buddhist paintings of later Tosa artists. By combining the strong play of Chinese ink and the bold brushstrokes of Kara-e with the brilliant colorism of Yamato-e, Mitsunobu created a totally new effect that was to dominate Japanese painting for many years to come. He is said to have been inspired to develop this style by Kanō Motonobu, who is believed to have married his daughter. This marriage seems to have given fresh inspiration to the Kanō school (q.v.) as well. Motonobu, Masanobu, and some other members of the powerful Kanō family also worked occasionally in the Tosa manner, and the mixing of these two opposing styles served to open a new avenue to the Kanō artists.

Among the portrait paintings by Mitsunobu are one representing the emperor Go En-yū (1397–1470?), painted in 1492 (Kyoto, Unryu-in Monastery), and another representing Momoi Naoaki, a famous dancer (Tokyo, Nat. Mus.). Mitsunobu's forte, however, was the narrative painting of the *emaki*. He painted many of these hand scrolls, the most famous being the *Seikōji Engi* (History of the Seikōji) in the National Museum in Tokyo; the *Tenjin Engi* (Legend of Tenjin) of 1503, in the Kitano Shrine in Kyoto; and the *Kiyomizudera Engi* (also known as *Seisuiji Engi*, or History of the Seisuiji) of 1517, in the National Museum in Tokyo. He also painted a fourth scroll, to replace one that had been lost, for the set of the *Ishiyamadera Engi* (History of the Temple of Ishiyamadera), in the Ishiyamadera (Ishiyama, Shiga prefecture). Apparent in these narrative paintings are Mitsunobu's special skill in portraying human activities set against the rustic countryside and his gift of capturing the warmth and charm of the religious life and sentiment of the rural folk.

The artistic tradition established by Mitsunobu was continued by his son and pupil Mitsumochi (d. ca. 1550), whose name is also read Mitsushige. About 1523, Mitsumochi was appointed *edokoro azukari*. Like his father, Mitsumochi demonstrated a versatile skill. He painted Buddhist icons, such as those dating from 1536 in the Daigoji in Kyoto; in 1550 he decorated the walls of a Buddhist monastery at Kannonji in Shiga prefecture; and he produced many other paintings in a courtly narrative style, the finest being the *Kuwanomidera Engi* (History of the Kuwanomi Temple; PL. 112). Landscape details and figures in the *Kuwanomidera Engi* closely resemble those in the work of his father, but Mitsumochi went a step further in creating the decorative and brilliant effect so typical of the later phase of Yamato-e. This aspect of Mitsumochi's style is particularly evident in a pair of screens representing pines on a beach that has traditionally been associated with his name (Tokyo, Coll. J. Kosaka).

The civil wars toward the end of the Muromachi period caused a disintegration of the social structure and threatened the political supremacy of the Ashikaga shoguns. Mitsumoto (1530–69), the eldest son of Mitsumochi, was appointed *edokoro azukari* in 1541; he probably held the corresponding post under the Bakufu since he later joined the shogun's army. He was

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

killed in battle in 1569, and his death signaled a temporary interruption in the Tosa monopoly of the office of *edokoro azukari*. On the sudden death of Mitsumoto, Mitsuyoshi (1539–1613), believed to have been a younger brother, lost his connection both with the court and with the Bakufu and was obliged to move away from Kyoto in search of new patrons. In Sakai, a bustling port city south of Osaka, Mitsuyoshi ultimately secured the patronage of rich merchants. At times, however, he was constrained to work as an assistant to the Kanō painters, the rivals of the Tosa family. Only a small number of Mitsuyoshi's works survive. The finesse of his careful, minute style is well exemplified by an album of the *Tale of Genji* (Gengi Monogatori) in the National Museum in Kyoto (PL. 109). Illustration of the *Tale of Genji*, the greatest literary masterpiece of ancient Japan, in small album form became almost a trademark of the Tosa family, and many later Tosa artists excelled in it. Mitsunori (1584–1638), a son or pupil of Mitsuyoshi, managed to return to Kyoto about 1634, accompanied by his young son and pupil Mitsuoki. Mitsunori's fragile and delicate style is known to many through the album of the *Tale of Genji* in the Freer Gallery of Art, Washington, D.C.

The incessant warfare of the Momoyama period (1573–1615) brought about a drastic change in the nation's political and social conditions. Inspired by the taste of the ruling war lords, a bold and brilliantly decorative style of painting on large-scale screens emerged. During this period the Tosa family was on the verge of extinction. But their prestige and prosperity were revived in the Edo period (1615–1867), largely owing to the talents of Mitsuoki (1617–91), who was appointed *edokoro azukari* of the court in 1654. Thus renewed, the ancient family tradition was to continue to the 19th century. In choice of subject matter, use of brush and color, and composition, Mitsuoki's paintings reflect a successful blending of the Chinese style of painting and Yamato-e. His fame rests on his delicate paintings of flowers and birds executed in minute and meticulous brushstrokes with fine and delicate colors, preeminent among them the paintings of quails (PL. 110). In these flower and bird paintings by Mitsuoki there are echoes of the style of a Chinese painter of the Southern Sung dynasty, Li An-chung (III, PL. 266). Mitsuoki also painted many large screens and *emaki*; his most famous hand scrolls are the *Tenjin Engi* (Legend of Tenjin) in the Kitano Shrine, Kyoto, and the *Ōdera Engi* (History of the Temple of Ōdera) in the Aguchi Shrine, Osaka.

Mitsuoki's style was maintained until the 19th century by his followers, who continued his specialty of charming, genteel pictures of birds and flowers. Their work, including the paintings of Mitsuoki's son Mitsunari (1646–1710), tended to be formalized and academic.

An artist who did not belong to the Tosa family and yet claimed to be an artistic descendant of Mitsunobu was Iwasa Matabei (1578–1650), also known as Katsumochi or Shōi. Matabei signed his name as the "later stream of Mitsunobu" on one of the votive tablets of the Thirty-six Poetic Immortals (Tōshōgū, Kawagoe, Saitama prefecture). But there is no evidence that Matabei studied with any of the Tosa artists. Indeed his paintings show an indebtedness to works of the Kanō, Unkoku, and other schools (PL. 113). By signing himself as he did, he probably meant to indicate that he was inspired by the ancient masters of Yamato-e as represented by Mitsunobu.

The traditional Tosa style was practiced more faithfully by Sumiyoshi Jōkei (1599–1670), formerly known as Naiki and Hiromichi; he was a follower of Tosa Mitsuyoshi and claimed to be a younger brother of Mitsunori. Jōkei went to the new capital city of Edo (present-day Tokyo) in 1662 to serve the Tokugawa shoguns, and he broke away from the Tosa family to found a separate school of his own, taking the name of Sumiyoshi at the command of the emperor. He had a strong interest in preserving the ancient tradition of Yamato-e, and in 1626, with the help of other artists, he made copies of 20 remaining scrolls of Tokiwa Mitsunaga's Scrolls of Annual Rites and Ceremonies (*Nenjū Gyōji Emaki*) of the 12th century. In 1682 Jōkei's son, Gukei (1631–1705), was made *oku-eshi*, one of the most respected and coveted appointments under the Tokugawa shoguns, and he played an important role in popularizing Yamato-e in Edo. His screen painting *Rakuchū Rakugai Zu* (Inside and Outside Kyoto) in the National Museum in Tokyo accurately and vividly depicts life in the ancient capital of Kyoto.

The late Tosa style evinced little creative or inventive energy during the 18th century, but in the 19th century a last sparkle of life was produced by a group of politically minded artists who did not belong to the Tosa family. To this group, later known as the Fukko Yamato-e (Revivalists of Yamato-e), belonged Reizei Tamechika (also known as Okada Tamechika; 1823–64), Tanaka Totsugen (1768–1823), and Ukita Ikkei (1795–1854). Their aim was to revive the ancient Yamato-e tradition of the Fujiwara and Kamakura periods, and for this reason they made copies of old *emaki* and painted mainly historical subjects. Their esthetic ideals also reflect the political ideology of the loyalists of the late Edo period, who advocated and worked for the restoration of the sovereignty of the imperial house.

Here the long artistic life of the Tosa school ends. Although it had stimulated the birth of new schools of painting — such as the Sōtatsu-Kōrin, the Sumiyoshi, and the Fukko Yamato-e — which derived from it the impetus to create new styles, the Tosa school was to gain no new followers, principally because of the innumerable Western styles of painting that reached Japan from Europe and America at the end of the 19th century and the beginning of the 20th.

BIBLIOG. Masterpieces Selected from the Fine Arts of the Far East, 15 vols., Tokyo, 1913; A. Morrison, The Painters of Japan, 2 vols., London, 1913; L. Binyon, Painting in the Far East, London, 1923; H. Minamoto, An Illustrated History of Japanese Art, Kyoto, 1935; K. Hamada, Nihon Bijutsu Kenkyū (Study of Japanese Art), Tokyo, 1940; Index of Japanese Painters, Tokyo, 1941; J. Buhot, Histoire des arts du Japon, Paris, 1949; M. Narazaki, On Katsumochi Matabei Iwasa, Kokka, 686, May, 1949, pp. 119–46; I. Kondō, Pageant of Japanese Art, Painting, II, Tokyo, 1952; R. T. Paine and A. Soper, The Art and Architecture of Japan, Harmondsworth, 1955; S. Tani, Kamigata of Sanjōnishi Sanetaka: Supplement to Study on Tosa Mitsunobu, Bijutsu-shi, V, 1, Oct., 1955, pp. 1–6; Y. Yashiro, ed., Art Treasures of Japan, II, Tokyo, 1960; T. Akiyama, Japanese Painting, Geneva, 1961; I. Kondō, Japanese Genre Painting: The Lively Art of Renaissance, Tokyo, 1961.

Miyeko MURASE

Illustrations: PLS. 108–113.

TOTEMISM. At the end of the 19th century the term "totemism" was introduced to describe an aspect of the social and religious organization of many primitive peoples. According to the most current interpretation, totemism consists in an emotional relationship that, at the most archaic levels of history, is created between single individuals (or groups of individuals) and animate or inanimate manifestations or elements of nature. The phenomenon, however, appears to be far more complex and elusive, and progress in research has resulted in the dismissal of interpretations that are too inclusive or too unilateral. A similar process in criticism has taken place in regard to the artistic expressions of totemism. Just as it was once believed that in totemism a very ancient or even primordial form of religion had been discovered, so the expression "totemistic art" was coined as being synonymous with an embryonic stage of man's esthetic manifestations. The word "totem" in many contexts replaced that of "idol" or "fetish" to designate many of the sculptural and pictorial creations of peoples of a low level of culture. Such interpretations have now been abandoned or at least deprived of a great part of their substance. In the present article those artistic manifestations formerly designated as totemistic on the basis of uncritical evaluations are not dealt with. The purpose of the article is rather to clarify the meaning and limits of the concept of totemism as it is presently accepted by scholars and to discuss the legitimacy of its extension to artistic manifestations.

SUMMARY. The problem of totemism (col. 162). Artistic manifestations (col. 165).

THE PROBLEM OF TOTEMISM. The concept of totemism — a phenomenon whose great ideological and social complexity and whose variability from one people to another soon became

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

apparent — was the object of divergent theories even in the early phases of its discovery and analysis. The definition that has found greatest favor is probably that of J. G. Frazer (1910): Totemism is to be understood as an emotional relationship between an individual or a group of individuals on the one hand and certain manifestations of animate and inanimate nature on the other, which may in certain cases be expressed in the belief in a common descent.

A better and more convincing definition of totemism could hardly be found, yet it does not adequately cover the multitude of totemistic forms. The totemistic relationship was first ascertained among the North American Woodland Indians; on the basis of their culture and the cultures of the Australian tribes and territorial groups that were subsequently discovered, the following conclusions may perhaps be drawn: What is, rightly or not, known as totemism is substantially a concept that does not yet single out man and his social alliances and cultural achievements from the comprehensive processes of nature. In a philosophical sense mankind, his animate and inanimate environment, and the universe are seen as an entity. In such a view, oriented to the wholeness and indivisibility of the world and cosmos, may lie the key to an understanding of the so-called "totemistic relationship," that is, of a bond — hardly explainable rationally — between single individuals or social units and particular species of animals and plants and other forms of nature that are significant to man's life rhythm or stimulate him to meditation.

It is principally among the nomadic hunting and food-gathering tribes — but also among agricultural peoples and the cattle-raising nomads of all continents except Europe — that totemistic concepts can develop into a cultural or ideological system according to the above definition. This fact stimulated the older diffusionist schools of ethnology to speculate on the origins and historical age of totemism. These schools attributed the origins of totemistic ideas to the hypothetically oldest stage in the history of mankind, in which the economy was on a hunting and food-gathering level. The appearances of these ideas in the so-called "later strata," the cultivating and cattle-raising cultures, were interpreted as vestiges or survivals. More recent ethnology and cultural anthropology, grown more modest in their aims and more mature, have recognized that it is just as difficult to draw definitive conclusions regarding the origins and age of totemism as it is to define the inception of social life, productive farming (cultivation and cattle raising), political organization, etc. Other scholars contributed one-sided and therefore inadequate observations to the study of totemism because they overemphasized either the religious or the social aspect.

Nearly all authors agree at least that the concepts and the thinking processes classified as totemistic are distant from those of modern man and that they can perhaps be considered "archaic." This point of view has been questioned, however, in a study by Lévi-Strauss (1962). For this author, totemism as the expression of certain spiritual and social needs represents a concept that is rooted in a dualistic vision of the world and is shared to some extent by Europeans as well. For this and various other reasons, he believes that the existence of totemism should be questioned, the concept being merely a theoretical construct of scholarship. Nevertheless, all the phenomena of the spiritual and social life of primitive peoples recorded and studied as totemistic by whole generations of scholars remain a reality.

The word "totem" (derived from *ototeman*) was borrowed from the language of the Chippewa (Ojibwa), a North American food-gathering and hunting tribe in the area north of the Great Lakes belonging to the ethnic and linguistic group of the Algonquians. It means approximately "it (he) is of my kin" and defines specific social relationships based on tribal mythology. The original clans in Chippewa mythology were traced back to six supernatural beings, which in the beginning of time came forth from the water and presented themselves to the primordial Indians. One of these returned to its element, the sight of it having killed a living man. The others remained in this world and acted as the bearers of culture to the Indians. They became ancestors of the totemistic Chippewa clans: fish, crane, grebe, bear, and marten; that is, the supernatural beings were identified with these animal species or interpreted as their lords or spiritual representatives. It is patently a concept that, when projected into the domain of cult and religion, draws no sharp lines between the world of man and that of animals. Besides this totemistic relationship, which may be described as indirect and collective and which associates mythically and perhaps mystically specific social groups with specific animal species of water, earth, and air, the Chippewa have totemistic relationships that can be considered direct and individual. These involve the tutelary and helping spirits which the individual wins for himself through certain experiences of a supernatural sort and which likewise belong to the animal world. But these are not so much the actual animal species as their "spirit doubles," that is, their essences in the world of the invisible. Identical or similar concepts, which comprise individual as well as collective (direct and indirect) totemistic relationships, are found not only among the Chippewa and other hunting tribes of the Algonquian tribal group but also in those North American ethnic units which, at various periods of history, established themselves as farmers (for example, the Iroquois of New York State).

The totemistic ideas of the hunting and food-gathering tribes of Australia, who with the North American Indians are considered the representatives of a classic totemistic concept of existence, derive from the same principles. In an even more comprehensive and radical way than in North America, totemism in Australia creates specific collective and individual bonds both in the social domain and in that of cult and religion. The essential concept of totemism — the common mythical ancestorship of man and forms of his natural surroundings — has found its clearest and most evident expression in the central and northern areas of Australia. There is hardly an element in the natural or supernatural world that cannot become a totem and thereby a symbol or expression of the above-mentioned partnership between man and the world into which fate has set him. Thus it is not at all surprising that, among other things, supernatural beings, hurricanes, poisonous snakes and insects, sickness, weapons, domestic implements, and recently, owing to contact with the white man's civilization, products of technology such as airplanes and automobiles are incorporated into the totemistic concept. This phenomenon, almost without comparison in totemistic societies outside Australia, would seem to refute a widespread theory according to which social groups give preference to edible animals as totems, the animals' utility being, in other words, a decisive factor.

According to Elkin (1954), Australia's totemic system comprises the following four types: (1) Sexual totemism. Each of the sexes allies itself to one or more totems that make manifest the contrast to the other sex. (2) Clan totemism. Social units of varying strengths, organized on territorial as well as supraterritorial bases, have their own totems, which become the expression of their group solidarity. (3) Class, or tribal-halves, totemism. Most Australian single tribes, tribal groups, and territorial groups are dichotomous, that is, they are organized into two exogamous classes, or halves, which in certain cases (particularly in the southeastern, central, and northern areas) are further subdivided into four or even eight subsections. This complicated class system, which like the clan system is anchored in totemism, is decisive for marriage arrangements; membership in a given class, section, or subsection determines, at least theoretically, the choice of marriage partner. Sexual totemism, which is basically confined to the southeastern and northwestern territories of Australia, as well as clan totemism and class totemism, allocates to the respective groupings — that is, the collective societies — their particular places in social and cult life and in addition forms an invisible bond between the human groupings and their natural environment on the one side and their mythicohistorical past on the other. (4) Individual totemism. This form of totemism assumes the task of placing the individual, freed from his various collective bonds, in harmonious contact with the forces of nature as well as with the supernatural world. In Australia and North America, as well as in Arctic Siberia, it is chiefly shamans, medicine men, proph-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ets, or inspired mediums who become the conveyers of the so-called "individual totems." These totems are generally stylized images of animals (especially snakes), various kinds of stones and crystals, or numinous anthropomorphic beings, which take over the role of personal tutelary or helping spirits. While collective or social totems (indirect totems) — which may be designated as institutional — are handed down patrilineally or matrilineally, the individual totems are usually, as in North America, the result of personal dream or trance experiences, that is, they must be won by an act of will through contact with the forces of creation and of the beyond.

All these phenomena seem to indicate that the so-called "totemistic" concept among the North American Woodland Indians of the past and, to a far greater extent, among the Australian aborigines played a major part in molding the cultures of these peoples. The various totemistic affiliations, binding the individual and the social formations, not only place man in a close relationship with nature and the cosmos but also provide him with his status within the cult and the secular life of his society and, in addition, relate him to the mythico-historical past of his group and to the forces of creation, fertility, and procreation which proceed from the group and whose timeless efficacy he must continually reaffirm by ceremonial rites.

Totemistic systems of such vast proportions, which bestow expression and structure upon the religious, social, and, to some extent, political and economic spheres of given traditionalist cultures, are rarely found outside the above-mentioned areas. In Melanesia — for example, New Ireland, the Trobriands, the Santa Cruz archipelago — the island societies have clearly defined totemistic relationships. The mythical ancestors of the clan or village community, sprung from the earth or the sea, are identified with certain natural species (generally animals, more rarely plants). Similar beliefs exist in Polynesia, an area whose culture differs fundamentally from that of the hunting and food-gathering tribes of the North American Indians and Australians and from that of the Melanesians with their horticultural economy. The island cultures, especially those of central and northern Polynesia, are distinguished by strict political organizations, based on an aristocratic hierarchy, a sacred kingship, and a class of theologically educated priests. In other words, totemistic ideas and lines of thought can be traced even in civilizations classed by many authors as "high cultures." Although in such cultures these ideas do not represent a phenomenon *sui generis*, they still determine the general picture of the relationships between man and the elements of nature (Firth, 1930–31).

With few exceptions the totemistic systems that are known among African societies are similar to those in Melanesia and Polynesia. Among the West African Tallensi (Fortes, 1945) and Dogon (Griaule, 1937), the Azande of central Africa (Baxter and Butt, 1953), and the East African Nuer (Evans-Pritchard, 1956), the totems of social groups and of individuals become almost abstract symbols of the human being, of his ancestors and their immortality. It is a totemistic relationship that, in varying degrees, is purely external and formalistic and only incidentally expresses certain similarities between specific human and animal types.

ARTISTIC MANIFESTATIONS. It is to be expected that such a widespread complex of concepts and traditions as totemism, which influences the religious-philosophical and social life of sizable groups of humanity in various parts of the world and may even determine the totality of a culture (North America and Australia), should naturally also influence artistic activity. It is, however, doubtful whether one can speak of a totemistic art. For example, in the art of the North American Woodland Indians the relationship between the sculptural works and conventional two-dimensional motifs on the one hand and the totemistic concepts and life principles on the other cannot always be ascertained. It can be proved, in fact, that the famous "totem poles" of the Indians of the northwest Pacific Coast (X, PL. 356), monumental and bizarre carvings with polychrome painting, have nothing to do with totemism.

In Melanesia, too, it is difficult to establish the existence of a totemistic art. Examples of sculpture such as the wooden bowls in the shapes of animals of the Admiralty Islands and of San Cristobal in the Solomon Islands (PL. 117) or realistically represented crocodiles decorating the prows of river canoes in New Guinea were interpreted as totemistic without clear evidence for such associations. In the ethnological sciences the opinion was (and to some extent still is) widespread that naturalistic or stylized representations of animals in primitive art prove the existence of totemistic concepts. But this is an oversimplification of the question. Clear totemistic references are, however, evident in the conventional motifs on the dance clubs of the Santa Cruz islanders (PL. 114), in the so-called "taro masks" and bull-roarers from southern New Guinea and the Solomon Islands (PL. 114), and particularly in the artistically executed and brightly painted *malanggan* carvings from New Ireland (PLS. 115, 116; IX, PLS. 447, 448, cols. 714–715), which, as representations of totemistic associations, are at the center of cult life in some of these Melanesian social groups (see MELANESIAN CULTURES).

Some certain — and some questionable — associations between reputed totemistic art and social or cult totemism have been exemplified also in Africa. A greatly varied art consisting of masks and sculpture, both in the round and in relief, exists in the Congo region and the West African countries; that is, in cultural areas with strict political organizations based on sacred chieftaincies or kingships (see BANTU CULTURES; GUINEAN CULTURES; SUDANESE CULTURES). Prevalent are stylized and naturalistic representations of animals (PL. 117), which have been interpreted by scholars as tribal or clan emblems symbolizing the relationships between the social groups and their mythico-historical origins. The totemistic concepts, insofar as they can be considered as such, seem to be more or less intellectualized here and are undoubtedly of secondary importance within the over-all cultural picture.

In Australia, on the other hand, where totemism has acquired an all-embracing significance and has influenced all fields of life, every kind of artistic activity seems to be inspired by it. The conventional motifs of an abstract or naturalistic nature decorating objects of daily use, such as household utensils, tools, and arms, always refer to primordial traditions concerning the activities of totemistic ancestors as creators and bearers of culture. These connections between living generations and the beings of their mythical past — who are conceived as the timeless personifications and activators of procreation and fertility — assume particular features in the cult and ceremonial life of social units both large and small. This is true particularly in central, western, and northern Australia, where the cults are centered around sacred objects of stone or wood, complicated sand drawings, and occasionally rock paintings and engravings (see AUSTRALIAN CULTURES). The sacred objects entered ethnological literature under the designation of bull-roarers and churingas, the latter a term borrowed from the language of the central Australian Aranda (Arunta). They are considered the embodiment or the tools of the totemistic primordial ancestors and become for their owners, both as individuals and as members of a collective group, transmitters of the vital force and guarantors of life's security, that is, symbols of a continuity connecting the present with the period of beginning and creation. The geometric motifs decorating them (concentric circles, parallel curved lines, semicircles, etc.) are to be understood as a kind of ideogram, representing certain local mythological traditions (II, PLS. 66, 67, FIGS. 131, 135, cols. 134–136).

A related or identical significance is attributed by many aboriginal groups to their rock engravings and polychrome or monochrome rock paintings (II, PLS. 64, 66, col. 132; X, col. 493). With their varied compositions of symbol-like signs and abstract or naturalistic images of anthropomorphic beings and of plant or animal species, these pictures portray the totemistic traditions of the related social groups or individuals. From such concepts arises the function of the rock pictures as centers of ritual activity for ensuring the increase of totemistic species and as influential forces in the annual rain making — a function, however, that can be documented with certainty only for northwestern Australia.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The polychrome bark paintings (PL. 114; II, PLS. 61, 65, col. 133; X, col. 493) and the figurines of men and animals from the Kimberleys and Arnhemland in northern Australia are to be considered special cases; they are not found in the other regions of Australia. Since nothing definite is known about the historical origins of these atypical art forms, they must be regarded as local manifestations, at least in respect to their form, technique, and expression. As to their meaning and significance, they fit perfectly into the over-all complex of Australian totemistic traditions.

Only in Australia is all artistic expression inspired by a concept of the world that draws only vague boundaries between man, nature, and the cosmos and on occasion ignores as immaterial the categories of time — that is, the differentiation between past, present, and future. It is therefore only in Australia that a totemistic art can be said to exist in the true sense of the word. In other parts of the world, where totemistic concepts are known to influence the social and spiritual life of human groups to varying degrees, as in Oceania and Africa, the art may seem to indicate totemistic references in its sculptural and pictorial representations of animals, plants, cosmic phenomena, and mythical beings, but these prove to be associated with concepts that are in no way totemistic. Totemism may avail itself of art as one of its mediums of expression, but so far the existence of a purely totemistic art cannot be proved.

Helmut PETRI

A particular kind of individual totemism, peculiar to Central America, is nagualism (from the Aztec *nahualli*). According to this belief, the life and destiny of each man, starting from birth, are closely associated with those of an animal, with which the man finds himself in an alter-ego relationship and which constitutes his "double." Pre-Columbian stone statues, probably from the preclassic period of Middle American history and coming mainly from Nicaragua and southern Colombia, represent a man (or, less probably, a deity) seated or standing with a zoomorphic alter ego perched on his back or head (PL. 118). Nagualistic aspects also appear in various art forms of La Venta (Olmec culture), for example in representations of human figures, reclining but with the limbs often strangely contorted and wrapped in the hide of a beast. Nagualistic characteristics are also encountered in some representations of divinities of the Aztec pantheon, as well as in certain images of Quetzalcoatl. In the former, the god sometimes carries on his own head that of his double; or else the face of the god (in some cases, however, almost certainly that of a human being) is represented inside the wide-open fangs of a wild beast. In the latter, Quetzalcoatl's double — i.e., the feathered serpent — rears up behind the anthropomorphic image (e.g., in the stone sculpture from Tula and the frescoes of Chichén Itzá; see MIDDLE AMERICAN PROTOHISTORY). Reflections of a similar belief (but the sources are not explicit on this point and one should therefore consider this merely a hypothesis) may also exist in examples of pre-Columbian Peruvian art. On some vases in the Mochica style, for example, a feline muzzle is clearly visible on the forehead of the personage represented.

* *

BIBLIOG. B. Spencer and F. J. Gillen, The Northern Tribes of Central Australia, London, 1904; J. G. Frazer, Totemism and Exogamy, 4 vols., London, 1910; H. Trilles, Le totémisme chez les Fân, Münster, 1912; W. H. R. Rivers, The History of Melanesian Society, Cambridge, 1914; F. Boas, The Origin of Totemism, AmA, XVIII, 1916, pp. 319–26; A. van Gennep, L'état actuel du problème totémique, Paris, 1920; C. E. Fox, The Threshold of the Pacific, London, 1924; R. Linton, Totemism and the A. E. F., AmA, XXVI, 1924, pp. 296–300; E. Durkheim, Les formes élémentaires de la vie religieuse, 2d ed., Paris, 1925; E. Vatter, Der australische Totemismus, Hamburg, 1925; E. Vatter, Religiöse Plastik der Naturvölker, Frankfurt am Main, 1926; R. E. Latcham, The Totemism of the Ancient Andean Peoples, JRAI, LVII, 1927, pp. 55–87; K. T. Preuss, Die Darstellung des Zweiten Ich unter den Indianern Amerikas, In Memoriam Karl Weule, Leipzig, 1929; S. Chauvet, Les arts indigènes en Nouvelle-Guinée, Paris, 1930; R. Firth, Totemism in Polynesia, Oceania, I, 3, pp. 291–321, 4, pp. 378–98, 1930–1931; D. Jenness, The Ojibwa Indians of Parry Island (Canada Dept. of Mines, B., LXXVIII), Ottawa, 1935; M. Griaule, Blasons totémiques des Dogon, JSA, VII, 1937, pp. 69–78; H. Baumann, Afrikanische Wild- und Buschgeister, ZfE, LXX, 3/5, 1938, pp. 208–39; H. Baumann, D. Westermann, and R. Thurnwald, Völkerkunde von Afrika, Essen, 1940; F. E. Williams, Drama of Orokolo, Oxford, 1940; O. Falsirol, Il totemismo o l'animalismo dell'anima, Naples, 1941; M. Fortes, The Dynamics of Clanship among the Tallensi, London, 1945; R. Linton, P. S. Wingert, and R. d'Harnoncourt, Arts of the South Seas, New York, 1946; T. G. H. Strehlow, Aranda Traditions, Melbourne, 1947; A. Bühler, Neuirland und Nachbarinseln (Führer durch das Museum für Völkerkunde zu Basel), Basel, 1948; R. H. Lowie, Social Organization, New York, 1948; B. Malinowski, Magic, Science and Religion, Boston, 1948; G. Koch, Kunst der Südsee, Celle, 1951; J. Haekel, Die Vorstellung vom Zweiten Ich in den amerikanischen Hochkulturen, Wiener Beiträge zur Kulturgeschichte u. Linguistik, IX, 1952, pp. 124–88; P. T. W. Baxter and A. Butt, The Azande and Related Peoples, London, 1953; A. P. Elkin, The Australian Aborigines, 3d ed., Sydney, London, 1954; H. Petri, Sterbende Welt in NW-Australien, Braunschweig, 1954; E. E. Evans-Pritchard, Neuer Religion, Oxford, 1956; A. R. Radcliffe-Brown, Method in Social Anthropology, Chicago, 1958; E. Leuzinger, Afrika: Kunst der Negervölker, Baden-Baden, 1959; W. Krickeberg, H. Trimborn, W. Müller, and O. Zerries, Les religions amérindiennes, Paris, 1962; C. Lévi-Strauss, Le totémisme aujourd'hui, Paris, 1962 (Eng. trans., R. Needham, Totemism, Boston, 1963).

Helmut PETRI

Illustrations: PLS. 114–118.

TOULOUSE-LAUTREC, HENRI DE. French painter (b. Albi, Nov. 24, 1864; d. Château de Malromé, Sept. 9, 1901). Henri Marie Raymond de Toulouse-Lautrec was a member of the aristocratic family of Toulouse-Lautrec Monfa, of ancient origin. After passing the early years of his life mainly at the Château du Bosc, one of the family estates near Albi, the young Henri was taken to Paris in 1872, where he attended the Lycée Fontanes (now Lycée Condorcet) for some time before being entrusted to private tutors. He was of frail constitution and delicate health, and when in 1878 he slipped on the floor of the family home in Albi, he broke his left femur. He went for treatment to Barèges and Amélie-les-Bains, but in 1879, at Barèges, he broke the other femur. The two fractures proved very serious, probably because of a congenital defect in the knitting of the bones, leaving Toulouse-Lautrec maimed for the rest of his life. His legs remained short and stumpy, while his torso developed normally. This handicap, however, as his letters and the recollections of those who knew him during that period attest, did not lead him to despair, even though he felt deeply his disabled condition, all the more because he belonged to a class for whom outdoor activities such as horseback riding were social obligations. It was probably because of his disability that his father, unlike his mother, took no interest in his life and career. But although in 1885 Toulouse-Lautrec left his family to live alone, returning home only periodically, it does not seem that the deformity, at least in its early stages, produced in him that inferiority complex which has sometimes been assumed as a basis for the interpretation of his work.

In any case, it was during his convalescence that Toulouse-Lautrec began to devote himself to painting, encouraged by his mother, who saw it as an activity able to distract her son's thoughts from his disablement. When his vocation as a painter manifested itself, Toulouse-Lautrec was already a cultured young man who had shown even while attending classes at the Lycée Fontanes that he could master the humanities. Painting now offered him a powerful means to express his intelligence in an environment — that of the French nobility in the second half of the 19th century — in which, as Lionello Venturi (1950) wrote, "he could not remain without feeling humiliated, all the more so because intelligence was not particularly valued in such circles." However, although Toulouse-Lautrec abandoned this environment and reacted against it at an early age, he never disavowed it. His later predilection for subjects of popular life, the theater, the circus, the fashionable cabarets (IV, PL. 281; VII, PL. 435), and the brothels does not mean that he did not retain a certain aristocratic approach that ennobled such subjects even while he raged against them. Thus the artist delineated his figures — in paintings, drawings, and lithographs, and even in posters — with an outline that lends them elegance and affirms the priority of style over veristic detail and over excessive idealization. It is just this synthesis of realism and idealism that distinguishes the art of Toulouse-Lautrec: a synthesis realized in the fluid line that unites the various planes

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

of the figures, in a manner later adopted by Modigliani (q.v.). For all its originality of presentation and of displacement of masses, this technique falls within the great tradition of French drawing — a tradition which, in the 19th century, descended from David to Ingres and Degas (qq.v.) and which found, in the work of Toulouse-Lautrec, one of its most distinguished expressions.

Although Toulouse-Lautrec was well acquainted with impressionism (q.v.), which was revealed to him above all through the paintings of Manet and Renoir (qq.v.), he was a long way from it in his work. However, he adapted its spirit of synthesis to his own ends, substituting for analytical rendering of details an immediate and concise expression that identified the faces and characters of his figures with a few effective strokes and free touches of color. Hence the climate created by impressionism was necessary to him, even though the chief influence on him was Degas, a painter who — precisely in his use of line — differed substantially from the other impressionist painters. Toulouse-Lautrec was thus in a position to reject all academic compromise, indeed, even to satirize a painting style like that of Puvis de Chavannes (q.v.), which, overcharged with literary symbolism, was outside the esthetics that had arisen from the impressionist revolution. It was Puvis de Chavannes' *Sacred Grove* (Lyons, Mus. B.A.) that Toulouse-Lautrec parodied in 1884 (New York, Coll. Mr. and Mrs. Henry Pearlman). Maurice Joyant, who was one of the artist's great friends, refers (1926–27, p. 50) to a letter in which Toulouse-Lautrec said: "I have tried to depict the true and not the ideal. It is a defect, perhaps, for warts do not find favor in my eyes, and I like to embellish them with playful fur, to round them, and to put a shining end on them. I do not know if you bridle your pen, but when my pencil moves, it is necessary to let it go, or — crash! . . . nothing more." To "depict the true," therefore, did not mean the pure and simple return to a realistic taste but rather the awareness of a reality that was not dissimilar from — in fact, was carried beyond — the reality postulated by the impressionists.

Toulouse-Lautrec's initial training as a painter took place under the supervision of a painter friend of the counts of Toulouse-Lautrec, René Princeteau, and the young Henri was also struck by the works of John Lewis Brown. These were, however, passing influences; in general, Toulouse-Lautrec preferred to work independently, even then displaying a preference for subjects drawn from the daily life under his eyes, as evidenced, for example, by the small canvas of 1881, representing his father, Alphonse de Toulouse-Lautrec, driving his mail coach to Nice (PL. 119). As in this instance, the aristocrat's passion for horses, as well as the influence of Princeteau, a painter of equestrian scenes, often determined the subjects of these early works, immediately before and after 1880 (e.g., the *Soldier Saddling His Horse*, 1879; the *Trotting Horseman*, 1879; the *Amazon*, 1880; the *White Horse Gazelle*, 1881; all, Albi, Mus. Toulouse-Lautrec). The artist was already showing himself well on the way to mastering his means and directing them toward a pictorial expression that presaged his later stylistic novelty and was far from the realistic approach of a Courbet (q.v.) or the romantic approach of a Delacroix (q.v.) to similar subjects. In some of his early paintings, Toulouse-Lautrec did not hesitate to use flamboyant and glaring colors, to lay them on in abruptly broken strokes, even to make them harsh and clashing in order to achieve atmospheric effects that, while they lack the transparency and the delicate gradations of impressionist painting of the period, are always vivid and dynamic. The special merit of these paintings derives from a certain ingenuousness or, better, an immediate, unfiltered contact with reality; but the audacity of the chromatic combinations is so deliberate as to exclude any suspicion that it masked an inability to realize his aims. Toulouse-Lautrec was already possessed of a special vision and was seeking the most suitable means of expressing it.

Since he intended to make painting his profession, Toulouse-Lautrec was aware of the necessity for systematic training. Toward the end of 1882 he entered the atelier of Léon Bonnat in Paris. This master rejected all innovation: he had been, and remained, one of the most determined adversaries of impressionism; he permitted his pupils no freedom whatever and left no possibility for personal interpretation. To him, Toulouse-Lautrec's drawing was "atrocious," and the latter moved on, in 1883, to the atelier of Fernand Cormon — an equally academic painter who was, however, more disposed to understand, if not to justify, innovations. During these years of the definitive development of Toulouse-Lautrec's style, Paris saw the emergence of new movements in art that consciously went beyond impressionism: pointillism, symbolism, the painting of Gauguin (q.v.). In Cormon's studio Toulouse-Lautrec had the opportunity to meet many artists, among them Emile Bernard and, in 1886, Van Gogh (q.v.), who had just arrived in Paris. During the same period, too, the fashion for Japanese prints was spreading — a taste that coincided with the characteristic development of line in Toulouse-Lautrec's drawing. It was Degas, as already mentioned, who impressed him deeply at this time, sometimes even in his choice of the same subjects; but Gauguin too, though so different in temperament, contributed something to his formation. Yet it was Toulouse-Lautrec's own temperament that, "much more concentrated and less extensive than Gauguin's, quickly transformed all he had learned into an absolutely personal style. Already around 1890 his style was definitively shaped" (Venturi, 1950).

In the years immediately preceding 1890, Toulouse-Lautrec focused his interest increasingly on that world which, until the not-too-distant end of his life, was the environment in which he felt most at home: the world of the circus, the theater, the cabarets, the world of Montmartre, which was beginning to acquire the atmosphere that was to make it famous as the typical expression of *la belle époque*. Toulouse-Lautrec met Aristide Bruant, a writer of songs and owner of cabarets such as the Mirliton; and under Bruant's influence he made drawings illustrating these songs, which were published in various journals, among them Bruant's *Mirliton*, named for his cabaret. In 1888 he could paint a canvas like the *Equestrienne of the Fernando Circus* (Chicago, Art Inst.), in which the color, no longer placed naturalistically, became autonomous in order to underline the linear dynamics governing the entire composition. In 1890 began the Moulin Rouge cabaret scenes (VII, PL. 435), in which were to appear the figures that Toulouse-Lautrec immortalized in paintings and drawings: La Goulue (PL. 119), Valentin le Désossé, Jane Avril (PL. 121). In 1891 the artist created the first poster for the Moulin Rouge (PL. 120), a work of extraordinary effectiveness: in the center the light-colored figure of La Goulue dancing; in the foreground, establishing an area of contrast, the darker figure of Valentin le Désossé; in the background the black silhouettes of the patrons. The compact arrangement and the linear movement are perfectly suited to the decorative requirements of the poster, which replaced that of Jules Chéret on the walls of Paris. Toulouse-Lautrec, from this beginning, revolutionized the art of the poster (cf. XI, PLS. 380, 383), synthesized it, and gave it an autonomy of expression hitherto unknown.

Toulouse-Lautrec had tried his hand at lithography for the first time in 1885 to illustrate a song by Bruant, "À Saint-Lazare" (Paris, Bib. Nat.); he returned to this medium in 1892, to stay with it until his death. His enormous production, mostly of subjects from the world of cabarets and theaters, demonstrates a skillful and meticulous technique. The stroke became ever more summary, the planes more unified. Toulouse-Lautrec ennobled the medium and raised it to the level of art. In addition to many lithograph posters and individual plates, he produced numerous imposing lithograph series: 11 of his lithographs, together with another 11 by Henri Gabriel Ibels, appeared in 1893 in the album *Le Café Concert*, with text by Georges Montorgueil; 16 lithographs devoted to the singer Yvette Guilbert were printed in 1894 with text by Gustave Geffroy, and another 13 portraits of actors and actresses in 1895; 11 appeared in 1896, in the women's journal *Elle*; more of Yvette Guilbert were printed in London in 1898; and 22 of his plates illustrated *Les Histoires naturelles* of Jules Renard, published in 1899 (this project had first been proposed to Renard by Toulouse-Lautrec in 1895).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The world whose spirit Toulouse-Lautrec captured so vividly included also the brothels, from which he began to draw subjects in 1892, the best-known undoubtedly being his painting *Au Salon de la rue des Moulins* (1894; PL. 123); the Musée Toulouse-Lautrec in Albi also has a pastel of the same subject.

The question arises how far Toulouse-Lautrec's painting influenced his lithographic work and vice versa. His lithography certainly drew greater authority from his painting; on the other hand, the fluidity and smoothness of the lithographic medium contributed to the dynamism and descriptive power of his paintings. The same subjects recur in both media — Jane Avril, Yvette Guilbert, the patrons of the theaters and cabarets — but the color treatment is subtly different. It is, of course, more elaborate in the paintings, and the colors are more luminous and, so to speak, surer, because here the artist did not have to allow for variations in printing and inks. It is this very ability to grasp the subtle differences of two techniques and to adapt the same vision to two different means of expression which demonstrates Toulouse-Lautrec's genius and power.

The last years of his short life were his most prolific and produced masterpieces in both painting and lithography. To these years belong, in addition to many lithographs and posters, paintings such as *The Bed* (1894; PL. 122) — a stupendous achievement of color and line, done for a brothel, *La danse de la Goulue* (1895; PL. 119), and *La Clownesse Cha-U-Kao* (1895; Winterthur, Switzerland, Reinhart Coll.), as well as portraits of various other people, including the cabaret singer May Belfort (1895; Cleve. Mus. of Art), Loïe Fuller of the Folies-Bergères (1893), Dr. Gabriel Tapié de Céleyran (the artist's cousin and companion in his night life; 1894), and the actress Marcelle Lender (1895; last three, Albi, Mus. Toulouse-Lautrec). Toulouse-Lautrec analyzed this world of his pitilessly but without false moralizing and, above all, without self-righteousness.

Toulouse-Lautrec did not hold himself aloof from the artistic life of his day: in 1888 he exhibited a painting in the Salon des Indépendants and in 1893 he exhibited at the Goupil Gallery. In 1894 he was in Brussels, and again in 1896, when he participated in the first exhibition of "The Free Esthetics." In the same year he went to Spain and Portugal, and in 1898 to London. But in the following year, his health by then completely ruined by excessive drinking, he was placed in a nursing home in Neuilly-sur-Seine, on the outskirts of Paris. Even there he did not cease working but drew from memory his favorite circus scenes. When he was discharged — thanks largely to the published appeals of some of his friends — he went to Le Crotoy and then to Le Havre, where he embarked for Bordeaux in order to settle in the nearby town of Taussat-les-Bains. He was still painting masterpieces, such as *The English Girl of the "Star" at Le Havre* (1899; PL. 124). At the end of 1899 he returned to Paris, where he stayed until May, 1900, then went back to Le Crotoy, Le Havre, and Bordeaux and on to nearby Arcachon. In September he went to stay with his mother in the Château de Malromé, but between April and June of 1901 he was again in Paris. It was at Malromé that he died, on Sept. 9, barely thirty-seven years old.

The legends that have been woven around the life of Toulouse-Lautrec cannot obscure the concrete reality of his work: he was an innovator and the creator of new expressive elements that were to be appreciated and developed by other great painters, among them — to name but one — Picasso.

BIBLIOG. F. Jourdain, L'affiche moderne et Toulouse-Lautrec, La Plume, Nov., 1893; T. Bernard, Toulouse-Lautrec sportsman, La Revue Blanche, May 15, 1895; G. Geffroy, Lautrec, La Vie artistique, 1900; C. Roger-Marx, Toulouse-Lautrec, La Revue Universelle, Dec. 13, 1901; Figaro illustré, special number prepared by M. Joyant and Manzi, 145, Apr., 1902; A. Fontainas, Lautrec, Mercure de France, May–June, 1902; A. Rivoire, Toulouse-Lautrec, La Revue de l'art, Apr., 1902; Klossowski, Die Maler von Montmartre, Berlin, 1903; H. Esswein and A. W. Heymel, Moderne Illustratoren, Henri de Toulouse-Lautrec, Munich, 1904; G. Coquiot, Toulouse-Lautrec, Paris, 1913; L. Delteil, Le peintre graveur illustré, X–XI, Henri de Toulouse-Lautrec, Paris, 1920; T. Duret, Lautrec, Paris, 1920; P. Leclercq, Autour de Toulouse-Lautrec, Paris, 1921; M. Joyant, Henri de Toulouse-Lautrec, 2 vols., Paris, 1926–27; M. Joyant, Lautrec, L'art et les artistes, Feb., 1927; P. de Lapparent, Toulouse-Lautrec, Paris, 1927 (Eng. trans., W. Whitmarsh, London, 1928); F. Fosca, Lautrec, Paris, 1928; G. Jedlicka, Henri de Toulouse-Lautrec, Berlin, 1929 (2d ed., Zurich, 1943); A. Symons, From Lautrec to Rodin, London, 1929; L'Amour de l'art, special number by G. Bazin, T. Bernard, R. Coolus, R. Huyghe, E. Vuillard, Apr., 1931; H. Focillon, Lautrec, GBA, June, 1931; G. Jedlicka, L'écriture de Lautrec, Formes, 1931; P. Mac Orlan, Toulouse-Lautrec peintre de la lumière froide, Paris, 1934; E. Schaub-Koch, Psychanalyse d'un peintre moderne, Henri de Toulouse-Lautrec, Paris, 1935; A. Astre, Henri de Toulouse-Lautrec, Paris, 1938; J. Cassou, Toulouse-Lautrec, L'Art et les Artistes, Apr., 1938; F. Gilles de la Tourette, Lautrec, Geneva, 1938; R. Huyghe, Aspects de Toulouse-Lautrec, La Revue du Tarn, 1938; G. Mack, Toulouse-Lautrec, New York, 1938; T. Natanson, Toulouse-Lautrec, L'Art Vivant, May, 1938; F. Novotny, Drawings of Yvette Guilbert by Toulouse-Lautrec, BM, June, 1939; F. Jourdain, Lautrec, Lausanne, 1941; E. Julien, Dessins de Toulouse-Lautrec, Munich, 1942; W. Rotzler, Les affiches de Toulouse-Lautrec, Basel, 1942; R. von Hoerschelmann, Henri de Toulouse-Lautrec, Munich, 1946; J. Bouchot-Saupique, 62 dessins de Toulouse-Lautrec, Les Arts Plastiques, 7, 1947; M. Delaroche-Vernet-Henraux, Toulouse-Lautrec dessinateur, Paris, 1948; H. Dumont, Lautrec, New York, 1948; C. Roger-Marx, Les lithographies de Toulouse-Lautrec, Paris, New York, 1948; E. Julien, Les affiches de Toulouse-Lautrec, Monte Carlo, 1950; L. Venturi, Da Manet a Lautrec, Florence, 1950 (Eng. trans., F. Steegmuller, Manet to Toulouse-Lautrec, New York, 1950); L. Charles-Bellet, Le musée d'Albi, Albi, 1951; M. G. Dortu, Toulouse-Lautrec, Paris, 1951; M. Florisoone, Lautrec hors du temps, Paris, 1951 (cat.); F. Jourdain, Souvenirs, Arts, 315, June 15, 1951; T. Natanson, Henri de Toulouse-Lautrec, Geneva, 1951; J. Cain and J. Vallery-Radot, Œuvre graphique de Toulouse-Lautrec, Paris, 1951 (cat.); D. Cooper, Henri de Toulouse-Lautrec, New York, 1952; E. Genauer, Toulouse-Lautrec, The Metropolitan Museum of Art Miniatures, New York, 1952; F. Jourdain and J. Adhémar, Toulouse-Lautrec, Paris, 1952; E. Julien, Toulouse-Lautrec au Musée d'Albi, Albi, 1952; C. Roger-Marx and U. Apollonio, Toulouse-Lautrec: L'œuvre graphique, Collection Charell, 1952; J. Lassaigne, Lautrec, Geneva, 1953; F. Gauzi, Lautrec et son temps, Paris, 1954; C. Roger-Marx, Toulouse-Lautrec, Paris, 1957; H. Perruchot, La vie de Toulouse-Lautrec, Paris, 1958 (Eng. trans., H. Hare, London, 1960); P. Huisman and M. G. Dortu, Lautrec by Lautrec, 2d ed., New York, 1968.

Nello PONENTE

Illustrations: PLS. 119–124.

TOWN PLANNING. Town planning is the science that studies all aspects of the urban phenomena. Its purpose is to plan the historical development of these phenomena through the interpretation, reordering, rehabilitation, and functional adaptation of existing urban aggregates; through control of the growth of urban aggregates; through the designing of new aggregates; and through the reform and organization *ex novo* of the relationships of aggregates to one another and to the natural environment.

Town planning is concerned with all the geographic, historical, ideological, cultural, and economic components of urban living, as well as with the associated aspects of technology, hygiene, education, and public assistance. Esthetically the field is related to designing (q.v.) and architecture (q.v.; see also MONUMENTS; STRUCTURAL TYPES AND METHODS).

As an autonomous discipline town planning developed in the 19th century in response to problems intensified by progressive industrialization and the rapid increase in population and traffic.

SUMMARY. The concept of the city (col. 172). Nomenclature (col. 175). Definition of town planning (col. 177). Definition of the city (col. 180): *A geographic versus town-planning definition of the city; Historical-sociological definitions of the city.* Urban space (col. 186): *The archaic world; Ancient urban civilizations; The medieval city; The Renaissance city; The baroque city; Disintegration of urban space; Rediscovery, analysis, and reconstruction of urban space.* Modern utopias (col. 216). Urban planning (col. 224): *The rationalist experiment and the plan of Amsterdam; A new conception; From technical town planning to continuous creative planning, Juridical and economic aspects.* Problems and prospects (col. 235). *Basic data for a town-planning accountancy. Specific problems: a. Residential districts; b. Central-city areas and urban renewal; c. Vehicular traffic; d. Equipped industrial zones; e. Public recreation facilities; Plans for the future.*

THE CONCEPT OF THE CITY. Any study of the urban phenomena, regardless of time or place, must not only take cognizance of the city's activity and unordered expansion but also view the city as an inseparable and active participant in the larger civilization. Evaluation of these observations, along with any preliminary interpretation of the nature of urban dynamics or prediction of future urban structure, leads to a broadening of the horizon of exploration; but it soon becomes

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

apparent that our instruments of knowledge are woefully inadequate. Only in recent times have the complex functions of human settlements in an area and, in fact, the idea of the city itself become at all clear. Preceding this, mankind experienced some five thousand years of urban civilization (and before that, village culture), during which time populations became concentrated in large groups and cities continually formed, flourished, expanded, were transplanted or declined, and were born again — in some cases, repeatedly on the same site. As Patrick Geddes pointed out, villages, cities, or regions are not only "places in space" but "dramas in time" and are therefore part of a dynamic process of development.

In the ancient world the concept of the city, from the palace complex to the polis, was essentially static and spatially delimited. This is apparent from descriptions by historians, geographers, and travelers and from city regulations, from archaeological evidence, and even from the Platonic and Aristotelian hypotheses concerning ideal organization and political rule. All the evidence, despite its great variety, indicates that economic and social stability was desired both in the main urban complex (citadel, sacred center, capital, or commercial center) and in its agricultural area.

Roman territorial organization was composed of successive aggregations of similarly planned areas, each with a central city, economic zones, urban and territorial infrastructures, and civic institutions. The whole was characterized by constant, monotonous, and universal precepts that succeeded for a brief period which was nonetheless decisive for urban history. The economic and social equilibrium of the basic territorial units integrated within the central political system was guaranteed over an extensive area (save for exceptional cases, such as the maritime republics).

The idea of the static microcosm is even more evident in the organization of the medieval walled city, which with the surrounding countryside formed a closed and self-sufficient economic system. Here the statutes, institutions, dialects, and architecture, together with the reemergent local pre-Roman cultures, showed respect for the universally accepted principles of internal economic and social equilibrium and of the equality in rights of settlements recognized by statute.

Between the 16th and 18th centuries seigneuries and principalities not only confirmed the idea of the centralizing urban microcosm but also isolated it with an increasingly complex and permanent defensive system. These units further accentuated the hierarchization of the urban centers over the territories. During these centuries there was a development of civic art, which architecturally enriched cities that were princely seats. At the same time there arose theoretical discussion concerning the *forma urbis*, ultimately creating a flowering of new ideas on urban planning that suggested, under the guise of "ideal cities," a number of possible universal alternatives to existing schemes. Very often the longed-for innovations were merely formal, geometric, and defensive; but in the course of this inventive search there emerged new ideas in the technical field and in the area of social ordering that opened the way to various types of utopias. The idea of the city was finally set in motion, as confirmed by Leonardo's plans for the irrigation of the Val di Chiana, so as to provide a water and sewage system for a spindle-shaped multilevel city, and his scheme for the reorganization of Milan into 10 cities of 30,000 inhabitants each.

The baroque and neoclassic orders, which were congenial to a political despotism that widely exploited civic art, did not encourage this fermentation; nor did *laissez faire* as it applied to cities. Only with the utopias of the first 19th-century social reformers was the concept of the "ideal city" revitalized. Meanwhile the urban horizon was rapidly widening as the result of Protestantism, mercantilism, capitalism, colonialism, political strife, various scientific discoveries, industrial and demographic revolution, centralization of power, and new economic theories. The closed circuits of the medieval economy and static demographic groupings were being destroyed, while new ideas were contributing to the destruction of the old urban order and the static territorial hierarchy.

After centuries of relative demographic stability, Europe entered a new phase of population increase, expanding from 180 million in 1800 to 400 million in 1900. The population redistributed itself across the continent and created problems for which the old urban and territorial structures were unprepared. For a time no new town-planning idea replaced the abandoned archaic monocentric system. Toward the middle of the 19th century the chaotic urban and territorial structures were attacked by the new forces; they adapted or were left to stagnate, or they were physically destroyed (e.g., demolition of old walls). Establishments for production and other purposes arose without recourse to civic art, and new technical infrastructures were indifferently superimposed upon the obsolete ones.

The sensation of infinitely expanding possibilities was expressed by Saint-Simon (1825): "Now that the dimension of our planet is known, let the savants, artists, and industrialists make a general plan of execution to render the territorial possessions of the human species as productive and habitable as possible in every respect." At the same time the problems that arose and remained unsolved for lack of a wider vision amplified and grew more complicated. It was difficult to find a way to overcome the prevailing degeneration of traditional civic art, which was reduced to the academic design of tangential aspects of planning and to superficial approaches to demolition operations or urban renewal for the accomodation of vast speculative building operations. This state of affairs reached its climax in the 1850s with the Haussmann plan for Paris, which realized such municipal improvements as water and sewage systems, wide boulevards, and landscape gardening.

Two diametrically opposed approaches were followed throughout the 19th century: (1) that of utopian reformers in search of ideal models; and (2) that of urban engineers who had rediscovered the value of the over-all plan by widening their field of action from bridges and roads to include sanitation systems and mass transport. The first approach produced a few isolated prototypes and model workmen's districts built by enlightened industrialists in the wake of the 18th-century Nordic tradition; but this approach, with its abstract models, could not redirect a rapidly evolving society and its negative urban manifestations. The second approach produced engineering works such as the metropolitan underground and overhead railroad systems of London, Paris, and Berlin and several large-scale projects such as the layout of the Ring in Vienna (1856) and Ildefonso Cerdá's plan for Barcelona (1859); nevertheless, this second way proved unequal to the task.

In deference to private interests and laissez-faire principles, technical plans for the layout and extension of the rapidly expanding complexes were conceived and executed merely in terms of street layouts and building limits. The plans discriminated between the increasingly limited public land — by then reduced to roads and parks — and the increasingly extensive domain of private property, thus eluding the economic and social problems and the general comprehensive vision of the entire urban system. An approach to an integrated solution — social as well as technical, practical, and idealist — occurred toward the end of the 19th century as the result of various observations contributed by hygienists, geographers, sociologists, and demographers; and from the encounter of these new disciplines with urban engineering and a renewed, antiacademic civic art the specific, autonomous discipline of town planning was born. The technical, esthetic, and sociological foundations of town planning were established by Josef Stübben's *Der Städtebau*, (1890); Camillo Sitte's *Der Städtebau nach seinen künstlerischen Grundsätzen* (1889); Ebenezer Howard's *Tomorrow* (1898); Patrick Geddes's *Regional Survey* (1899); and Tony Garnier's *Une cité industrielle* (projected 1901–04; pub. 1917). From these foundations, and from the theoretical and experimental studies they stimulated in the following decades, there arose a new and more composite idea of the city and urban areas that was no longer associated with abstract and static forms but tended toward a synthesis of complex and heterogeneous factors. The urban phenomenon was scientifically analyzed and reconstructed. Even the ordinary man became aware of the significance, dynamics, and special problems of urban living.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The science of town planning has progressed, and the isolated residential groupings that supplanted the civic art and engineering feats of the first few decades of the 20th century have given way to a truly rational system that appears to be all-inclusive, continuous, and irreversible. The objective of the present treatment is to illustrate the theoretical and practical directions of this science, which is still in a phase of development and regularization, and to present its most significant concrete applications.

NOMENCLATURE. During the last decades of the 19th century, with the transition from civic art (until then conceived as architecture on a large scale) to the rising technology of the urban complex, the terminology of town planning changed and was rapidly enriched. Where, how, and why these terms emerged is a philological problem that has yet to be investigated; however, certain data are fairly reliable. In 1855 the word *démographie* appeared in a statistical treatise by A. Guillard (*Eléments de statistique humaine; ou, Démographie comparée*, Paris, 1855). In the study of the components of demographic phenomena (birth rate, mortality, emigration, immigration), the French statisticians used the term *urbanisation* (Am. usage, urban growth; Br. usage, urbanisation) to designate that particular type of immigration which at the time was causing urban centers to grow more rapidly than the surrounding demographic nuclei. Ildefonso Cerdá was the first to use statistical analysis systematically in the preparatory studies for his Barcelona plan. He prefaced the published illustration of his plan with an essay entitled *Teoría general de la urbanización* (1867), in which the term *urbanización* signified both concentration of the urban population and physical expansion of the city. This dual meaning presently exists in Spanish and French. In English the two meanings are expressed with two distinct terms: "urban growth" and "city development." The former refers to demographic-social phenomena, and the latter is used in the broad sense of evolution. The technical and legal meaning of "development" (since 1947) also includes the transformation from agricultural to urban land-use through the projection and carrying out of works, buildings, services, and installations, though the term is used in a less narrow sense to mean simple transformations in the use of real estate.

In German these particular terminology problems do not arise. The term *Städtebau* covers all operations pertaining to urban planning and construction and thus takes on the general meaning of "town planning." A worker in this field is called a *Städtebauer*. The use of this word dates back to the last decades of the 19th century and since then has remained unaltered; more recently new terms have been added in the field. Thus *Forschung*, the analytic and scientific phase of study, is now designated as *Stadtforschung* for cities and *Raumforschung* for territories. Territorial organization, which cannot be included in the concept of *bauen* ("building"), is termed *Raumordnung*. In the context of territorial planning the word *Planung* (e.g., *Landesplanung, regionale Planung*) has gained wider currency. In economic studies the term *Raumwirtschaft* ("spatial economy") has been introduced, and the political aspect of urban planning is called *Raumpolitik*.

The Anglo-Saxon linguistic arsenal is more complex, varied, and full of nuances owing to the contemporary use of three different matrices: "urban," "city," and "town." Thus in England the verb "to urbanise" indicates the act of making a site urban through physical transformation; this process is termed "development," while the substantive "urbanisation," as has been noted, is used exclusively in the statistical sense of population distribution; in America "urbanization" signifies only the extension of urban construction. Less frequently used is the word "urbanism," which indicates a way of life. The term "town planning" took precedence over "city design" in England at the beginning of the 20th century. This usage was established by the Town Planning Act of 1909, the first English town-planning law; by the title of the first specialized magazine on the subject, *Town Planning Review*, which appeared in Liverpool in 1910; and by the Town Planning Conference, held in London in 1910.

In 1909 the first national congress on this subject in the United States was held in Washington, D.C., under the denomination "city planning," which has remained the preferred term in the United States. Town planning or city planning do not, however, comprise the entire field, which was soon extended to include territories and regions. Thus in England the term "town and country planning" has gained currency. In this usage "country" denotes territories and smaller units. The expression "regional planning" is also used in Great Britain. These terms came into current use after 1945. In the United States the terms "city and regional planning" and "urban planning" have emerged. According to Frederick Adams, the former emphasizes the technical and operative aspects of planning at the territorial level, while the latter clarifies the interrelationships between the social, economic, and physical aspects of planning.

In the university teaching of town planning, which began at Liverpool in 1919 and at Harvard in 1923, the names of the faculties vary. In England the general denominations "town planning" and "town and country planning" prevail, though "civic design," the old name for town planning, has been retained at Liverpool University and was adopted by London University in 1947. In the United States the prevalent denominations in universities are "city planning" and "city and regional planning."

The French vocabulary in this field is smaller than the Anglo-Saxon but not so schematic as the German: The first derivations from *urbain* were *art urbain* and *urbanisation*, with its opposite, *désurbanisation* ("urban decentralization"). In 1903 historical studies and courses in urban history (*études urbaines*) were instituted by Marcel Poëte. First applied to Paris, these studies were later extended to cities in general. *Urbanisme*, conceived as the science of the evolution of cities, began from these *études* and from the outburst of English activity in this field in the first decade of the century. In 1911 the Société Française des Urbanistes was founded. Intense activity in the second and third decades of the century produced numerous French publications on town planning and led to the translation of German and English classics in the field — from Sitte (1889) to Unwin (1909). Consequently, the word *urbanisme*, which continued to be used in historical studies and forecasts, often yielded in that period to *science des plans des villes*, which corresponds more closely to the term "town planning." After the 1930s this usage disappeared, and the word *urbanisme* came to sum up the broadest historical, theoretical, and practical meanings of town planning.

From the first years of the century other new terms appeared in the nomenclature. The *plan d'aménagement*, or general plan, was later supplanted by the *plan directeur*, or master plan (1952). *Aménagement* was retained only in the denomination *aménagement des territoires* (1949) and the two specific subdivisions: *aménagement regional* and *aménagement du territoire* (i.e., of the entire national territory). In 1960, after the introduction of the national economic plans spanning a period of several years, *aménagement des territoires* was replaced by *planification territoriale* for consistency with the usage *planification économique*. In the scientific field there has been some attempt to incorporate *urbanisme* within the more extensive sphere of the organization of land areas, for which Rouge (1947) proposed the word *géonomie* as an equivalent of *Raumordnung*.

The Italian planners made some initial endeavors at town planning in the 1920s, with the statistical-demographic studies that constituted the scientific basis of this field as their sole equipment (G. Mortare, *La popolazione delle grandi città italiane*, Turin, 1908). The first Italian congress was held in 1926 at Turin under the denomination *Urbanesimo*, this term being used both in its demographic sense and as an adaptation of *urbanisme*. In 1927 *urbanesimo* was again employed in this sense in a publication on Turin by Armando Melis. In the last pages, however, there appeared the terms *urbanistica* for town planning (both as an adjective and as a substantive) and *urbanista* for town planner. The 12th Congress of the International Federation for Housing and Town Planning (Rome, 1929) contributed to freeing Italian cultural circles of their provincialism in this field. As a result of this congress the Isti-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tuto Nazionale di Urbanistica was formed (1931) and publication of the periodical *Urbanistica* began (1932).

Italy's backward position was in marked contrast with the surge of legislative activity in this field during the early years of national unity, producing in 1865, in advance of France and England, a law sanctioning the condemnation of property for public purposes. Through this law there had been instituted, although in an optional form, master building plans and plans of extension that were characterized by a broad vision of the urban phenomenon. Not until the post-World War II period, however, did there develop in Italy a town-planning concept that was directed toward transforming fragmentary projects into a continual planning process.

Definition of town planning. More than a hundred years have been necessary to liberate the concept of town planning from its identification first with civic art and then with various building codes and road engineering, to the point that town planning has become an autonomous discipline with a specific objective and methodology. It is therefore understandable that definitions formulated over this long period are widely divergent. At the same time, the uncritical attitude of many experienced planners toward terminology has definitively impeded scientific clarification and effective intervention. The definition of the art and technique of the building of cities, long accepted as a simple paraphrase of *Städtebau*, appeared to parallel the academic definition of the art and technique of the construction of edifices; it thus betrayed a conceptual position that regarded town planning as fundamentally corresponding to architecture itself except for differences in scale. This meant a return to the then-outdated definition of town planning as "civic art." At the same time, such a definition, by assigning to town planning a hybrid character of art and technique, initiated a long series of ambiguities and disputes on the priority of art versus technique and the means of reconciling one to the other.

For Stübben (1890) the purpose of town planning was to clothe the technical necessities in pleasing forms, as though it were little more than a matter of theatrical decoration. This definition harked back to the followers of the architectural academy and proposed a distinction between form and structure, between the functional plan and the artistic aspects of a building, and consequently between urban design and the architectural decorum of the various edifices.

Even the *Larousse du XXème siècle* (1933) defined town planning as the *aménagement et embellissement* of cities and villages and suggested that its program should be condensed into three words: *assainir*, *agrandir*, and *embellir* — a synthesis of hygiene, comfort, and esthetics, which was a new version of the Vitruvian triad. P. Remaury, in one of the early numbers of the periodical *Urbanisme* (1934), maintained that town planning "coincides with architecture, of which it is nothing but an extension based upon a master plan." Such assertions reappear from time to time, especially among those critics who consider only the spatial and formal aspect of the urban body, defined architecturally, to be the characterizing element of town planning (e.g., G. C. Argan, "Urbanistica e architettura," *Le Arti*, 4, 1938, pp. 365–73).

A different point of view was held by those who did not stray fundamentally from the traditional definition but considered the characterizing element of town planning to be the "project," or detailed segment of the over-all plan. The field thus became the art of designing city plans (Unwin, 1909, see the chapter entitled "Art of Designing Cities"; Rey, Pidoux, and Barde, 1928). Through study of the projected plan of the entire city, an over-all vision was attained, even though it was geometrically represented and thus two-dimensional and statically defined, with all the implied limitations. This vision, however, represented a first step away from the identification of town planning with architecture and from the naïve union of art and technique.

The study of city plans can lead — as it has in fact — to an overestimation of the geometric aspect of the plan itself and to a stress on morphological characterizations. The scientific output of Lavedan, from his *Histoire de l'urbanisme* (1926) to his *Géographie des villes* (1936), shows traces of this emphasis; but it is also immediately apparent that planimetric representation is merely a symbolic instrument for condensing the solutions to many problems and for expressing the character of the city. It is precisely in the search for scientific and practical definitions of the "problems" and the "city" that the concept of town planning becomes more precise.

Le Corbusier (1927) presented his scheme for an ideal modern city with the following statement: "Urbi et orbi, within and without the city, this is the time-worn phrase which indicates the immense power of the city, that without the city there is nothing. In fact town planning is the expression and the result of that social contract by means of which the collective existence of mankind has been made possible." The universal vision of the new city as it springs from the creative impetus presupposes and anticipates for Le Corbusier a new but not well-defined social structure, based on a fresh "pact of association." During those very years Max Weber was studying the *conjuratio* (1962) as the sociological foundation of the formation of the Western city about the year 1000.

A definition of town planning cannot consider only the most propitious and exciting case of the *ex novo* creation of a city, especially a large one; it must also consider the more complex case of operations in existing cities, including all possible transformations, from the creation to the expansion and modification of any single feature. As early as 1920 this formula was expressed in very general terms by G. B. Ford: "Town planning is the science and art of applying practical foresight to the elaboration and control of everything that enters into the material organization of a human agglomeration, as well as everything that surrounds it." Ford later predicted that the work of analysis and synthesis should result from the combined efforts of competent specialists. With a broadness of outlook he affirmed that town planning's field of action is unlimited and includes not only villages and cities but also the surrounding territory, regions, and the entire nation. This completely new concept guided practical activity but had no immediate theoretical repercussions. During the 1930s the attention of planner-theorists was occupied mainly by the experimentalism of the rationalist period and was limited to the field of habitation (from house to neighborhood). The modest but serious preparation of the first scientifically studied plans received only scant attention in those years. Nevertheless, these plans offered the first real opportunity to encompass the complex urban reality through systematic analysis and the application of statistical methods. The most exemplary work, for its methodology and results, was the study of the plan of Amsterdam, which lasted from 1928 to 1935. It can be said that the new town planning of the 20th century is founded upon this experiment.

In this light the definitions of town planning provided in those years appear extremely weak and imprecise. A. Agache (*La rémodelation d'une capitale: aménagement, extension, embellissement*, Paris, 1932) defined it as the science of observation, the art of composition, and social philosophy; but he then went on to explain that the planner must translate into proportions, volumes, perspectives, and profiles the various proposals presented by engineers, economists, sanitary experts, and financiers — thus reducing town planning to an interpretation and simultaneous translation of other people's ideas, with an obvious denial of any autonomy in method and judgment. The ambiguity of the planner-interpreter was to last a long time and gave town planning the form of a neutral and passive technique subject to other disciplines.

Against this attitude as well as its opposite — the utopian town planning proposed by the social planner-reformer — another position was taken. In view of the complexity of the problems posed by urban centers and the scope of analyses required, town planning was defined as the point of convergence of diverse arts and sciences and as a science which embraces manifold branches. Insufficient as these definitions may be, they deal with the focal point of town planning rather than with peripheral aspects. It should therefore be possible to pinpoint a specific principle of internal cohesion for town planning

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and to establish a scale of values that could serve as a guide in the making of relevant choices. Several solutions to this problem have been suggested.

The rationalist architects and planners of the 1930s perceived the principle of internal cohesion in the functionalism of all the elements constituting a city. Bottoni (1938) defined town planning as "the doctrine which is concerned with the organization of the sites or centers intended for habitation, production, distribution, collective life, and recreation and repose, with the appropriate means of communications and transport, in the manner most in conformity with their intrinsic function and higher social necessities." Bottoni does not specify the principle governing the functionality of the individual parts, nor does he deal with the transition from the functionality of the parts to the functionality of the whole. This concern with function, which is not new in architectural theory, is linked in town planning with the penetrating thought of Ildefonso Cerdà, who sought the principle of internal cohesion of the urban structure in the "reciprocal relationships between content and container, which are an expression of the functioning of the population within the city." According to the rationalist planners, however, the principle of functionality was seen to descend essentially from intrinsic relationships between physical objects (e.g., exposure to the sun and the distances between buildings); whereas for Cerdà the basis for comparison and measurement was the population in its relationship with the physical urban structure, so that city and population were two factors that should be constantly examined in view of the reciprocity of their relationships. Thus the way was opened for the more general and organic vision that was amply developed by Patrick Geddes in his studies on the evolution of the city. For Geddes (1915) planning was primarily a civic science based on the "civic survey," and its aim was to reorganize cities and regions.

The idea of the city as an organism that lives its own life had been asserted by Marcel Poëte in 1908. The organic conception, which developed the ideas of Cerdá, Geddes, and Poëte, was clearly defined in 1937 by Luigi Piccinato (*EI*, XXXIV): "Town planning in general examines the evolution of the city in its totality, for the city may be considered a living being in continual transformation." Set in this perspective framework, town planning has in view the general study of the conditions and necessities of life and the development of the cities. Although the organic principle surpasses the technological position of the functionalist, it still appears inadequate to solve all the problems posed by urban planning, particularly in the economic area. Nor does it precisely establish a criterion by which choices can reasonably be made. The problem becomes even more complicated considering the social and political structure of urban life.

In 1941 C. L. Racchianti warned that to speak of town planning divorced from a given ethical-political conception makes no sense, since town planning is not merely a technique. The question arises whether it is still possible to discover a principle of cohesion, unification, and guidance in such an expanded horizon. William Holford, in the *Town and Country Planning Textbook* (1950), perceives such a principle in the coordination and combination of operations on various fronts, a process which he claims is common to the three fundamental phases of planning: survey, plan of development, and program of realization. The *Textbook* illustrates practically what town planning can derive from analyses by the various disciplines of geography, sociology, economics, and law, and what specific technical equipment it possesses after several decades of experimental activity. The process of synthesis that is indispensable to the formation of the plan has been clearly defined by Keeble (1952) as the result of collecting, comparing, and evaluating all the correlations, possibilities, and conflicts disclosed by research. Thus the principle of cohesion in the different phases of analysis and synthesis is primarily a principle of method. While analysis can be carried out scientifically, synthesis still remains subjective, according to Keeble's study.

The search for the scientific objectification of an ever-greater number of choices and the *ex ante* experimentation with the results of synthesis constitute the methodological themes of the 1960s. Although the practical results in this direction have been scant, it is nevertheless significant that the problem is now conceptually stated and constitutes the field of exploration of most advanced work in the scientific study of urban planning.

Definition of the city. The enormous literature on the definition of the city that has accumulated in little more than half a century has been the work of geographers, historians, and sociologists. Even more abundant is the production of local monographs compiled as the premises of city plans; but only a small percentage of these has been printed, and the majority, distributed in a limited number of copies, has unfortunately been lost. An up-to-date and systematic bibliography of these monographs classified by country is lacking, though some attempts are being made in England, France, and Poland. Particularly lacking in this field is an international center of documentation that would guarantee the preservation of the enormous quantitites of material produced for reference purposes.

As has been noted, interest in the geographical and sociological study of cities began during the last decade of the 19th century. This was remarkably late in view of the concern with town planning manifested in the United States and Europe from the middle of that century. In *Die Lage der Arbeitenden Klassen in England* (1845) Friedrich Engels had dramatically denounced the living conditions of the working class in England with a detailed description of Manchester. Despite conflicting points of view, some common principles were recognized and came to constitute the conceptual frame of reference for specific research in the field of town planning. Friedrich Ratzel (1844–1904), a pioneer in the field of anthropogeography, explained the principle of evironmental unity and consequently the connection between all phenomena of physical and human geography. The biologist-philosopher Ernst Haeckel (1834–1919) inaugurated the science of ecology with his investigations into the mutual relationships of organisms living in the same place and their adaptation to the environment. Both opened the way for the teaching of Vidal de la Blache (1845–1918) and his *Géographie humaine* (Paris, 1922). In these studies are recognized the origins of the modern schools of urban geography, which include scholars of the stature of Max Sorre, Pierre George, and B. G. Chabot.

Modern sociology developed in this same period, originating with Emile Durkheim's first work, *De la division du travail social* (1893). Starting with the distinction between the division of technical labor and the division of social labor, Durkheim demonstrates that the development of the latter leads to the predominance of "organic solidarity" (through dissimilarity) over "mechanical solidarity" (through similarity). This predominance is manifested in the multiplication of particular groups, in the progressive limitation of "repressive" authority, and in the interiorization of the collective conscience and the "fortification" of the human personality. According to Georges Gurvitch, Durkheim affirmed "the specificity of the social reality and its irreducibility in the face of any other reality." The Durkheim school, continued by Marcel Mauss and Maurice Halbwachs (1938), is currently represented by the work of Gurvitch. The object and method of sociology in Durkheim's system of thought are defined by Gurvitch: "Sociology is a science which studies, from a broad outlook and in a typological and explicative manner, the different degrees of crystallization in social life, the basis of which is to be found in the conditions of collective conscience, which are opaque and irreducible to individual consciences; these conditions reveal themselves in externally observable constructions, institutions, pressures, and symbols; they materialize in the transfiguration of the geographic-demographic surface and at the same time impregnate these elements with the ideas, values, and ideals toward which the collective conscience tends in its aspect of a free current of thought and aspiration." In his *Traité de sociologie* (Paris, 1958) Gurvitch defines sociology as "the science which studies, as a whole and on various levels, the total social phenomena . . . with the aim of following up and explaining, in close connection with history, movements of structuration, destructuration, restructuration, and liberation." According to this sociological

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

trend, the first step in the study of a total social phenomenon arises from the recognition of the morphological and ecological surface through examination of the material exteriorizations of the social reality (density, movement, and spatial distribution of population in urban complexes, means of communication, utensils, etc.), which are considered social in that they are continually penetrated and transformed by collective human action.

Within this framework lies the research in urban sociology of Chevalier (1950) and Chombart de Lauwe (1952). This research is linked in turn with the studies in urban ecology of the North American school, which were begun in 1919 by Robert Ezra Park, developed in collaboration with E. W. Burgess and R. D. McKenzie (*The City*, Chicago, 1925), and continued by the Chicago school. The common aim of the studies in urban sociology and ecology has been defined by Szabo (1953) as "the study of social groups and their interaction insofar as they are influenced by that physical-psycho-socio-cultural environment represented by an urban agglomeration."

Toward the end of the 19th century there occurred a substantial renewal of older disciplines, such as economics and statistics, and the modern era of statistical studies began with the work of the English scientist Karl Pearson, from whom the modern schools originated. In economics a decisive development was initiated in the last decades of the century through the work of two schools, both abstract: the Austrian school of marginal utility applied to the field of microeconomics; and the Lausanne school of general equilibrium, later extended to an abstract macroeconomics by the economic school of Stockholm and by the London school of Alfred Marshall. The Marshall school set forth the theory of partial equilibrium based on the temporal analysis of long and short periods. Subsequent developments took into account John Maynard Keynes's *General Theory of Employment, Interest and Money* (New York, 1936) as an attempt to formulate a central analytic theory relating to the working of fluctuations in all sectors of the economy. In more recent years an effort has been made to direct the various modern schools of economic thought toward a new methodology based on a unification of economic theories and statistical and mathematical methods. This methodology has opened up a new field of observation and conjecture. Econometric research, theoretical models and their application to the real world, over-all schemes for national budgets, and the use of models for prediction and decision-making are the principal features of this new economic science, which leads to the theory of planning conceived, according to the definition of G. G. Granger (*Méthodologie économique*, Paris, 1955), as the "organization or reorganization, in a systematic manner, of a structure and its way of functioning."

In the present context, reference to the economic sciences may seem at first glance to lack practical relevance; however, in the latest phases of the evolution of economic thought, instruments of observation and prediction for an over-all economy, defined territorially, have been applied to regions, urban agglomerations, and cities. Coordination and integration of those aspects of geography, sociology, and economics which concern the urban phenomena into a single coherent urban science has not yet been fully accomplished on the theoretical and methodological level, although attempts are being made, as yet in a crudely experimental form, in the more advanced studies on town planning.

A geographic versus town-planning definition of the city. A rapid review of the principle definitions of the city provided by modern geographers, historians, and sociologists reveals a great variety of emphases and viewpoints and suggests the difficulty of containing them within a single universally valid proposition. For example, the city as "a stable concentration of men and residences covering a considerable surface of land and including commercial streets in the center" (F. Ratzel, *Anthropogeographie*, Stuttgart, 1891) describes the preindustrial city and cannot therefore be considered sufficiently comprehensive or generally valid. To define the city, as opposed to the village, by the activity of its inhabitants is fruitless. The city as a concentration of nonagricultural activities (F. von Richthofen, *Vorlesungen über allgemeine Siedlungs und Verkehrsgeographie*, Berlin, 1908) is a vague and very restricted definition that denies any urban character to those agricultural centers which do not have the aspect of a village. Any attempt to enumerate the possible activities that a city lacks produces only an interminable list. Weber (1962) tried to discern the predominant character of the city, describing it as the "seat of the market." But this type of reasoning suggests just a few of the typical economic aspects of the medieval city in the Western world and cannot be extended to other periods of history. The danger of overgeneralization may be seen in the formula of H. Wagner (*Lehrbuch der Geographie*, 1923), for whom cities are "points of concentration of human commerce." According to Bruhnes and Deffontaine (1920), "a city arises every time the inhabitants spend the greater part of their time within the agglomeration." This is obviously inapplicable to dormitory towns and agricultural centers and may well be inapplicable to nonstructured clusters. Among the more recent definitions, that of George (1952) considers the city "the point of contact between industrial economy and commercial economy"; but this definition too is open to question. Of use descriptively or as a guide, although sterile scientifically, is the typological classification of human settlements according to physical aspects of the site, size, functions (e.g., commercial, administrative, political), and so forth. The only attempt to take advantage of these numerous classifications has been made by Griffith Taylor (1946).

More fruitful results have been obtained by the morphological reading of a settlement as proposed by Lavedan (1936). He distinguishes as generative elements of the plan the basic road axis, the natural routes, the relief, the eventual outer limits, the monuments (which affect traffic circulation), and the geometric pattern (checkerboard, radial, linear, spindle). If utilized critically, this method can provide a starting point for the interpretation of urban characteristics, as demonstrated by Piccinato's studies on medieval cities (1943). Toschi (1947) points out that, in the urban organism, function and form differentiate many constituent elements that should be characterized in all their internal and external particulars. Morphological analysis of the establishment, outline, and fabric of a settlement can therefore be profitably undertaken as a first step toward a knowledge of the reality of the urban phenomenon; but it can also lead to completely sterile and abstract results if the study is limited to the purely geometric and physical aspects of the plan. In its totality the city is an organism that cannot be reproduced in the schematic and static description of its skeleton without risking neglect of the dynamic element of social life, as do those who regard it as an institution that is best seen in its crystalized and cadaverous expression.

This point was profoundly comprehended by Geddes, who went beyond examination of the simple interaction between place, labor, and people, as proposed and carried out by the engineer-economist P. G. F. Le Play in his study of the relations between organism, function, and environment. Geddes taught that cities must be considered in their state of evolution and that existing conditions must be analyzed in their dynamic aspects, including negative ones. From Geddes came the definition of the "paleotechnical" city, offspring of the uncontrolled industrial revolution (which produced Kakotopia); to this he opposed the "neotechnical" phase (Eutopia), according to a typological schematization and terminology that were later widely developed by Lewis Mumford. Geddes (1915) also sharply criticized the urban dispersion and dissemination that existed in England during the first years of the century, pointing to the unwholesome manifestations of unbroken strips and swarms of houses, of those peculiar proliferations of unstructured fabric that developed erratically around and amidst industrial centers and gave rise to a new type of complex and form of urban aggregation which he labeled "conurbation."

The process of spontaneous urbanization, hastened by the individual private interests of the expanding capitalist economy, had produced an advanced stage of degeneration in England since the beginning of the century and was to be repeated in other countries with identical effects. The result was uncontrolled expansion, in some cases spread around traditional cen-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tralized cities, with clusters of settlements springing up between the main city and encircling minor cities. Sometimes unorganized settlements emerged between cities of equal importance. Wherever they appeared, these new settlements rapidly broke the old separation between city and country, upsetting balanced urban structures (studied by Christaller, 1933) and transforming them into larger systems or into a single urban-rural continuum (Smailes, 1953).

Modern geographers (e.g., T. W. Fawcett, B. G. Chabot, and P. George) continue to call such phenomena conurbations when the original cities remain distinct although enclosed within a single whole; the term "agglomeration" is used when a high degree of interrelation and dependence is established between the city and its proliferations. In recent town-planning terminology, "city-region" (used earlier by Geddes in the geographical sense of urban region) is often used to indicate those conurbations subject to a process of town-planning administrative reordering from shapeless aggregates into structured aggregations. (In this sense "city-region" should be rendered in Italian as *regione urbanizzata* rather than the recently popular *città-regione*, as the latter term suggests a new category of super-city and implies a solution to urban problems through extension of the concept of the city.) For some English geographers (e.g., Dickinson, 1947) "city-region" indicates the tributary area functionally dependent on or served by a city — that is, the geographic-economic area of influence.

The new view of the city that includes its surrounding territory has significantly modified the traditional criteria of urban classification. Although a city of more than a million inhabitants is still called a "metropolis" (PL. 125), and a city of more than 100,000 is still a "large city," North American geographers and planners have recently introduced the term "metropolitan area." This expression describes agglomerations of more than 100,000 inhabitants containing at least one city with a population exceeding 50,000; this city must be surrounded by administratively autonomous complexes of smaller or equal size that are inhabited by people engaged primarily in nonagricultural activities. Beyond the largest metropolises there are a few outstanding "megalopolises." One such is formed by the chain of cities stretching from Washington to Boston (including Philadelphia and New York); in 1963 at least 38 million people resided on this strip of land about 600 mi. long and 50–100 mi. wide. The formation of the megalopolis is considered an irreversible process (Gottman, 1961), and it is thought by some to be the universal tendency of tomorrow.

Historical-sociological definitions of the city. Historians and sociologists have long linked the origins of the city with the origins of civilized society. But the sacred citadel, already present in the neolithic village, does not in itself characterize the formation of the city, even though it continued for thousands of years as a constituent element, just as associative and institutional characteristics do not substantially differentiate village culture from city culture. Having abandoned the abstract institutionalist theses, modern scholars agree that the transformation from village to urban culture is a complex socioeconomic fact. According to Childe (1950), the city, historically speaking, was both the result and the symbol of a gradual revolution. It was "the culmination of a progressive change in the economic structure and social organization of communities that caused, or was accompanied by, a dramatic increase in the population affected. . . ."

Stimulus for an urban revolution usually occurs when a community achieves an agricultural and technical development that permits it to produce a quantity of food greater than the quantity consumed by agricultural workers; excess production can then be preserved so that some of the inhabitants may pursue nonagricultural activities and the community can increase its technical potential. The urban revolution is therefore one of the first evolutionary stages in the balance between population, resources, and technical level. This balance has been the object of study in general economic terms from Richard Cantillon (*Essai sur la nature du commerce en général*, 1755) to Sauvy (1952–54) and Rostow (1960). Fear of inadequate subsistence for a growing population, which dominated classical economic theory and reached its extremity with T. R. Malthus's *Essay on the Principle of Population* (1798), was opposed by the sociological analysis of Durkheim (1893). Durkheim destroyed the myth of the subordination of demographic development to development of resources, showing the extent to which conditions of human concentration can stimulate division of social labor and therefore organic solidarity; this appears most markedly in the city and results in part from a need for men to keep in contact with one another. According to Durkheim's conception, which is further developed in the demographic-economic studies of Fromont (1947) and Sauvy (1952–54), it is essentially human concentration in the city that constantly urges the invention of new techniques of production by creating new needs.

Economic data alone are inadequate to explain the formation and development of the city as the convergence of the maximum concentration of a certain number of economic activities (R. M. Haig) and therefore as an example of the dynamics of spatial concentration. It should be recalled that the city did not arise as a result of fully developed technological processes — in fact, the industrial revolution precipitated the city's crises — but from the more archaic techniques, especially agricultural structuration in the Western world. According to Roupnel (1932), this structuration preceded and conditioned the formation of the city: "Grains, pastures, and pathways had as deep a significance as a Greek acropolis because Western civilization was fundamentally rural; cities were of later foundation and for a long time kept the material form and physiognomy of their rural origin." For Lewis Mumford, too, this rural origin is active and positive: It was from the village that the city derived its character of a maternal, life-giving, stable, and safe environment, rooted in the reciprocal relationships of man with other organisms and communities. The forms and values of equalitarian democracy are derived from the village.

This urban framework persisted to the threshold of the industrial revolution and strongly conditioned the development of civilization. The network of urban complexes everywhere shows a continuity that "bears witness to and symbolizes the permanence of a civilization" (Sorre, 1958). This is confirmed by the observations of Camille Julian (1913) on the "precocious use of all the sites favorable to the implantation of a city, the technique of the process of attachment to the site, and the extraordinary vitality of the urban seed if it is rooted deep enough." This is what Lavedan (1926), citing numerous examples of *in situ* reconstruction of ruined cities, calls the "law of persistence of the plan." But physical duration is only the manifestation of the great "force of coalescence" that keeps a city and its inhabitants united; as Lewis Mumford has pointed out, a social heritage is concentrated in the city, wherein the possibilities of a continuous relationship raise to a higher potential the complex activity of man. In other words, the city produces that accumulation, incentive, and transmission of knowledge and experience from which the force of coalescence continuously derives. "The city educates man," stated Simonides of Ceos. "Stadtluft macht frei" ("city air makes us free") was a saying of the early Middle Ages. To quote Park (1952): "The city . . . is something more than a congeries of individual men and of social convenience . . .; something more, also, than a mere constellation of institutions and administrative devices. . . . The city is, rather, a state of mind, a body of customs and traditions, and . . . the organized attitudes and sentiments that inhere in these customs and are transmitted with this tradition." There are numerous centers in which the strong local tradition that still appears in various attitudes of daily life receives group expression in holiday rituals, or explodes because of exceptional events. This gives the city what Marcel Mauss, using Durkheim's terminology, calls a special "tonality of life," so that each city demonstrates its own "way of thinking, of feeling and of reacting," its own "collective conscience."

Some of the most basic and characteristic traditions date back to the ancient flourishing of municipal liberty; however, settlements of far more recent origin have their own unmistakable life and behavior. But it is in large metropolises that

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

human relationships reach the greatest degree of intensity and differentiation. Of Constantinople, which in the 11th century reached almost a million inhabitants, Pirenne (*Medieval Cities*, 1939) said that it "alone, in the Christian world, . . . presented a spectacle analogous to that of great modern cities with all the complexities, all the defects, but also with all the refinements of an essentially urban civilization."

The attraction of capital cities has been examined by Chevalier (1950). Paris attracts provincials and the affluent, he says, because it is the center of government, administration, banking and monetary circulation, intellectual life, luxury, and pleasure. It consequently presents a great variety of employment possibilities, a constant demand for labor, and higher salaries, at least nominally, than those prevailing in the provinces. These possibilities favor financial speculation and social ambition.

The positive aspects of community life had been carefully noted by the Elizabethan writer John Stow in 1598 (*A Survey of London*): "Men by this nearness of conversation are withdrawn from barbarous . . . force, to certain mildness of manners, and to humanity and justice. . . ."

The city is not only a center of intellectual life; it also encourages sexuality and receives from it a stimulus that is expressed in all fields — economic, social, and cultural (Gurvitch). Studies on urban mentality and behavior by modern North American ecologists tend to stress the heterogeneous components that mark city life as a new way of life. Louis Wirth of the Chicago school has defined the city as an aggregation composed of a large and heterogeneous population densely settled upon a limited space characterized essentially as a center for "attitudes, ideas, and constellations of personality." Ericksen (1954) states that the city is "an advantageous laboratory for the study of social life because every characteristic of human nature is not only visible but magnified. In the freedom of the city, every individual, no matter how eccentric, finds an environment where he can grow and thrive and find self-expression." The individual not only reacts to the forces of his environment (classified by R. D. McKenzie, with R. E. Park and E. W. Burgess, in *The City*, Chicago, 1925, as selective, distributive, and adaptive) but also may become a creator of the environment. This is affirmed by all ecologists, particularly by Lee (1955), who starts from the ecological thesis that the city is not a static phenomenon but "a balance in permanent development." With the five concentric zones of Burgess (ibid.) in mind, Lee isolates five fundamental processes that affect the development of spatial structures: (1) concentration and dispersion, (2) centralization and decentralization, (3) segregation, (4) invasion, and (5) succession. Concentration is the tendency of individuals to gather in areas favorable to sustenance; dispersion, its opposite, is a reaction to congestion. Centralization is a grouping of the city's functions of production, distribution, and services; decentralization is the opposite. Segregation is a concentration of specific types of population or institutions in a given area. Invasion occurs when new types of populations or institutions or activities replace others in an area owing to displacement or change of intended use. Succession, which is the final cycle of the invasion process and a recurrent process in urban expansion, is reflected in situations of personal and social disorganization that can be remedied only through a new search for equilibrium. The prominence of the processes of segregation, invasion, and succession in Lee's analysis reflects situations typical of North American cities. In such a perspective the immediate aim of urban planning is the reorganization of deteriorated sections of the city rather than organized expansion.

The sociological studies of Pizzorno (1962) on urban mentality are linked to the Durkheim school, to the ecological school of Chicago, and to the theses of Simmel (1903). Simmel's work showed how the concentration of individuals in a big city and the consequent multiplication of contacts reduces those contacts to the functional, calculated, and fleeting. In Pizzorno's analysis, urbanization consists essentially in a process of differentiation between social groups: this process is "not a transformation of a small community into a large one, nor the passage from an old form of social solidarity to a new one . . ., but the rise of a new social entity which is in opposition to the preceding one while coexisting with it; it is not the broadening of a group or its deformation, as Simmel thinks, but the formation of new groups and new types of relationships between them." This "displacement in the relative position of certain groups in society," this "mutation in their functions," eventually determines a transformation of the system.

In urban sociology there has also been research relating to the theory of communications and its manifestations in spatial organization. According to R. L. Meier (*A Communications Theory of Urban Growth*, Cambridge, Mass., 1962), an urban structure can be interpreted by means of the systems, intensity, and frequency in the interpersonal exchange of messages through the various channels of communication. In this interpretation the culture of the city becomes essentially the culture of interpersonal communications, and the most suitable and fully developed urban structure is that which facilitates to the highest degree the development and organization of communications.

It may be concluded from this rapid survey of sociological definitions that the character of a given city at any moment may be understood through analysis of the dynamics of social structures and of their mutual relationships with the dynamics of the corresponding spatial structures. For decades Lewis Mumford has pursued this end with indefatigable vigor. On the subject of the city he has produced two valuable studies: *The Culture of Cities* (1938) and *The City in History* (1961). Although there may be some dispute with his approach, which is inclined toward abstract typological schematization derived from Geddes and from classical sociology, or with his tendency to base demonstrations on theses, or even with his overemphasis on the significance of technological preeminence, his work has a breadth derived from acute observation of minute detail. Mumford focuses attention on the drama of the city in history and contemporary life. *The Culture of Cities* is throughout a search for a definition of the city. Following are some of Mumford's conclusions on the social concept of the city that largely summarize the various theses developed in the above discussion of historical-sociological definitions.

"The city is a related collection of primary groups and purposive associations: the first, like family and neighborhood, are common to all communities, while the second are especially characteristic of city life. . . . The essential physical means of a city's existence are the fixed site, the durable shelter, the permanent facilities for assembly, interchange and storage; the essential social means are the social division of labor, which serves not merely the economic life but the cultural processes. The city, in its complete sense, then, is a geographic plexus, an economic organization, an institutional process, a theater of social action, and an esthetic symbol of collective unity. On the one hand it is a physical frame for the commonplace domestic and economic activities; on the other, it is a consciously dramatic setting for the more significant actions and more sublimated urges of a human culture. . . . The city fosters art and *is* art."

URBAN SPACE. *The archaic world.* Ever since the formation of definite settlements in the most archaic cultures, there has been no human society that has not realized its own artificial life environment. From generation to generation the inhabitants have exploited this environment, so that with adaptations some communities have remained viable for centuries. Certain sites manage to survive calamities and destruction over the course of thousands of years. Erbil, the ancient Assyrian Arbela, appears to have had an uninterrupted existence of over five thousand years, and there are a number of cities with a two-thousand-year history of continuous existence. Perhaps the most sensational form of survival of an artificial life environment is represented by the transmissibility of certain spatial schemes or models that link neolithic and present-day African cultures. A remarkable flourishing of settlements in the Neolithic period and in the subsequent metal ages has been brought to light, often by means of aerial photography. These settlements, which appear to be circular or egg-shaped enclosures containing groups of usually circular huts placed at random are found in Apulia (PL. 126),

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in the Aeolian (Lipari) Islands, in Cyprus, along the Rhine and Danube rivers, and in England. They attest to a vast, dense, and ubiquitous diffusion of village culture, which precedes and accompanies the city culture. From time to time the village culture disappears, reemerging elsewhere according to an unknown scheme of development that is characterized by a constant repetition of forms which influenced not only the nuraghe settlements (IX, PL. 401, cols. 602–609), the *castellieri* of Venetia, and the Hittite and Aegean citadels but also the kraals of Negro Africa. It is in the kraal (PL. 127) that village culture continues to be found in its purest and most archaic expression. A kraal consists of an enclosure, sometimes perfectly circular, containing a group of huts that may be randomly arranged or clustered so as to indicate family groups and their respective herds. The territorial groupings of the African kraal resemble the territorial distribution of the neolithic villages in economic and physical arrangement.

The persistence of these archaic forms of settlement cannot be explained solely in terms of the adaptation of an elementary and simplified socioeconomic order to stable demographic and ecological conditions. In his *Géographie humaine* (Paris, 1922) Vidal de la Blache quotes an excerpt from G. J. Toutée's *Du Dahomé au Sahara* (Paris, 1899): "In the fertile valley of the Niger, each village cultivates around itself a suburban area within a radius of as much as 1,500–1,800 meters [ca. 1,640–1,970 yds.]. When the number of inhabitants increases, the number of houses does not increase, but a colony is started at a distance of two or three kilometers (1–2 mi.), which, in turn, founds a little village bearing the same name as the first." On the basis of this data it can be hypothesized that analogous customs of dynamic and continuous colonization were practiced by the neolithic communities. Such a supposition permits a more satisfactory explanation of land use based on a conscious maintenance of a small-size village. The reasons for this voluntary containment of the social land territorial dimensions of the community are to be sought not primarily in considerations of productive technique (which does not appear as a determining factor) but rather in the magical, cosmological, and psychological meanings implicit in the spatial form of the neolithic village, which are also to be found in the African kraal today. The peripheral circle that divides the internal space of the village from the external cultivated space repeats on a small scale the earthly horizon delimited by the ocean that is supposed to surround the earth, separating an internal order of a *fas* type from the external world, which is the prey of demonic forces. In the center of the African village is usually planted the ritual pole, representing the center of the world, with totemic insignia that symbolize both the cosmos and a phallus. Even the hut has magical meaning: the internal cavity recalls the womb, and the cupola suggests the heavenly vault. Every part of the internal space of the hut has a precise purpose, both magical and functional; and each constituent part of the village appears to be composed of internal and external elements. The big open space in the center of the village is at the same time internal and external in respect to the village and to the huts, and it is therefore a concrete symbol of the interconnection of community relationships contained and magically protected by the external enclosure that is both horizon and placenta. There is generally only one entrance, which signifies both physical and symbolic communication with the outside world.

Such a complex network of profound meanings (see COSMOLOGY AND CARTOGRAPHY) has its origins in the remote experiences of cave dwellers and nomads. At different times and in different places the symbolic structure may have assumed other patterns, but their meanings have not yet been sufficiently explored and coordinated. The system undoubtedly constitutes a basic cultural heritage upon which rests not only village culture in its more evolved stages (i.e., when the sacred area of sanctuaries and the functional area of storehouses are grouped together, and when internal community space is articulated in thoroughfares and open areas) but also urban culture, which derives from the village structure. For a scientific (and not merely technological and mechanistic) explanation of urban space, the common cultural background of both the village and the city must be examined. The persistence of basic elements may also be found in spatial models that do not include circular forms but derive from the aggregation of rectangular or square forms.

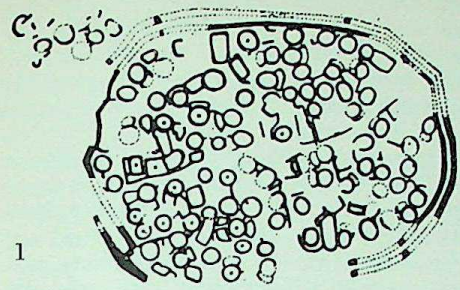
The well-known Vitruvian theory that the human form can simultaneously be inscribed within a square and a circle (XI, PL. 342), which is usually understood as a basic rule of proportion, may contain a more profound archaic meaning — namely, that abstract geometric forms derive from anthropomorphic projections and are therefore full of cosmological meaning. The archaic circular or rectangular human settlements may not have been contemporaneous; but the geometric difference cannot be explained technologically — for example, by saying that the use of long straight poles gave rise to the pile-dwelling villages of the Po Valley and, later, to the Roman castrum, as Mumford maintains. The survival to the present day of rectangular aggregations of huts testifies to the repetition of forms analogous to those of prehistoric complexes, equally full of profound ritual meanings. From the very earliest instances of settlements both the square and the circle are to be found, whether separate or joined, in various combinations and systems for the logical development of the space.

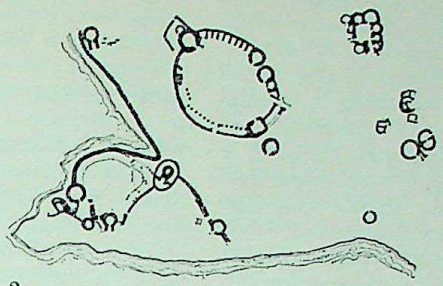
Ancient urban civilizations. At Jericho (VIII, FIG. 934), in layers prior to the 5th millennium, remains of circular houses and city walls have been discovered. Sumerian Ur (4th millennium), which lasted three thousand years, presents a highly evolved structure within an ovoid enclosure protected by walls and a canal. Equipped with two ports, one on the Euphrates and one at the head of a tributary canal that crossed the city lengthwise, Ur had a rectangular sacred zone with rectangular temples (VIII, FIG. 294), as well as a street plan based on rectangular blocks of dwellings. The houses were generally built on a square plan, closed on the outside and opening onto a closed courtyard on the inside.

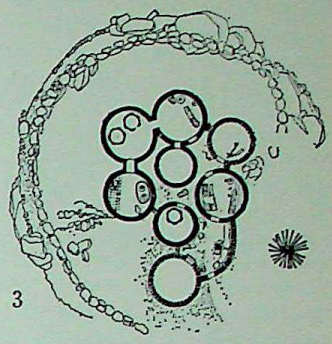
The layout of Babylon (end of 3d millennium; VIII, FIG. 299) represents the extreme development of the plan of Ur. The city, situated on both sides of the Euphrates River, was at one time surrounded by a rectangular circuit of double walls that have remained famous for their thickness (ca. 88 ft. at base); along the eastern bank of the river extended the sacred precinct composed of the Temple of Marduk; the E-tamen-an-ki (House of the Foundation of Heaven and Earth), a ziggurat with seven terraces rising to a height of about 300 ft.; the Hanging Gardens; the Temple of Ishtar; and the adjoining Palace of Nebuchadnezzar. The sacred precinct was delimited to the east by a rectilinear processional road, about 75 ft. wide, paved with blocks of stone and running parallel to the river; this was the first monumental road in history. The residential sector repeated, many times multiplied, the spatial arrangement of Ur. The entire city of Babylon expressed the prevailing cosmological conception, according to which the earth was a pyramid with seven terraces surrounded by the ocean and covered with three heavens. On the highest terrace stood Babylon. The great tower of Marduk, which was a smaller image of the world and at the same time its highest step and thus the closest to heaven, was the summit and the center of the world (Schneider, 1963). With this ambitious structural model was born not only the city but also the capital city and the metropolis. Its elements were to be found repeatedly in capital cities, even after thousands of years.

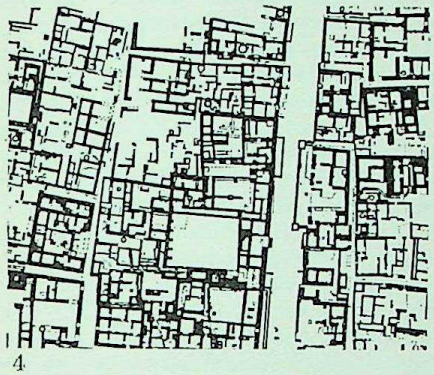
Contemporaneous with Ur and Babylon were the cities of Mohenjo-daro and Harappa (VIII, PLS. 63–65; XI, FIG. 7), which arose in the 3d millennium in the upper and middle Indus Valley. They show an identical plan, with a main system of roads that is perfectly oriented north–south and east–west, separating large areas about 1,300 ft. long and 980 ft. wide. Each of these areas is subdivided by smaller networks or dead-end streets and is completely filled with dwellings on square foundations, which are closed on the outside and have rooms opening onto a small central courtyard. A complex sewage system served the individual houses (VIII, PL. 63). In both cities there was a citadel situated to the west. It was rectangular in shape, about 1,300 ft. by 650 ft., and was raised about 30 ft.

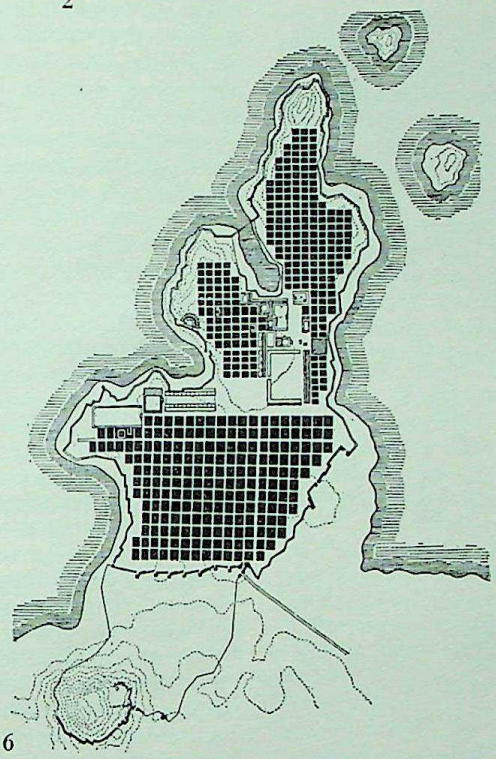
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

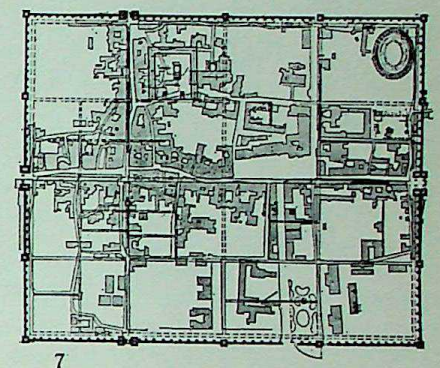

1

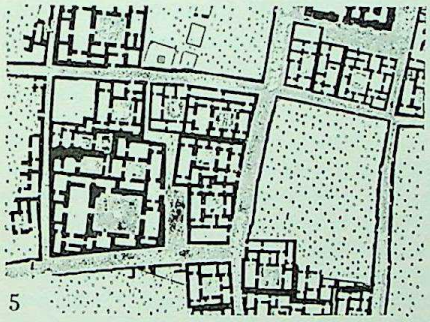

2

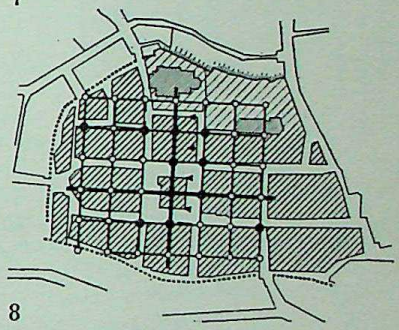

3

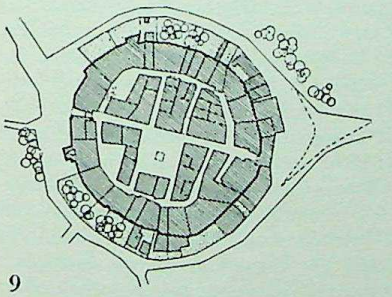

4

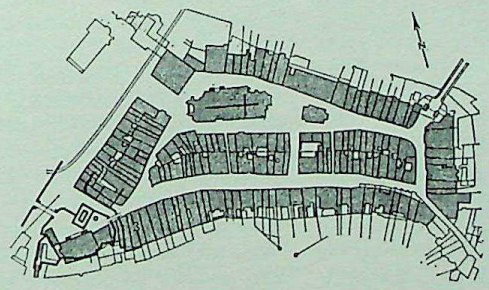

6

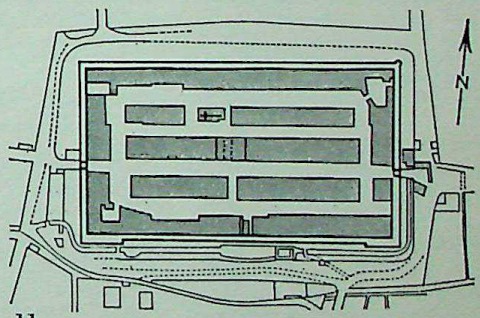

7


5

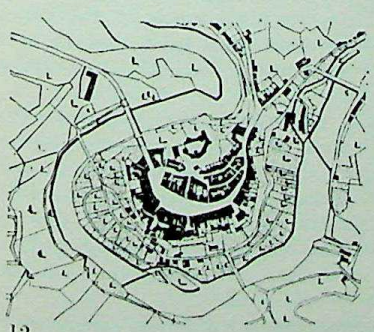

8

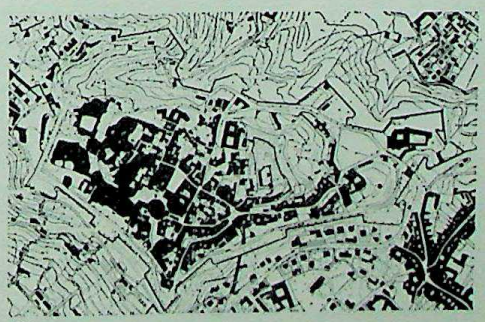

9

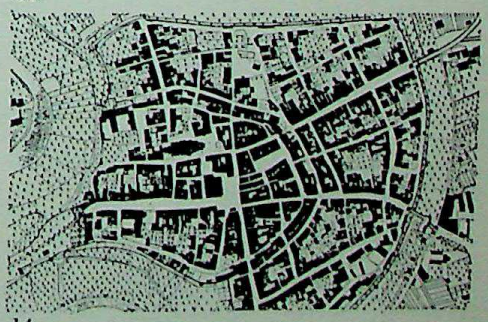

10



11


12


13

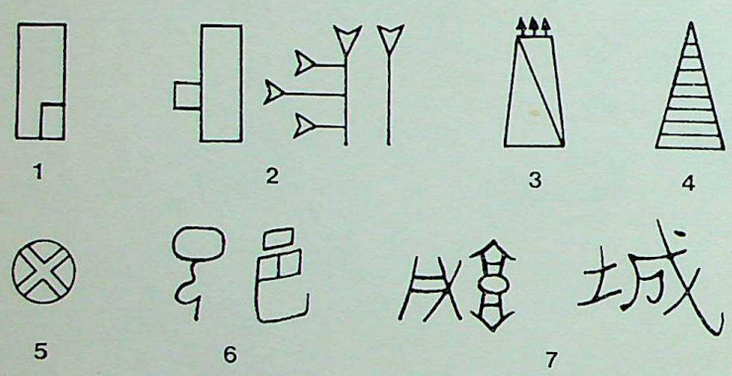

14

Ancient centers: (1) Cividade de Terroso, Portugal, 1000–600 B.C.; (2) Santa Vittoria di Serri, Sardinia, Bronze Age, 3d cent. B.C.; (3) village in Cameroun, ca. 1960; (4) Mohenjo-daro, Pakistan, scheme based on orthogonal axes with almost uniform insulae, 3d millennium B.C.; (5) Babylon, ground plan of the northern part of the Merkes district as reconstructed by Nebuchadnezzar II, 604–562 B.C.; (6) Miletus, Hellenistic city, 4th cent. B.C.; (7) Aosta, city showing outline of Roman walls. Medieval urban centers: (8) Tezew, continuation of the Roman network in the medieval scheme; (9) Ripa, Italy; (10) Fribourg, Switzerland; (11) Neuen Kirch, Switzerland; (12) Loket, Bohemia; (13) Bergamo, Italy; (14) Rothenburg, Germany.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

above the city level. The plans of these cities were undoubtedly permeated with magical and cosmological conceptions, of which numerous testimonies have survived in Indian doctrines.

In this tradition the city was consistently viewed as a symbol of the conception of the universe. Thus, according to Jainism (q.v.), the universe is conceived as a series of concentric circles, in the center of which is the earth. Rising from the earth is the mountain of the world, Meru (Sumeru), from which flow four rivers that divide the four continents. In Buddhist doctrine the universe also consists of seven concentric circles. Along the walls of the ideal city there are twelve gates (equal in number to the signs of the zodiac). According to the rules of the Śilpaśāstras (series of painting manuals), the plan of cities and villages follows the principle of the cosmic cross, the so-called "magic square," which represents the four quarters of the universe. There are many instances of this magicoreligious conception even in the individual parts of the city: "The dwelling house is built upon the model of the human body . . . which is the house of the soul it contains." The Indian temple is conceived as a city in miniature with spaces that "represent the enclosures for cattle, with corridors that lead to the altar and represent the spacious roads of the city leading to the royal palace, which is placed at the crossroads; there are also spaces in which the faithful group themselves around the altar, as the citizens do in the city palace; again, there are not only roads and gutters, wells and reservoirs, waiting rooms and assembly



Ideograms expressing villages, cities, and enclosed settlements. (1) Egyptian hieroglyphic of enclosed settlement, castle, or palace. (2) Cuneiforms of city. *Left*: Archaic pictographic form. *Right*: Recent form. (3) Cretan hieroglyphic of fortress or palace. (4) Hittite hieroglyphic of city. (5) Egyptian hieroglyphic of village or city with crossroads; (6) Chinese city. *Left*: Archaic character of 2d millennium B.C. *Right*: Modern character. (7) Chinese enclosed settlement. *Left*: Archaic character of 1st millennium B.C. *Right*: Modern character.

rooms in the temple, as exactly organised as in the city, but also markets with their stalls" (E. A. Gutkind, unpublished text).

The Indian conception of the structure of space and its complex psychic and cosmic meanings expresses itself through the mandala — a composition of concentric circles and squares in which symbols, colors, and position with respect to the principal axes speak a profound language. Since in historic times the Indian city appears to be a constructed mandala, it may perhaps be not too risky to conclude that this conception presided over the foundation of Mohenjo-daro and Harappa, of whose cultures too little is known.

The religious conceptions of the Egyptians, which determined the plan of the territory, are known to the smallest detail. The Nile was the axis of the earth and was surrounded by ocean. Along its course the cities of the living were invariably placed to the east, with the cities of the dead opposite them to the west, according to a precise cosmological law. Ra (Re), the Sun, to whom the goddess of heaven gave birth each day, rose over the cities of the living and traveled through heaven in his celestial boat, crossing the Nile at his zenith; in setting he died over the cities of the dead. He then entered the realm of the dead, in which the adventurous underground crossing of the solar boat began. Since the immortal existence of the dead was the dominant value in Egyptian culture, the cities of the dead contained numerous artifacts in order to guarantee the physical immortality of the dead and the architectural monu-

ments erected for them. The cities of the living, on the contrary, were considered to be as ephemeral as their living inhabitants and were therefore almost always built of dried mud and perpetually renewed in superimposed layers that gradually raised the level of the urban ground. These cities were geared to the strictest everyday functionality, with the exception of religious buildings. They were part of a world uniformly planned by means of skillful embankment and irrigation works that covered the entire valley. Completely immersed in a single cosmological-religious concept that made every transversal segment of the valley identical to all the others, the Egyptian cities must be understood less as true cities than as residential districts of a immense urban state. The ideogram of house clusters (houses of the rich, the craftsmen, and the workers; FIG. 191) represents three fundamental elements: the external enclosure, the rooms, and the internal open space (the garden in the houses of the rich) in which the most activity occurred, as is apparent from the numerous wooden models that have outlived the original examples. The geometric scheme of the districts is sometimes square, as at Tell el ʿAmarna (PL. 128). In the later periods of the New Kingdom the urban complex tended to dissolve into an open and continuous structure, whereas, before city and regional planning was definitively consolidated, the more ancient cities (Hierakonpolis, Memphis) were perhaps surrounded by circular or ovoid walls. This is suggested by some archaic representations of the hieroglyphic for "city" (*nwt*), which in its schematic form (FIG. 191) can be interpreted as a synthesis of the urban spatial structure with crossroads and as a cosmological indication of the city, which was conceived as a symbol of the Nilotic territory itself; in the latter case, the circle of the horizon probably represents the ocean, with the crossed axes representing the Nile and the course of the sun.

The diffusion of Mesopotamian and Egyptian urban cultures on European soil occurred in Crete toward the middle of the 3d millennium B.C. They were grafted on extremely ancient neolithic cultures in a physical environment dominated by mountains and therefore totally different from the wide irrigated valleys of the Nile, the Indus, and the Euphrates. The new Minoan culture developed rapidly, spreading a different type of settlement centered around a palace with a newly conceived ground plan. The theme of the royal palace, complete with services, had already been developed in the 3d millennium at Mari (IX, FIG. 787) on the upper Euphrates. On Cretan ground the same scheme was magnified to become the dominant element of the new urban complexes of Mallia, Knossos, and Phaistos (see CRETAN-MYCENAEAN ART). All of these complexes were large; Knossos, the largest, could perhaps have housed up to 80,000 inhabitants (IV, PL. 53; FIG. 85).

The main structural and design innovations of the Minoan palace lay not only in the grouping of a greater number of rooms and in the superposition of several stories (and consequently in the dimensions of the architectural ensemble) but also, and primarily, in the introduction of a new element of city space — the closed square (at Knossos, ca. 90 × 170 ft.). It was completely surrounded by edifices and became the center of the entire spatial composition, the focal point of the palace and the city. In following millenniums this spatial model was destined to become widely successful in the design of cities that were seats of royal courts.

In later and smaller Cretan cities lacking large royal residences a new equilibrium appears. The little city of Gournia (PL. 128; IV, FIG. 91), which arose after the earthquake of 1750 B.C., contains a wiser admixture of the elements desirable for community life. The houses are adapted to the cone-shaped hill on which the city rises. At the summit are a modest palace and a vast market square — almost an anticipation of the medieval city.

Mycenae dramatically incorporates all the new characteristics of the rising urban civilization in the West. The new cities are no longer characterized by grandiose dimensions or by abstract repetition (both typical of centralized military organization) but rely on an interpenetration of elements, functions, and spaces, all minutely characterized and intertwined so as to form an organic whole. The Mycenaean cities are individualized

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

by the character of the site and by their internal activities. This is the spatial expression of a new type of community life and organization based on small urban-rural social groups (synoecism), permitting the realization of individual characteristics and pursuits outside the schematism of theocracy and universal cosmology.

The Greek city was thus enriched with new urban elements required by the multiplication of social encounters and by the independent activities of the various groups within it. At the foot of the Athenian Acropolis (VI, FIGS. 887, 890), the spiritual center of the polis, the city spread without predetermined order. The residential districts still repeated the ancient Ur pattern, but they differed profoundly from any preexisting human settlement in the wealth of public facilities — the prytaneum (town hall), the agora, the hill of the Pnyx for popular assemblies, the theater, the gymnasium, the sacred woods. These made Athens the most representative cultural center of the ancient West. The variety and free spatial combination of these elements permitted every Hellenic city to assert its own urban individuality, in which was reflected the vitality of community life and of individual or group choices. The concept of space was shorn of its mythical quality and became the object of study and philosophical speculation. Later, when there arose opportunities for the creation of new cities, for the rebuilding of destroyed cities, or for planned extension, as at Miletos, Olynthos, Piraeus, Akragas (mod. Agrigento), Syrakousai, Selinous (mod. Selinunte), Priene (PL. 129, FIG. 189; VII, PL. 53, FIG. 446), Greek town planning gave ample demonstration of its high degree of maturation and synthesis in the field of urban organization. Each one of the new urban complexes assumed a particular individuality obtained mainly through the presence, character, and spatial distribution of the buildings and the spaces for public use, which were conceived as focal elements of urban life.

The Greek city was essentially and predominantly a city of and for man. This does not mean that ancient religious tradition was absent; tradition appeared in rituals and in places sacred to the poliadic divinities. Thus the oracle was consulted as to the choice of site for the foundation of a new city. The sacred fire that was to burn in the new prytaneum was obtained and transported from the hearth of the metropolis. In Homeric times the sacred circle was in the agora; later, in the popular assemblies, the sacred circle was traced with the blood of victims who were immolated upon the altar before every deliberation. The oracle, fire, and sacred circle testify to the common origins and cosmological order of human settlements.

These same intangible factors presided over the Etrusco-Roman rite of founding cities; this rite was, however, impregnated with a spirit that was more faithful to archaic symbolism. Once the propitiatory and cleansing rites were carried out, the founder dug a small circular ditch (called a *mundus* in reference to the Mani region and the cosmos), into which he threw a few clods of earth from the city of origin (*terra patrum*); over this was placed the altar, and then the fire was lit. Around the urban hearth thus constituted, the perimeter of the city was traced in a square, just as a house would be built around the domestic hearth. The founder then cut with a plow the ritual furrow upon which the walls were to be built, interrupting it at points where gates were to be placed. The *pomerium*, a strip of ground inside and outside the city wall that could not be built upon or cultivated, physically completed the sacred area of the city. The ancient cosmological-religious meanings inherent in the geometric symbols (circle, square, main axes) of which the Roman city was formed were to remain sufficiently alive to pervade the whole of Roman civilization for centuries to come.

As cities multiplied, the urban structure, which was determined by the presence of certain basic public structures, particularly the forum, was simplified and reduced to a scheme for reasons of political expediency and speed of execution. A single Greco-Roman urban culture rapidly amalgamated the peoples of Europe, superimposing itself upon the preexisting cultures and integrating itself into their traditions. The only exceptions were Rome (VIII, FIG. 515) and, later, Byzantium, in which imposing civic architecture and spaces dedicated to public use took on a political and sociological significance that exalted them beyond measure — that is to say, the established structures dominated, even suffocated, the city of men. The extraordinary fascination of Babylon still existed in man's collective memory, as witnessed by the Biblical description of the heavenly Jerusalem: "And the city lieth foursquare, and the length is as large as the breadth: and he measured the city with the reed, twelve thousand furlongs. The length and the breadth and the height of it are equal" (Rev. 21:16). In other words, it was envisaged as an immense megalopolis stretching some 1,400 miles on each side.

The medieval city. The dissolution of the political and cultural unification created by the Romans was accompanied by a rapid and almost total economic-demographic recession, which was hindered, however, by the new Christian culture that was taking root. This new culture created the conditions for an almost contemporaneous and homogeneous social and economic revival in scattered centers that were either autonomous or only nominally coordinated. The reawakening of urban vitality in Europe after the year 1000 had certain universal characteristics. The complex cultural stratification, in which were present not only the most archaic aboriginal roots and the residue of Roman homogenization but also more recent ethnic grafts, was once again amalgamated by the widespread and deep-seated religious unification. There were also objective conditions of demographic dimension and group isolation that permitted economic revival only in circumscribed and noncommunicating zones. Although Roman universality was still pursued as a vague ideal, it could no longer recreate itself politically; however, it persisted at an ethical, juridical, linguistic, and cultural level.

Thus began an essentially new urban socioeconomic culture based on the small self-sufficient community that restructured the European territory into tiny autonomous urban and rural aggregations. Many such aggregations revived the Roman *municipii* (towns), *pagi* (villages), and *vici* (quarters), or they associated themselves with villas, courts, parishes, and monasteries; others reestablished and developed port and mercantile functions; still others were created *ex novo* in a fervor of colonization and urbanization. It was with this urban revival that modern Europe began its uninterrupted development.

In this renewed cultural, economic, and social context, both generalized and locally differentiated, all medieval cities reveal a common inspiration together with the affirmation of an autonomous individual characterization. The only profound differentiation occurred between the feudal complexes and the free communes. The elements of city building still derived fundamentally from Greco-Roman culture, but each element was altered in terms of a different conception of human relationships and consequently of space. The medieval city, which was equipped with its own statutes and ordinances, was a concentration of artisan and commercial activities, a place of daily meeting and exchange with inhabitants of the surrounding countryside, the destination on fixed dates of mercantile activities covering a vast radius, and a religious, cultural, and political center; it was therefore a complete microcosm. To an outsider the city seemed an autonomous entity circumscribed by walls and placed within its own agricultural landscape, which was fully elaborated and humanized. The city was recognizable from afar by its particular skyline of towers, roofs, and spires; thus the skyline became a collective symbol with which the citizens identified themselves. The emergence of a cathedral or the preeminence of a municipal tower (I, PLS. 396, 399) or a counterbalanced composition of elements immediately communicated the fact of ever-present religious-political strife. Basically, however, every city, especially in the early Middle Ages, was viewed as a terrestrial image of the City of God in which celestial spirits fluttered among spires and towers. The silhouette of the city supported this image. Everywhere the church was considered the "mother" of the local community, and there was an abundance of architectural allegories and symbols to suggest this. The citizens were gathered together

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in the arms of the city, and the structural mass of the church became the focal point of urban life. The medieval city was also characterized by a love of life according to the principle of "good government" (see IX, PLS. 194, 195).

The urban structure expressed this dynamism, emphasizing routes and meeting places. Even private residential space modified the ancient Oriental and Greco-Roman traditions. The house lost its introverted character and its air of intimate repose and hostility toward the outside world. It became a productive, extroverted complex almost always composed of three elements: living quarters, workshop or warehouse, and kitchen garden; the workshop and living quarters faced the street. Reflecting the new necessity for closer human relationships, houses were placed next to each other in long continuous ribbons, and streets became common thoroughfares and places for pause and exchange, social tension, and therefore life (I, PL. 399). Consequently the street environment was controlled by statutory norms and regulated by the *magistri viarii* or even by collective consultations. Urban life was innerved along a series of routes converging on the religious or secular focal points, where the greater massiveness of the buildings was counterbalanced by open spaces that provided a favorable setting for personal as well as business exchanges. At these points civic life was busier on market and feast days and on occasions when spectacles were presented or important decisions were made.

Because of this vitality and complexity, every medieval city must always be considered from two points of view: the synthetic one that grasps the unity of structural and symbolic elements, and the analytic one that minutely examines the city's internal life as revealed by the network of focal points and dynamic thoroughfares. The medieval city displays a complicated arrangement of physical structures that are freely articulated upon numerous internal spaces and geometric plans that are variously combined. This harmony of structures and space, which constitutes the greatest expression of medieval urban design, may be seen in the arrangements of piazzas in Padua and Verona (I, PL. 402) and in the multilevel spatial compositions of Assisi and other Umbrian cities. Thus it is difficult to understand medieval cities such as Perugia (VII, FIG. 655), Rothenburg (FIG. 189), or Carcassonne (V, FIG. 658) from two-dimensional projections alone. By contrast, the frontal or perspective representations of the 16th and 17th centuries, although imprecise, are far more clear (PL. 131, FIG. 201). Two-dimensional street-layout schemes, by simplification, nullify those elements of differentiation and vigorous individuality which constitute the essence of medieval town planning.

The new conception of urban space during the Middle Ages consists precisely in the discovery of the minute, multiple, and free combination of elements, which are exempt from all classical canons. This approach is evident in the spatial composition of the newly created medieval cities and in the planned expansions. The actual plans of some of the new cities, the planned expansions, or the rarer duplications of cities on opposite river banks do not derive from mechanical repetition of abstract geometric schemes drawn from the Roman repertory. Examples of planned cities are Lübeck (1143), Bern (1191), Castelfranco Veneto (1199), Cittadella (1220), Aquila (1250; VIII, FIG. 688), Massa Lombarda (1251), Cittaducale (1309), Aigues-Mortes (1246), Montflauquin (1256), and Montpanzier (1284). Planned expansions are evident in Massa Marittima (1228) and Brescia (1236–49). Examples of duplication are found at Carcassonne (Ville Basse, ca. 1280) and Dresden (Neustadt, 14th cent.). These plans are examples of individual spatial inventions of constructed masses, squares, and dynamic thoroughfares. The whole is elaborated by a capillary network and suggests Greek spatial concepts, which are freely expressed and almost reinvented (PL. 130). The medieval talent for interpreting classical schemes is also expressed in the settlements on preexisting Roman sites (e.g., Lucca, VIII, FIG. 632; Padua; Reggio Emilia; Cologne, VI, FIG. 277; Leicester). In these the ancient Roman outline survives, but the checkerboard pattern — little by little modified, eroded, reinterpreted — appears almost completely created anew.

The Renaissance city. The transition from medieval to Renaissance town planning occurred when articulated spatial combinations were supplanted by unitary spatial compositions that were conceived artistically according to new Humanistic cultural orientation and the new thematic interests of the princely courts and rising mercantile-capitalistic society. Individual workmanship became more important and often contained a significant urban-design component. Brunelleschi's dome (1418–36), for example, not only redefined by its mass all the spaces in the surrounding area but also heightened the profile and composition of the entire city; it became from that moment the compositional pivot and inseparable symbol of the city (I, PL. 396; II, PL. 365). Often, however, a work remained an elegant and solitary fragment, as did Brunelleschi's Piazza dell'Annunziata in Florence. Begun in 1419 with the Ospedale degli Innocenti (II, PL. 366, FIG. 656), the piazza proposed as an urban theme the extroversion, for public use, of the claustral motif. Later, the closed arcaded piazza derived from the agora and the forum was altered in accordance with subtle discourses on proportion and perspective that composed the new spatial mathematics of Humanist culture (PL. 132). The Florentine model spread, with varied application, to the Piazza Ducale (1425–85) by Bramante (q.v.) in Vigevano and to the piazzas in Carpi and Faenza, and it very soon became emblematic of the fragmentary town designing of the early Renaissance.

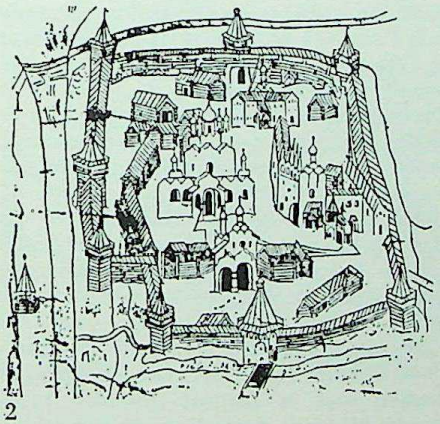
In contrast to the great urban flowering of the 13th century, the 15th and 16th centuries saw few occasions for outstanding renewal or expansion projects in existing complexes. Among the more famous, however, are the renewal of Pienza (1460; I, PL. 390) by Bernardo Rossellino, which was undertaken on the initiative of Enea Silvio Piccolomini, and the addition to Ferrara in the time of Duke Ercole I d'Este (1431–1505), which was planned in 1492 by Biagio Rossetti and carried out by him within a few years (VIII, FIG. 605). The redesign of Pienza was limited to an extremely small, well-proportioned architectural composition for a princely center; the addition to Ferrara, although admirable for its extent and refinement, produced no substantial innovations in the characteristic structure of medieval additions or new cities and must therefore be considered a development of traditional medieval urban design.

If actual achievement was scarce in those years, conceptual preparation was fertile; all the best minds of the last half of the 15th century were involved in theoretical investigation, including Alberti, Filarete, Francesco di Giorgio, and Leonardo (qq.v; see also TREATISES). The discovery in 1414 at Montecassino of *De architectura*, a manuscript by Vitruvius, initiated theoretical research in town planning. Printed in an incunabulum edition in 1486 and in several later editions, it influenced Renaissance thought promptly and decisively. Alberti's *De re aedificatoria*, written in 1450 and published in 1485, launched a series of treatises on the art of building in which city planning was included as an integral part of the discussion. While Alberti's description of the city reproduced schemes of medieval planning, then understood in the light of Vitruvius's theories, Filarete's architectural treatise, written in 1464 and printed in 1490 (I, PL. 406), described new schemes for the ideal city that differed from their medieval sources in the quest for a single abstract conception that could be expressed in theoretical models, each geometrically individualized and defined. These models were surrounded by elaborate defensive enclosures and were characterized by spatial compositions derived from the rigorous application of bilateral symmetry or rotatory symmetry (PL. 144). In both cases the crossing of axes (the radial principle) defined the geometric barycenter of the city, which was marked by a symmetrical piazza or, as in Sforzinda, by a public edifice on a central plan — a return to the ancient cosmological conceptions (PL. 144; III, PL. 484).

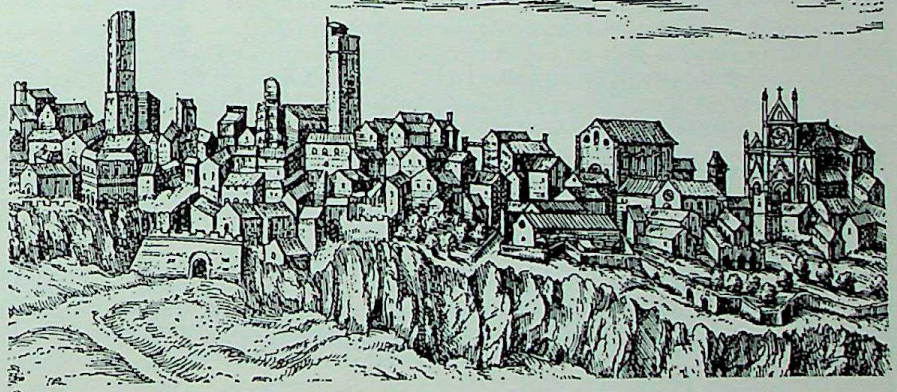
An important contribution to the theoretical geometrization of the city was the work of Francesco di Giorgio (d. 1502; FIG. 221), who left an unpublished treatise on civil and military architecture (1492; Turin, 1841) replete with schematic examples. Technical devices such as two-level streets (PL. 144) and various types of fortifications were invented by Leonardo, whose most significant conceptual contributions in this field were his

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1

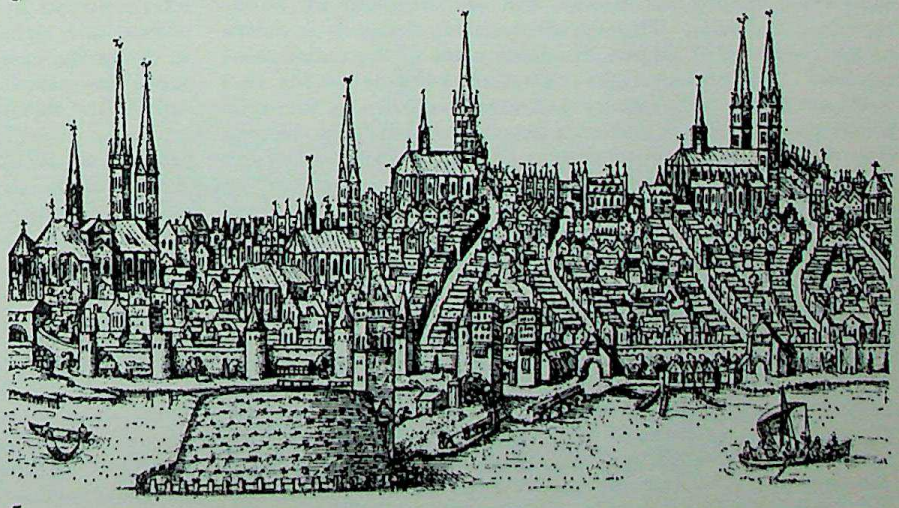


2



3

4



5

Urban iconography: (1) Medieval Rome, 15th cent.; (2) fortified monastery of Boredzrowo Tuchwinskowo, 1679; (3) Orvieto, 1574, print by B. Hogenberg; (4) Magdeburg, 1493, print by H. Schedel; (5) Lübeck, 1581, print by B. Hogenberg.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

studies on the hydraulic drainage of vast territories and his famous plan for decongesting Milan: "There will be ten cities, five thousand houses with thirty thousand inhabitants, and you will separate the great congregations of peoples. . . ." Leonardo's principles are precursors of the criteria of modern city and regional planning.

Renaissance treatise writing became prolific in the first half of the 16th century and included the works of Fra Giovanni Giocondo (1511), Albrecht Dürer (1527; PL. 144), and Pietro Cataneo (1554; FIG. 221). But the decisive contribution to town planning during that period consisted less in the multiplication of geometric inventions defining a spatially and functionally ideal city, and more in the development of new ideas regarding social and political organization. Although derived from the ancient Platonic conception of the ideal city, these ideas developed the theme of social relationships in a new way and constitute the first exploration of possible ideal models. The first important work along these lines was Thomas More's *Utopia, or the Best Form of Republic*, edited by Erasmus of Rotterdam and published in 1516 at Louvain. Thomas More described "the wise and goodly ordinances of the Utopian among whom with very few laws all things be so well and so wealthily ordered that virtue is had in price and estimation and yet all things being there common, every man hath abundance of every thing." With prophetic intuition More theorized on modes of legal punishment, on garden cities, on artificial incubators, on gardening competitions, on euthanasia, on obligatory work, on the six-hour working day, and so forth.

This protosocialist matrix served as a starting point for the Italian rationalistic utopias of the second half of the 16th century. Anton Francesco Doni, in his *Mondo savio e pazzo* (1552), described the ideal city as "a perfect circle and planned like a star" with a hundred streets and a hundred gates, in which all labor is rational and universal equality reigns. Patrizi (*La città felice*, 1553) and Agostini (*La repubblica immaginaria*, 1575) also made contributions to this quest. Research on the ideal city reached its limits in the second half of the 16th century and thereafter diminished, except for a few abstract and formal exercises predicated on a deliberately imaginary city whose institutions reflected escapist attitudes and a search for refuge (see also below, *Modern utopias*).

While the interest in formal research and social and institutional reform was developing, important practical experiments were being made in renewing the conception of spatial composition. The peak of perfection was attained in the Piazza S. Marco, Venice, during the first decades of the 16th century. Against the compact monumental complex of the Basilica of S. Marco and the Doges' Palace is set the enormous empty space of the long piazza (PL. 132; I, PL. 402). Its divergent sides open toward the basilica and are delimited by highly rhythmic buildings. Through perspective, attention is drawn to the portals of S. Marco, the focal point of the entire composition. The piazza's right-angle turn, pivoting on the vertical axis of the 13th-century bell tower, emerges in the well-proportioned piazzetta and ends beyond two symbolic columns (VI, PL. 340), where it opens onto the transparent veil of the lagoon, animated by boats at their landing stages against the distant silhouette of the Church of S. Giorgio Maggiore (XII, PL. 49). As a spatial composition whose elements are heterogeneous, whose means are simple, and whose poetic results are skillful, it has never been equaled.

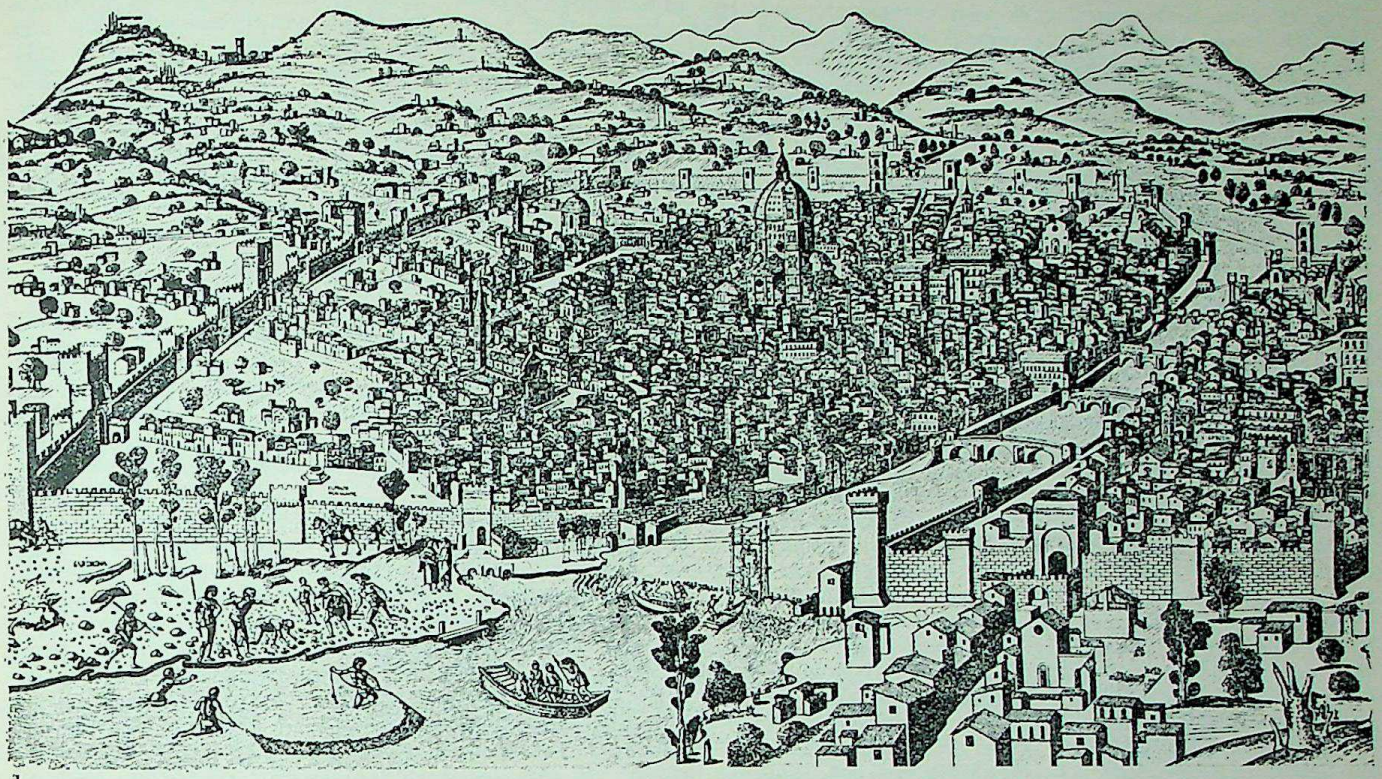
In Rome a renewed interest in urban design was initiated from the middle of the 15th century under Pope Nicholas V (1447–55). Nicholas began the Vatican palaces and entrusted the plan of the *borghi* to Alberti (I, PL. 403). From then on, great construction works succeeded each other without interruption for a century and a half. First came the reorganization of the ancient street network with the opening of new important arteries such as Via Giulia (under Pope Julius II, 1503–13), Via Paolina Trifaria (now Via del Babuino; under Clement VII, 1523–24), Via Trinità (now Via Fontanella Borghese), and Via Condotti (under Paul III, 1534–49), as well as the regularization of important ancient roads such as Via della Lungara and Strada Pia (now Via XX Settembre). The individual arteries lead out into the over-all polycentric organization of the city, based on the axes of the processional routes and on the focuses of the basilicas. This plan, laid out by Domenico Fontana with the advice of Sixtus V (1585–90), and including the Strada Felice (now Via Sistina and Via Quattro Fontane) and Via Merulana and Via Maggiore (now Via S. Giovanni in Laterano), was largely carried out during the pontificate of Sixtus V. Rome was thus developed with a basic skeleton that would contain the flourishing construction of palaces and churches. These were located near one another and were joined into a whole, giving expression and vitality to the old and new streets. The old city was reworked in order to create new squares and buildings that animated the urban profile and everywhere created a complex architectural agitation. It was a highly exceptional manner of interpreting urban space. All the relevant experience of the classical, medieval, and Renaissance eras were present together, and the new was perpetually created out of the living culture. The city as a whole took on the significance of an enormous laboratory for architectural experimentation. Roman urban space, so charged with individual vitality, no longer had anything in common with medieval urban space or with the spatial requirements of Humanism or the Renaissance. The individual features did not arise from the simple, common life of the people, or from calm intellectual contemplation, or from an abstract universal vision, but were on each occasion prompted by multiple expressive, dramatic, and commemorative meanings. From the first decades of the 16th century, Roman urban design passed from the Renaissance to the baroque; Michelangelo's Piazza del Campidoglio is one of the first and finest manifestations of this transition (PL. 132; I, PL. 390).

By this time, Florence, Venice, and Rome were centers of cultural irradiation. Thus there arose completely new enterprises and transformations of medieval urban environments: the plan of Castro (1530), designed and executed by Antonio da Sangallo the Younger; Palladio's (q.v.) loggias in the Piazza dei Signori (1549–1614; XI, PL. 35; XIII, PL. 238) and the Piazza delle Erbe, both in Vicenza; Vasari's (q.v.) Via degli Uffizi (I, PL. 396; IX, PL. 312), along one side of Piazza della Signoria in Florence (1560; I, FIG. 647); new streets laid out in Perugia and Genoa (ca. 1550) by Gian Galeazzo Alessi; and the planned urban renewal of Sabbioneta (1560; FIG. 209). By the middle of the 16th century, Italian urban design was so fully developed in both ideas and experience that it began to spread to other countries. Italian Renaissance models can be easily recognized in the new French cities of Vitry-le-François (founded 1545, after a project by the Bolognese Marino; PL. 133) and Nancy (founded 1588, after a project by Jérome Citoni), in the new Maltese city of Valletta (1560; IX, FIG. 415), in the cities of Polish colonization such as Zamość (founded 1578, after a project by Bernardo Morando from Padua), and in the architectural elements of the principal instances of town planning in the capital cities. The new Renaissance conception of urban space was taken as a model for the five *places royales* that opened the medieval city of Paris to the new idiom. The first of these, the Place des Vosges (1606; long considered the *place royale* par excellence), reverts to the motif of the enclosed, arcaded square of Brunelleschi's Piazza dell'Annunziata; the volumetric proportions are different, however.

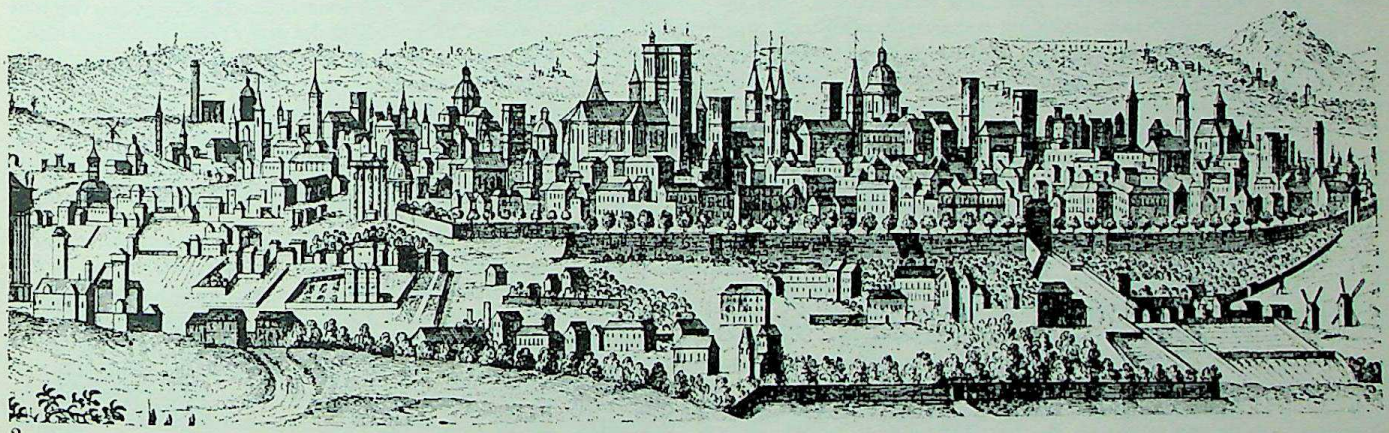
The baroque city. In the Renaissance, urban design was always the result of individual artistic creation, although it was imbued with spatial mathematics founded on symmetry and perspective axes and focuses. Rectilinear street plans were animated by a diversified mixture of buildings that were individually characterized. Although the plazas and widenings in the street pattern took the form of regular geometric figures, they were vitalized by architectural combinations that seemed frequently disparate yet skillfully juxtaposed, but not without a certain harshness — all in the search for a complex but nonmechanical and dynamic equilibrium. The medieval tradition of free spatial composition continued to invigorate the urban fabric even through the filter of the artistic expression of the Renaissance.

The spatial conception of the Renaissance took on a new

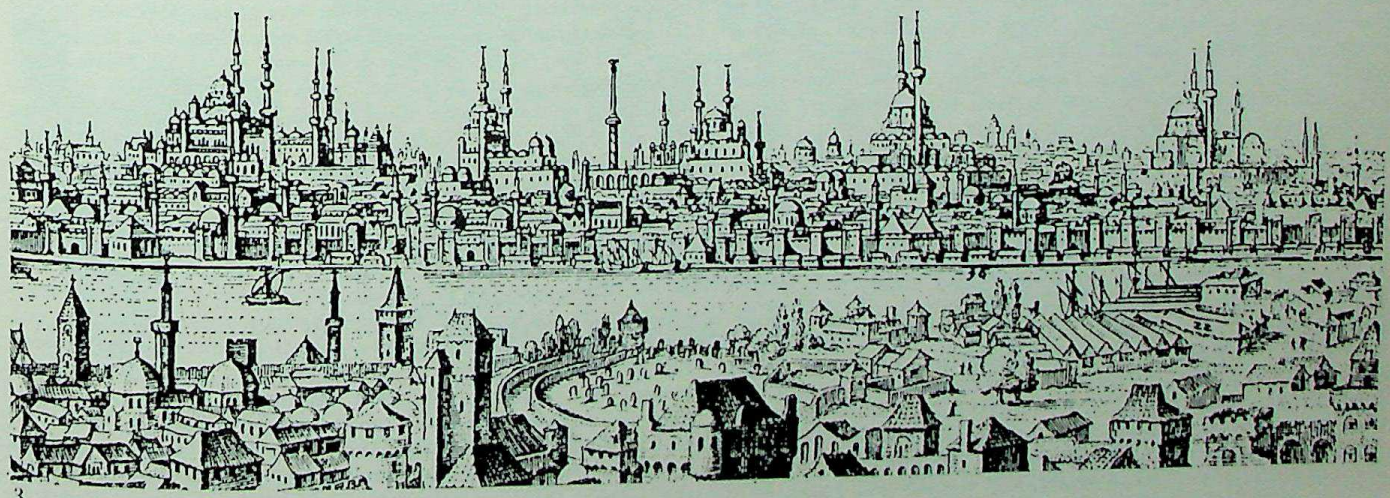
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



1



2



3

Urban iconography: (1) Florence, perspective view, ca. 1470; (2) Paris, beginning of the 18th cent.; (3) Constantinople, 1638, print by M. Merian.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

character when architectural uniformity extending over large areas was joined with the regular pattern of streets and plazas, when the rhythm of architectural volumes was deliberately intensified in a somewhat theatrical manner, when regularity and dynamism were skillfully combined, and, above all, when aulic and celebrative meanings infused the urban spaces. These new spatial conceptions expressed themselves in a mode suited to the Counter Reformation, the splendor of the courts, and the tastes of the nobility. The fundamental components of the new baroque style were architectural regularity along the straight avenues and around the plazas, perspective approaches to courtly monuments, broad flights of steps, fountains and ornamental water displays as urban furnishings, the predominance of increasingly large spaces, splendid extra-urban residential establishments,) and formal gardens. With these developments the city assumed a dimension that made it increasingly remote from the life of the common people — a life that was confined to its own districts. These districts were then separated by large architectural spaces that were no longer conceived as places for human encounter; rather, they became rapid thoroughfares for carriages in movement to and from the centers of presentation and power within and without the city. The baroque scheme arrogantly superimposed itself upon the preexisting city, as in Palermo (PL. 134; VIII, FIG. 750), where the Cassero (1564–81) and Via Maqueda (1597), intersecting at the piazza known as the Quattro Canti (1611), cut deeply into the ancient city fabric. Cities were thus often brutally fragmented by the new spatial schemes and, with few exceptions, were adapted to the new functions of urban capitals.

Two cities, Amsterdam and Turin (PLS. 133, 134), which developed rapidly from the first decades of the 17th century, were able to escape the pompous baroque schematisms and to create formally and socially balanced complexes while utilizing the new baroque spatial repertory. Amsterdam is famous for its plan of 1593, which gave the enlarged city the shape of a semicircular crown arranged around the ancient nucleus and divided by three large canals (X, FIG. 585). The city plan was speedily effected (1612–63), using land previously acquired by the municipality. Upon each residence and merchant's shop or warehouse was the stamp of a highly civilized and egalitarian way of life. Amsterdam was a prosperous, cultured, commercial, and openly Protestant city in which there were no great class inequalities and waste and ostentation were considered offenses. The population was able to multiply fourfold in fifty years, and the communal administration adopted thoroughly modern business practices in the construction of the city and management of the port.

Turin (VIII, FIG. 537) in about a hundred years and three successive planned phases of extension (1624, 1673, 1714) — the last the work of Filippo Juvara (q.v.) — grew from a small Roman city to a capital city, and then to a small state, skipping every intermediary phase. More important, through strict control Turin has maintained a measured and acceptable spatial equilibrium in which stand out, with their restrained vigor, the works of Guarino Guarini (q.v.) and Juvara, among whose masterpieces is the nearby hunting lodge of Stupinigi (PL. 134; I, PLS. 389, 407; II, PL. 141). The city is homogeneous and coherent, and its baroque elements are widespread, even at the popular level.

For two centuries baroque spatial inventions predominated in Europe. They were abundantly applied in the building of new cities, including Palmanova (PL. 144), Richelieu (1635), Mannheim (1648), Suarlouis (1681), and Neuf-Brisach (1698) — the last two based on plans by Sébastien Le Prestre Vauban (1633–1707). These inventions, which became the compulsory formula for European capital cities, can be noted in the series of planned urban centers that arose in Sicily after the earthquake of 1693 — Grammichele (1700), Noto (1703), and, in the same years, Augusta, Catania, and Ragusa (PL. 134) — and in the new royal establishments at Versailles (1662; VIII, PL. 437) and Karlsruhe (1715; VI, FIG. 258).

In London the canons of baroque composition, introduced with the detailed plan of Covent Garden (1630), were followed in the plan by Christopher Wren (q.v.) for the reconstruction of London after the fire of 1666, which was realized only in the environs of St. Paul's Cathedral, and in single projects such as King's Square (1681), Soho Square, Grosvenor Square (1695), Bedford Square (1770), and Bloomsbury Square (1776). These squares introduced the closed square with homogeneous architecture and a central garden. Extensive application of this new spatial model appears in the plan of Edinburgh (1776; VI, FIG. 805), while in Bath (VI, FIG. 790) architectural modeling in the form of rectilinear, semicircular, semielliptical, and sinuous blocks is fully realized in the Circus (1754), Royal Crescent (PL. 135), and Landsdowne Crescent (1794).

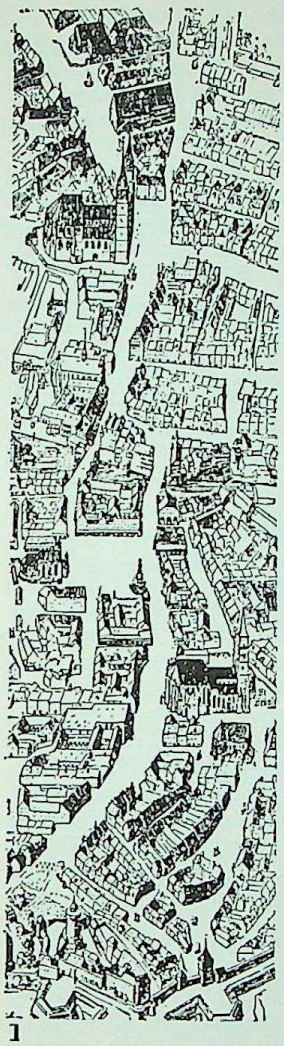
In Rome the baroque scheme, already formed during the 16th century, continued for two more centuries to absorb the works of great masters from Bernini to Borromini (qq.v.) and to be enriched with dramatic new spatial creations, including Piazza S. Pietro (1656; I, PL. 405), Piazza Navona (I, PL. 402, FIG. 647), Trinità dei Monti (1723–25; II, FIG 303), and Piazza di S. Ignazio (1727), each of which represents a complete work and an original exploration of new spatial compositions (FIGS. 205, 209).

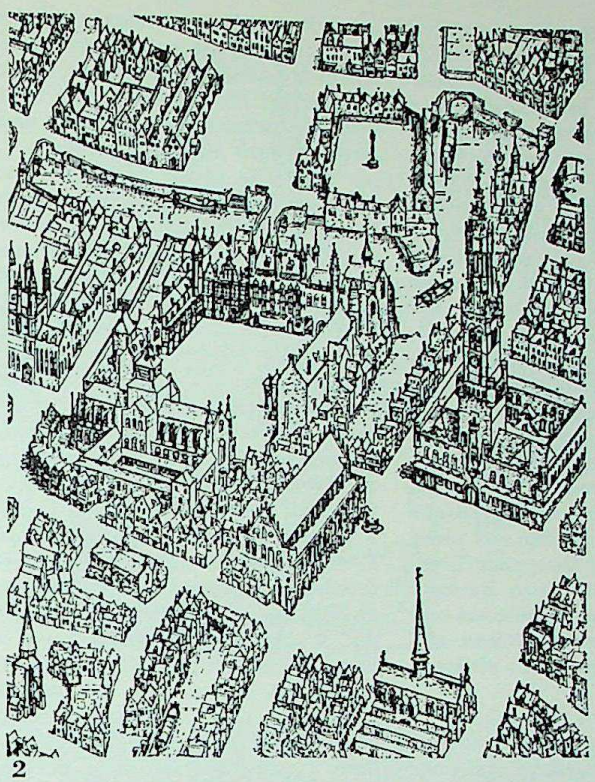
Paris, which was experiencing continuous growth, remained obstinately hostile for centuries to every form of planning (V, FIG. 537). As early as 1623 Louis XIII, who deplored speculation in building sites and the disorder caused by construction, tried vainly to establish geographic limits to the growth of the city; in compensation, he resumed construction of the Louvre in 1629. Under Louis XIV and the superintendence of Colbert at least 1,914 "off limit" constructions were censured in 1671, providing documentation of the degree to which Paris was developing in a manner described as "tentacular" or "like a spot of oil." In 1674 new boundaries were fixed, and in 1675 the first general plan based on a precise topographical survey was drawn up by Nicolas François Blondel and Pierre Bullet. Known as the Plan d'Embellissement, it provided for the opening and widening of a series of streets ("pour faciliter la communication des quartiers"), systematization of the quays along the Seine, installations for the conduction and distribution of water, new city gates, armories scattered about the city, and the creation of a promenade with four rows of trees — the first of the boulevards.

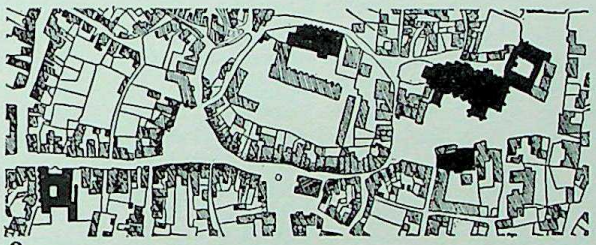
The plan of 1675, largely carried out by Colbert, applied norms for the protection and recovery of positive values in the organization of the city and constituted the first comprehensive infrastructural framework for Paris. It is considered the earliest example of an operative plan intended for short-term realization and drawn up with a view to the immediate requirements of urban life. However, another baroque plan, consisting of works erected "à la gloire de Louis XIV," was subsequently superimposed on the Plan d'Embellissement. In 1662 or 1664 execution of the grandiose plan for Versailles was begun, followed by the transformation of the palace (1669) according to a design by Louis Le Vau (q.v.). In that same year André Le Nôtre (q.v.) began the Tuileries (VIII, PL. 438). The year 1685 saw the beginning of two other royal plazas — Place des Victoires and Place Vendôme (X, PL. 153), each planned by Jules Hardouin Mansart (q.v.) and conceived as a setting for a royal statue. Generally the monumental works of homage to Louis XIV arose sporadically and without a comprehensive vision; they nevertheless increased emphasis on the course of the Seine, thus redefining the ancient north–south axis of the city.

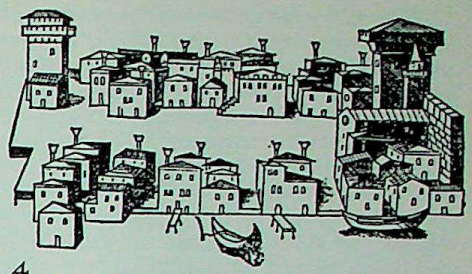
Paris continued to grow beyond the old pre-1675 boundaries and beyond the new outlines of 1724 (FIG. 201). Expansion was the undisputed field of private speculation, with many intentions and few accomplishments, which was denounced by Voltaire toward the middle of the 18th century in his *Discourse* ("Ce qu'on ne fait pas et ce qu'on pourrait faire") and in his *Embellissement de la Ville de Cachemire*. In 1748 a competition was launched to enrich Paris with squares in honor of Louis XV (FIG. 209). The results were assembled by Pierre Patte in *Monuments ériges en France à la Gloire de Louis XV* (1765) and presented in the form of a general plan that, by adorning the city with squares, would have swept away nearly all preexisting elements. The work is an example of the extreme degeneration of baroque town planning.

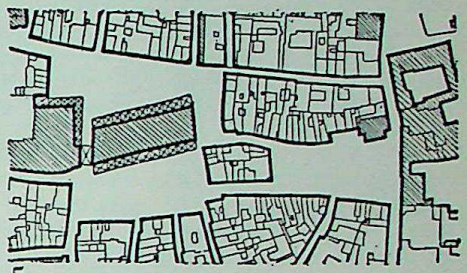
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

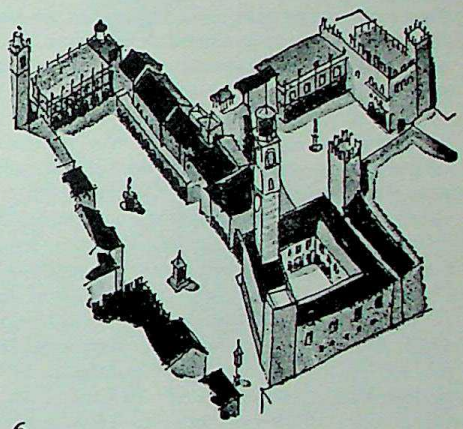

1

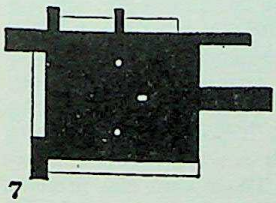

2


3

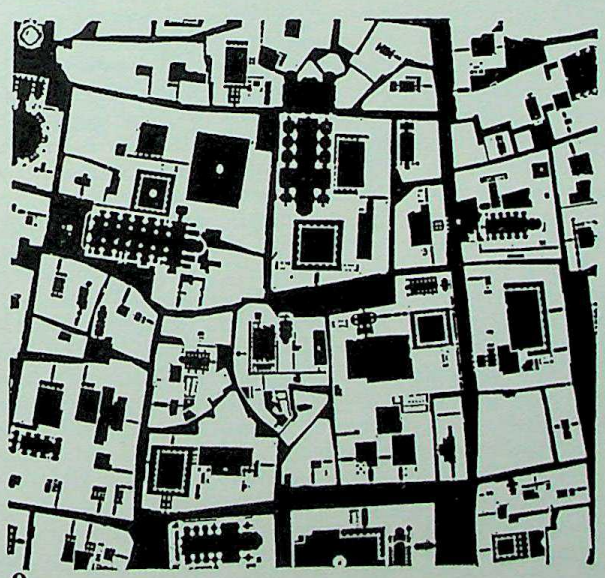

4

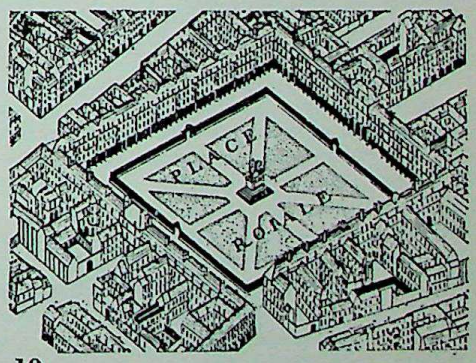

5


6

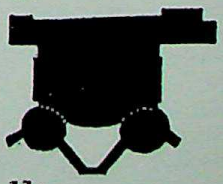

7

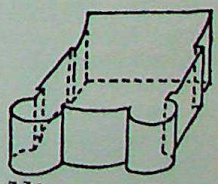
8


9



10


11a


11b

The configuration of the medieval, Renaissance, and baroque city: (1) Nürnberg, view of the medieval city; (2) Bruges, city center and market square, print by M. Gheeraerts, 1562; (3) Paderborn, center of the medieval city; (4) Chioggia, 16th cent., print by B. Bordone; (5) Padua, system of central squares in the medieval period, completed in the Renaissance; (6) Verona, Piazza delle Erbe and Piazza dei Signori, laid out in the medieval period, architecturally defined in a subsequent period; (7) Florence, Piazza dell'Annunziata; (8) Venice, Piazza S. Marco; (9) Rome, baroque squares, plan by G. B. Nolli, 1748; (10) Paris, Place Royale, now Place des Vosges, constructed 1605 from the Plan Turgot, 1734–39; (11*a*, *b*), Rome, Piazza S. Ignazio, opened 1727–28.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

During the last decades of the *ancien régime* the trigonometrical survey of the city was begun (1784) by Verniquet, superintendent of roads. In 1793, on the basis of this survey, the Commission of Artists, headed by Verniquet himself, formulated a plan for the development of zones containing confiscated ecclesiastical properties and for a system of new streets, among which the Rue de Rivoli, executed in 1801 under Napoleon I, assumed great significance owing to its examplary use of space in the urban context. However, the temptation to courtly and theatrical display was not yet subdued; it was to arise once more under Napoleon III with a plan calling for demolition on a huge scale and the construction of a network of boulevards, which was carried out by Haussmann (FIG. 209).

With its progressive conquest of Paris, baroque design achieved predominance throughout Europe. Paris served as a model for St. Petersburg (founded 1703; now Leningrad), but the construction of St. Petersburg, rather than proceeding in a planned manner as in other newly founded cities or princely residences, dissolved into a series of isolated schemes. The original plan by Le Blond (1717; FIG. 209), inspired by late Renaissance models of ideal cities, was soon abandoned, and the city owed its character more to the majesty of edifices by Domenico Trezzini, K. I. (Carlo) Rossi (PL. 241), and Bartolomeo Rastrelli than to the 1753 plan designed by the Academy of Sciences and Arts. Buildings of powerful dimensions, enormous gardens, and miles of architectural prospects lining the water form a strikingly impressive baroque complex.

Similarly, Copenhagen (IV, FIG. 345) had tried in 1627 to expand in accordance with the schemes of ideal cities by adopting an ingenuous star plan with 16 radials, which was only partially carried out (e.g., Nyboder, the seamen's quarter, 1631). In 1749 a new and more extensive plan was adopted and the monumental Amalienborg complex was laid out (PL. 135), consisting of an octagonal plaza, whose axis runs from the Marble Church to the canal, and the royal palaces facing it.

Other cities that expanded in accordance with baroque plans were Stockholm (plan of 1640; XIII, FIG. 753); Vienna (II, FIG. 154), with its monumental complexes from the end of the 17th century; Berlin (VI, FIG. 239), which began to expand after 1733 on a strictly baroque plan; and Lisbon (XI, FIG. 533), where the plan of reconstruction after the earthquake of 1755 included large blocks and rectangular edifices overlooking the Praça do Comércio, which opens onto the Tagus River (PL. 134).

Thus for two centuries, as we have seen, baroque spatial models constituted the unifying matrix of European urban design. But the baroque conception was not limited to Europe. Its models were widely imitated in the cities of the New World, from the plan of Philadelphia by William Penn (1682) to that of Washington, D.C., by Pierre L'Enfant (1791). Echoes of the baroque tradition, cloaked in neoclassicism, were further prolonged in the United States and Europe during the first half of the 19th century (see figs. in UNITED STATES OF AMERICA).

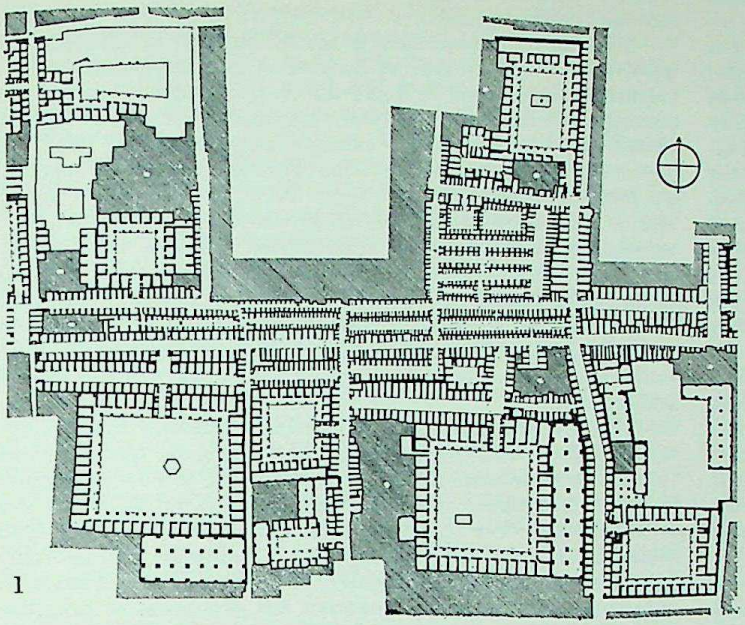
In all urban compositions of any value, an underlying element is the use of baroque spatial models, which were reproduced without substantial innovations, sometimes correctly but more often in a coldly academic manner. Such urban compositions range from the fantasies of Claude Nicolas Ledoux (q.v.), which were expressed with a modernity of intention in the Ville des Salines (1773), to the broad plazas and long, straight streets of Paris designed by Gabriel (q.v.) and Haussmann, the piazzas and districts of early-19th-century Turin, the monumental center of Helsinki (first half of 19th cent.), and the layout of the Vienna Ring (1853; PL. 135). The baroque conception of urban space eventually lost its vitality and became purely formalistic. The industrial revolution was imminent.

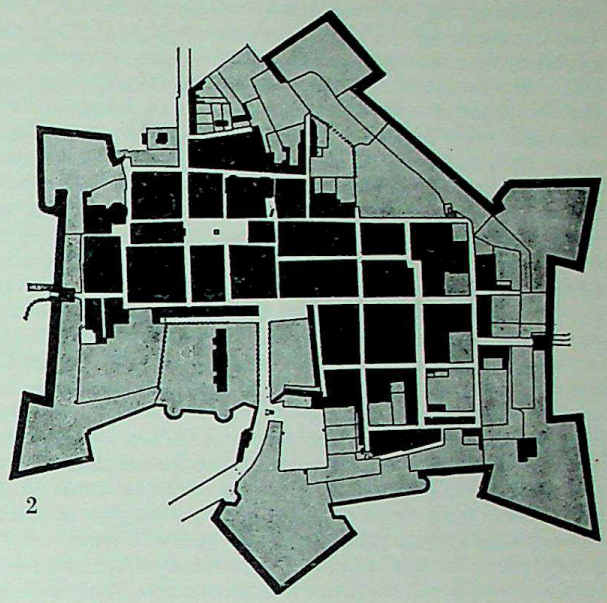
Disintegration of urban space. From the middle of the 19th century to the present day, in all countries with long-standing urbanization, a process parallel to that of economic development has occurred: the disintegration and recomposition of urban space. The process passes through various stages that involve, first of all, a rapid and widespread deterioration of both the more ancient urban fabric and the fabric formed or consolidated according to baroque spatial conceptions. Next occurs the disintegration of the new spatial elements in the process of being formed, owing to incoherent and excessive dispersion or concentration. And finally there is the laborious attempt to reestablish the urban and territorial space in accordance with still-evolving aims and conceptions.

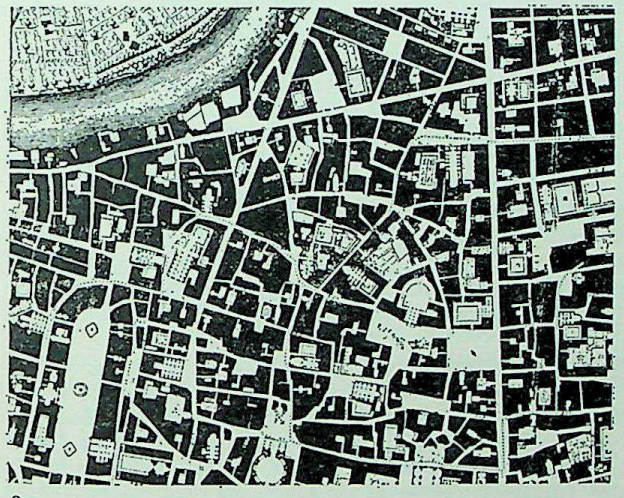
The early phase of the degenerative process begins in the compact settlements contained for centuries within the physical limits of fortifications and now overflowing with an expanding population. An increasingly pronounced architectural degradation appears. Unhygienic and inhuman conditions of overcrowding occur and are encouraged by relentless building speculation. The earliest and most acute manifestations of the degradation of urban space during this period were contemporaneous with and resulted from the beginning of the industrial revolution; they are called slums, hovels, *taudis* in France, *bassi* in Naples, and *catói* in Palermo. They have been denounced by writers and moralists, including Victor Hugo (*Notre Dame de Paris*, 1831), Friedrich Engels (1845), and Charles Dickens (*Nicholas Nickleby*, 1838–39; *Hard Times*, 1854), and by the first inquiries into hygienic conditions, such as the report by Edwin Chadwick (1843). For decades these conditions constituted one of the most dramatic products of the rising industrial civilization. Intervention favoring abolition of the unhealthy and unacceptable conditions found in overcrowded and degraded districts began toward the second half of the century, originating in various places from the devastation caused by fire (e.g., Hamburg, 1842; London, 1861; Constantinople, 1870) but primarily from epidemics of Asiatic cholera that raged in the more congested districts of port cities (Naples, 1884; Venice, 1885; Hamburg, 1890). Almost without exception, community intervention followed the Haussmann technique, which was based on two related operations: razing of the districts considered to be unhealthy and reconstruction by superimposing a new urban plan on the effaced pre-existing scheme. The new plan was often marked by baroque academicism and was characterized not only by wider spaces for circulation but also by larger buildings that would guarantee a financial profit. The Haussmann technique was justifiably applied to the elimination of workers' cottages of the English type, which were the result of shabby and ephemeral speculative construction in the 19th century; their radical abolition was, in fact, the only possible solution. But the technique was also applied in the so-called "redevelopment plans," which produced irremediable deterioration in such historic cities as Naples, with the opening of the Rettifilo (1885); Florence, in the zone surrounding the Piazza del Mercato Vecchio (now Piazza della Repubblica, 1885); and Venice (1891), where, fortunately, only a small amount of redevelopment was actually carried out. There were also projects for the "liberation of monuments" that employed a similar technique and resulted in equally serious damage to the urban environment. These projects led to the disfiguring of the spaces in front of the Cathedral of Notre-Dame in Paris (ca. 1830), the Cathedral of Milan (1860), the Collegiate Church of SS. Michel et Gudule in Brussels (1861), and the cathedrals of Rheims (1862), Chartres, and Coutances (end of 19th century). Modern criticism condemns these operations, but they inspired a long series of interventions and were deeply lodged in official thinking for almost a century. Rehabilitation and the so-called "liberation of monuments" cut into the urban fabric with violence, removing entire building masses, upsetting archaic spaces and relationships, and arbitrarily introducing obviously foreign elements whose only common denominator was the cynicism of financial calculation and academic eclecticism. Outside the compact built-up areas, however, another building explosion was occurring. This was the second stage of the disintegration and disfigurement of traditional urban space. This stage did not take place everywhere simultaneously or in the same manner.

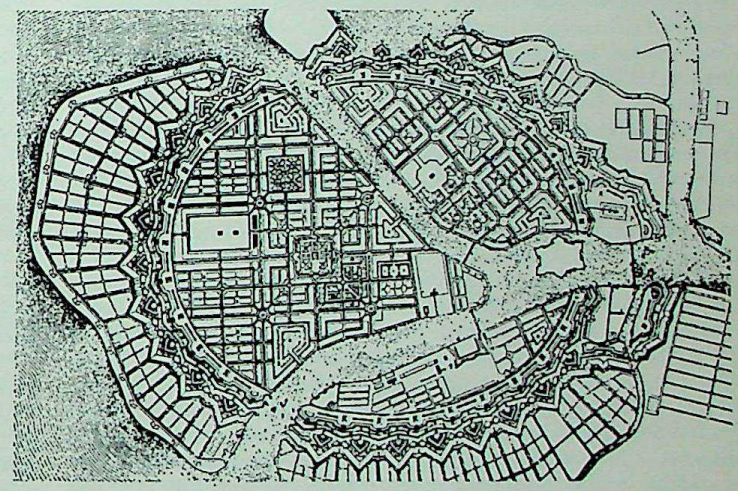
In some cities, during the last decades of the 19th century, urban planning continued in the ancient medieval and baroque traditions. These were the cities least influenced by the pressure of the tumultuous industrial development. Thus, in the second half of the century Turin continued to expand in accordance with the tradition established in its extension plans. But

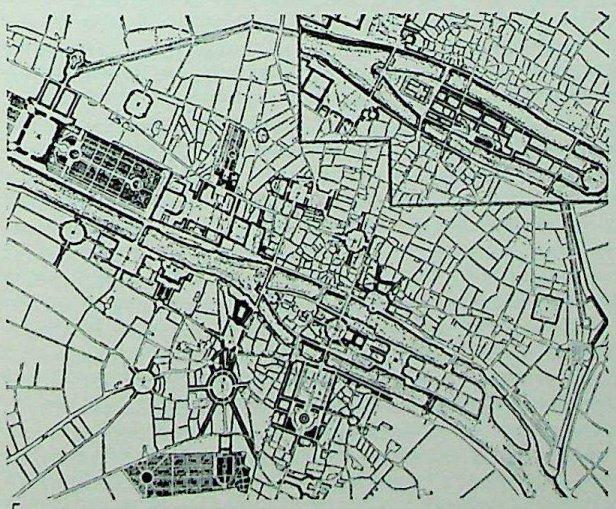
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

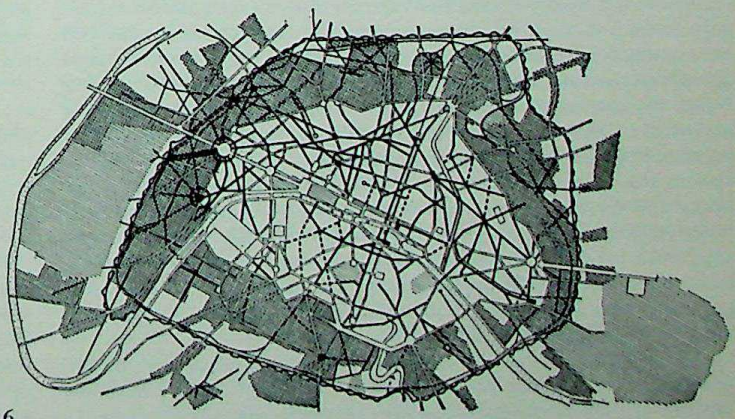

1


2


3


4


5


6

The Renaissance and baroque city: (1) Aleppo, persistence of the Greek agora and Roman forum in the Arab city fabric; (2) Sabbioneta, street plan by V. Gonzaga, 1560; (3) Rome, insertion of baroque squares in the ancient city fabric, plan by G. B. Nolli, 1748; (4) St. Petersburg (Leningrad), plan by F. Le Blond, 1717; (5) Paris, proposal for monumental development of the city, presented in the competition of 1749; (6) Paris, the Haussmann plan, 1853–96.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

even these plans succeeded one another at an increasingly rapid rate without any comprehensive vision, which was to be attained only in the 1908 plan. From 1852 Genoa resumed the tradition of planned expansion with a succession of detailed plans that produced the measured and highly dignified aspect of the Via Assarotti (1852) and the panoramic airiness of the Circonvallazione a Monte. The development of Genoa was governed by a series of plans that succeeded one another without interruption until 1920. Similarly, with the 1865 plan by Giuseppe Poggi, Florence anticipated the technique of a general plan for the circular extension of an existing city; this technique is found again in expanded form in Cesare Beruto's plan for Milan (1889). Thus Rome, which experienced a building boom between 1870 and 1887, developed along the lines projected in the extension plans of 1873 and 1883 (although on a reduced scale) until the general plan of 1909. A similar situation prevailed in Amsterdam, where the plan for expansion to the south, drawn up between 1902 and 1915 by Hendrik Petrus Berlage (q.v.), was being executed throughout the twenties; it constitutes an exemplary model of the formal coherence of the so-called "romantic school." Each of these cases concerns purely residential extensions, to which the rules of neoclassic town planning were still applicable in some ways.

Where industrial initiative was strong, formal limitations no longer sufficed. Industry was intolerant of any restrictions and presumed itself to be a sufficient guide for the entire economy and thus for all the social relationships involved. It very soon imposed its requirements on historical cities that had been subjected for centuries to formal planning. Factories and rental housing formed the new aspect of English industrial cities for many decades. Unplanned suburbs, devoid of any regulatory system or disciplined solely by elementary norms of street alignment, soon crowded around the historical cities and spread in a tentacular and disorderly fashion on the territory along the old road systems. New urban complexes arose wherever favorable factors for industrial location were present; they lacked specific norms or predetermined plans and existed solely to fulfill business programs.

The new means of public transport — railroads, subways, trolley lines — at first followed the course of the old roads and reduced the time of transit, producing both an intensification of traffic and a lengthening of interconnecting routes between different urban and extra-urban areas. The old center of the city, which had been the traditional crossroads and a place for pause and exchange, became increasingly overworked and congested by traffic. These centers also became the coveted target of highly profitable real-estate operations, which were stimulated by the growing centralization of commercial interests and by the increasing revenue yielded by centrally located properties.

From the first years of the century the over-all urban structure could no longer be separated from the dynamic element, and the network of public transportation in large cities soon became an infrastructural framework capable of rigorously conditioning urban development. Transportation engineering thus assumed a position of preeminence in the field of town planning. The turning point in urban transport, however, came with the widespread use of the private automobile, as a result of which the tentacular development of large cities was no longer conditioned mainly by the network of public transport. The dispersion of economic activities and residential building are, in fact, favored by the individual and autonomous transports of persons and goods, which furthermore entered into competition with the old means of transportation.

The manifestations of this new individualistic and dynamic use of space were not long in appearing. There were four basic effects: (1) an increase in the magnitude of urban settlements beyond all precedent or prediction; (2) the multidirectional spreading of agglomerations along the axes of communication, with uninterrupted ramifications of considerable length; (3) the possibility of inserting scattered or fragmentary residential or industrial developments so long as they remain within the larger area of the communication and transportation network; (4) the expansion of the area of influence or encroachment of the urban center and, in the case of large agglomerations, the expansion of the metropolitan area, within which develop zonal interrelationships entailing a rhythmic flow of persons and goods.

The enormous expansion of the dynamically urbanized territory, within which areas of congestion and dispersion spontaneously formed, soon replaced the closed compact city and the successive extensions (through successive mono- or multidirectional "additions" or concentric-ring radiation) that had for centuries directed its growth. Through the actual breaking up of the compact city, traditional urban space emerged unbalanced and disconnected, either excessively split through disaggregation or excessively consolidated through conglomeration. The traditional plans for extension that survived in some cities at the end of the century dissolved in collision with new dynamic forces because of the lack of any precise idea as to their rational and scientific organization, and the absence of an overt political desire to control and guide the forces involved toward social ends.

The new arrangement of urban space resulting from the internal and external disintegration of the historic city and from its territorial expansion has involved the use of new typological elements in keeping with extreme tendencies to dispersion and concentration. On one hand, there have spread over the land isolated or scattered buildings, or buildings rudimentarily joined in amorphous groupings, which are often inferior in coherence to the most elementary hut groupings of primitive societies; on the other hand, there has arisen the general practice of constructing compact multistoried and towerlike structures, which permit maximum use of building volume. An urban space that is not the result of over-all planning but, rather, the product of a simple summation of the various individual programs, each spatially and temporally distinct and autonomous, cannot present any formal characterization; it occurs instead in an open and receptive form as a continuously variable combination of empty spaces that tend to be filled gradually according to the law of casual succession and as a continuously variable aggregation of filled spaces of different volumes that slowly tend to combine, increasingly thronging together to the point of obstruction. Obviously an urban space of this type, marked by casualness and arbitrariness, can never achieve coherence and a stable combination of elements, regardless of its relative density.

The disaggregation of space causes psychological as well as social and economic consequences. Individual reactions to the lack of spatial cohesion may be repulsion or nonattraction, annoyance or indifference, or even attraction, which may well affect the depths of the psyche and, in any case, cannot fail to influence group psychological behavior and consequently social relationships. Furthermore, crowding, dispersion, and haphazardness inevitably act in a miseducative sense on the development of taste. This is a field of scientific research that awaits adequate exploration, having thus far only been touched upon by the sociometry of Moreno (1953) and the sociological research of Chombart de Lauwe (1952).

The loss of spatial cohesion also entails a reduction in the social utility of the urban built-up area. An excessive thinning out through a decrease in the number of buildings causes a proportionate diminution of human contacts, with a consequent drop in the vitality of social life and a dilution of social services owing to relative disuse. A similar situation is caused by excessive crowding, which, through the massing of building and a corresponding heightening of social tension, provokes a concentration of services in too small an area, creating serious distributional scarcity. Thus the social utility of the built-up area falls short of the average acceptable conditions of individual or collective existence. Furthermore, the atomistic dispersion of commerce and production throughout the metropolitan area, which results from the logic that determines the individual entrepreneur's choice of location, cannot produce a rational and coherent system from the point of view of spatial distribution; it can lead to random and more or less illogical spatial combinations that vary in their aggregate economic utility. Because of this irrationality in the distribution of places of production, storage, and exchange, additional expenses are often incurred in installation, administration, production, and transport. Sim-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ilarly, both the atomistic dispersion and the massive concentration of dwellings create additional expenses in the installation and administration of public facilities and higher transportation costs for individuals due to the lengthening and multiplication of routes in low-density areas and traffic congestion in high-density areas. Private developers restrict themselves to building dwellings and assume no share of the financial burden of public works, services, or transportation; this expense is left to the local institutions. The results in terms of the quality of urban life lead inevitably to a lowering of efficiency caused by a lack of services and to unforeseen financial expenses that must be transferred to the balance sheets of the local communities as long-term liabilities. Current techniques of economic and town-planning analysis attempt to establish a reasonable balance between long-term social advantages (which may be costly) and short-term profits.

Efforts to correct this situation, which is negative from every point of view, coincide with advances in the modern science of town planning and the difficult problems of practical application. Contemporary town planning endeavors to rediscover and recompose the internal cohesion of urban space with a wide variety of methods and intentions. The following sections will illustrate the various methodological approaches, the results obtained, and the most advanced current trends.

Rediscovery, analysis, and reconstruction of urban space. The slow process of recovering urban space through rediscovery of its constituent elements, as well as the exact specification of methods and principles for a coherent recomposition of space, began with Camillo Sitte's analysis (1889) of the compositional criteria of public urban spaces. The criteria were sought mainly in medieval and Renaissance thinking and were compared with the geometric aridity of contemporaneous gridiron plans for expansion and subdivision. Although Sitte's conclusions (e.g., the outdated appeal for a revival of civic art) are no longer critically acceptable, he opened the way for a rediscovery of historical centers and stimulated discussions on the importance and meaning of greenery in the modern city.

Sitte, Ebenezer Howard, and Patrick Geddes are connected with the school of English town planning represented at the beginning of the 20th century by Sir Raymond Unwin. In *Town Planning in Practice* (1909) Unwin developed Sitte's methods of spatial analysis, extending research to the study of medieval public spaces and their most vital survival, the agricultural village. From these he drew inspiration for a logical and varied spatial composition in the first practical applications of town design: the projects of Letchworth (1903; the first garden city), and Hampstead Garden Suburb (1907), both of which were designed in collaboration with Barry Parker. Unwin's methodological bases for spatial research, founded on direct observation and empirical reasoning, are very representative of English experimentalism. Almost half a century later they reappear, with a modern countenance, as the premise of Frederick Gibberd's *Town Design* (1953).

From Gibberd comes the plan of the New Town of Harlow (1947), one of the first New Towns of the postwar period (construction began 1949; first neighborhood completed 1952). In both his writing and practical experimentation Gibberd develops a theme favored by Unwin — that of spatial composition within groups of low residental dwellings. Gibberd concentrates on the treatment of angles resulting from the articulation of building masses and road insertions, as well as the perspective organization of the complex from the standpoint of a dynamic succession of vistas from the road axis. He applied his research on the composition of Italian Renaissance piazzas (PL. 142) to one of the first modern civic and commercial centers in Harlow. In England, from Unwin to Gibberd, spatial composition was practiced almost exclusively on the rare occasions of *ex novo* creations of cities and districts. These themes were dealt with in a completely different manner from the preindustrial approach to designing, but their prototypes of the 1950s, despite the careful design base and compositional study, still revealed a certain precariousness and lack of characterization that required correction.

From the succinct criticism in this direction by the *Architectural Review* group arose the new doctrine of the townscape. Gordon Cullen (1961) has defined it as an art by which an insignificant cluster of trees or group of buildings can be transformed into a richly significant composition, or by which a whole city can be realized as a three-dimensional environment from a mere design on paper. For Cullen the spatial environment is characterized by its constituent elements (buildings, trees, water, traffic, street furniture, advertising), by their combination, and, above all, by the manipulation of possible patterns that will enable a town to operate with equal success. Townscape is therefore the art of relationships that transforms a group of buildings or an entire city into a dramatic event in the environment. According to Cullen this art is based on the mastery of three elements: (1) serial vision — a deliberate and dynamic unfolding of the town scenery "in a series of jerks or revelations" revealed by turns to the pedestrian in the thoroughfares; (2) awareness of man's personal relationship with the environment (PLS. 138, 139), which permits manipulated space to create a dynamic and continuous plastic experience by such means as the alternation of openings and closings and the alternation of oppression and liberation, obtained through a vast repertory of spatial articulation, including enclaves, enclosures, subdivisions of space, interruptions, fluctuations, undulations, narrows, linkings and joinings, changes of level, focal points, landmarks, exposures, and outlets; (3) content, understood as the emotional meaning of the physical elements constituting the townscape and its fabric (materials, colors, textures; PLS. 140, 141), which in certain combinations and relationships achieve effects of immediacy, individuality, bluntness, vigor, appropriateness, intimacy, illusion, nostalgia, mystery, relief, and so forth.

The choice and manipulation of the various spatial elements, when they are used in the most subtle nuances to obtain the maximum visual effect, can create an urban scene that becomes vibrant with sensations and meanings. This is shown by the fascinating graphic and photographic analyses by Cullen and his school of urban spaces (PL. 143). The subjects are drawn from smaller urban centers that remain uncorrupted by spatial degeneration. The enucleation and analysis of these urban components — which are defined by De Wolfe (1963) as *civilia*, or townscape — not only stimulate learning in the didactic sense but simultaneously lead to a discovery of the profound meaning of the spatial idiom. Even more important, such analysis leads to the consideration of urban space as a composite of all present elements, even the most insignificant, and to a sense of total participation in this space.

Another way of approaching the underlying principle of urban space is linked to the theory on the structure of form (*Gestalttheorie*) and particularly to experiments in Gestalt psychology. Ludwig von Wiese goes back to Gestalt experiments and theory in his studies of the behavior of inhabitants of a neighborhood or agglomeration. Spatial connections, density, and social distance determine a common *Gestaltschau*, or structural vision, which affects interpersonal relationships and thus determines behavior. Sociological research in this field has been summarized by Gregor Paulsson (1959). The strictly visual aspects of urban *Gestaltschau* have been the object of experimental research by Kevin Lynch (1960), carried out with a methodology that differs profoundly from that of Cullen in purpose and field of exploration. Lynch's research does not examine spatial components of high and tested emotional potential but investigates typical elements of the urban townscape in contemporary North American cities; these elements are obviously damaged by spatial incoherence and separation. Nor is Lynch's research directed toward examination of psychological reactions to the environment by inhabitants or visitors; it aims solely at identifying the structure of the urban form as it is ordinarily accepted. The city can be considered an "artifact" only through long periods of time and through repeated experimentation in which each urban element is placed in relationship to its surroundings, to the preceding sequence of events, to the memory of preceding experiences, and to the associations that every citizen has with each element, so that it is charged with sym-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

bolic meanings. At this point, an attempt can be made to objectify and to extract from these experiences the citizens' "public" image of the city.

Once it has been ascertained that an organized urban environment can act as a broad system of reference and that every environmental image has a social function in affording raw material for the symbols and collective memories of group communication, a further point can be made. Certain objects possess a high potential for evoking a strong image; this is called "imageability." In any given urban environment the strong and the weak points of the image can be identified. Among the strong points are individuality, simplicity of form, continuity, dominance, visibility of joints or seams (as in a major intersection), and directional differentiation; among the weak points of the image are confusion, isolation, discontinuity, ambiguity, and lack of character. Through research on the channels of observation, on the margins, on the districts considered internally characterized, on the accessible focal points of interest, and on the landmarks or inaccessible symbolic points, it is possible to construct a "visual plan" that corresponds to the observer's mental image of a given environment. Investigation of a wide sample ensures the validity of the visual plan as a group image (PL. 142).

Once visual plans have been constructed, critical analysis (according to Lynch) can be applied to the suitable creative decisions for scientifically reorganizing the mental image of the city. Though Lynch proposes to transform even the great contemporary city by replacing the fear and confusion it inspires with "delight in the richness and power of the scene" (ibid., p. 119), he offers no operative suggestions and limits himself in his subsequent study (1962) to developing the theme of the complete spatial organization of the smallest possible residential group. The spatial reorganization of the large city eludes Lynch's formulations.

The method for the integral recomposition of urban space does not and cannot emerge from interpretative research on urban space. The complex socioeconomic structure of the urban reality can be substantially modified only by means of controlling the socioeconomic factors themselves, which to a varying extent generate the space. But from the more recent experiments of Lynch and Cullen, as well as those of Moreno and Chombart de Lauwe, there emerges a new, more complex, and richer way of conceiving urban space that demands thorough examination by means of an interdisciplinary integration of all research. A particularly illuminating exploration could derive from an exhaustive historical-epistemological interpretation of correlations between the scientific concept of space and the concept of urban space implied in concrete urban creations at different historical periods and in different countries.

Albert Einstein, in his introduction to a book by Max Jammer (*Concepts of Space: The History of Theories of Space in Physics*, Cambridge, Mass., 1954), outlined two opposing concepts of space: "(*a*) space as positional quality of the world of material objects; (*b*) space as container of all material objects." The former appears in the Greek and medieval conceptions of urban space, which are based on the juxtaposition of elements; the latter appears in the *ratio mathematica* of Renaissance space. The attempt to reconcile the geometric (*a*) and kinematic (*b*) interpretations of space by introducing the system of Cartesian coordinates as well as the Galilean and Newtonian conceptions, all of which develop and enrich the independent and absolute concept (*b*) of space, finds broad correspondence in the baroque spatial conception, which in certain experimentations partakes of the same speculative research. The victory over the concept of absolute space or over that of the inertial system was made possible by the substitution of the concept of the field over the concept of the material object. This, according to Einstein, has permitted the representation of the whole of physical reality "as a field whose components depend on four space-time parameters. If the laws of this field are in general covariant, that is, are not dependent on a particular choice of coordinate system, then the introduction of an independent (absolute) space is no longer necessary. That which constitutes the spatial character of reality is then simply the four-dimensionality of the field." These ideas are to some extent reflected in the conception and intepretation of urban space, and not only of architectural space. The clinging of spatial uniqueness to events, the kinematic use of space, and even its interpretation as a frame of reference for the collective memory are also made possible by the new time-space conception. Further insights into the magical and symbolic meanings of urban space should produce a wealth of interpretations, leading a complete reevaluation of the significance of archaic emotional reminiscences (whether individual or collective), underlying spatial perceptions and to more systematic research upon their emergence in the course of experiments in spatial organization.

It can therefore be concluded that modern urban space is a multidimensional synthesis, with geometric components as the simple support of complex conceptual and emotional meanings. These meanings contain what has remained of historical and archaic experience and what is being added by experimentation and scientific speculation. The organized recomposition of contemporary urban-space concepts must necessarily take into account this complexity; validity will be measurable in the quality and quantity of meanings and experience within this recomposition and by the degree of their collective comprehension, fruition, and communication.

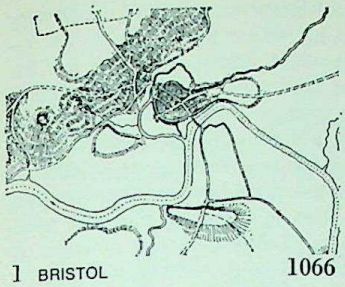
MODERN UTOPIAS. The formation of the modern science of town planning was preceded by a utopian phase that extended from the end of the 18th century to the beginning of the 20th century. This phase was characterized by attempts to invent a city of the future that would be capable of expressing a new society. Through these artificial constructions there reemerged the same Neoplatonic current of thought (although with different hypotheses) that produced the community utopias described by 16th- and 17th-century social reformers and the models of ideal cities designed and illustrated by Renaissance urbanist architects. Utopias appear both in descriptions by modern social reformers, who not only propose models for society but also give indications concerning the spatial characterization of the urban models, and in projects by contemporary urbanist architects, who contribute to the spatial characterization of models requested by the social reformers, or who independently propose theoretical urban models with or without the support of a hypothesis for reforming society.

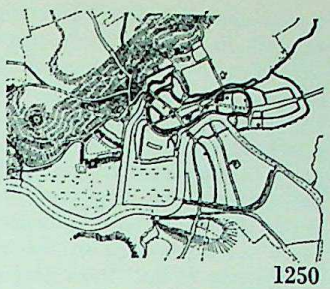
Like their Renaissance counterparts and, in fact, like all imaginary idealized societies and their urban models, modern utopias are presented as perfect schemes for the solution of all present-day urban and social evils. As Toynbee points out (1934), these descriptions and models presuppose a crystallization of society itself and are therefore static, born *ex hypothesi*. According to Mumford (1922), they can be divided into two groups. The first comprises utopias of escape, which aspire to immediate liberation from present frustrations and correspond to a primitive way of thinking, according to which one dreams of the gratification of desires without taking into account the actual restrictive conditions. Such societies therefore assume the characteristics of fugue or compensation. The second group comprises utopias of reconstruction. These attempt to provide the conditions for a future liberation. Despite the dangers and limitations of their static nature, such utopias offer stimulating elements for improved social arrangements, anticipation of possible future solutions to problems, and a course of action.

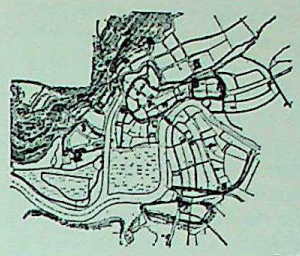
Just as some of the legal and technological aspects of More's utopia have been incorporated, if only marginally, into later societies, so some predictions of the utopias of reconstruction will become social and technological reality; but undoubtedly the coherence of the system will be lost. The failure of utopias is inevitable, from both a theoretical and a practical point of view. Complete substitution of one society for another is impossible, as is the crystallization of any given system. This does not diminish the fascination of utopias, especially when they avoid the characteristics of escape. A utopia may assume the value of a work of art or of a scientific, moral, and sociological work. Utopian creations recur in the history of civilization and appear primarily in periods of decline or transition, when profound changes in the social structure appear most necessary.

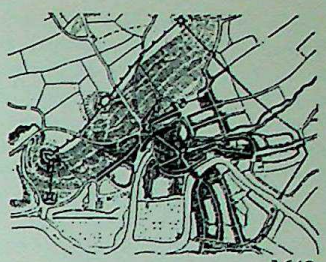
During the great flowering of utopian writers there appeared

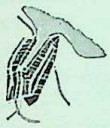
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

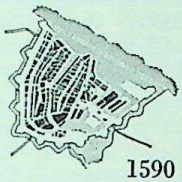


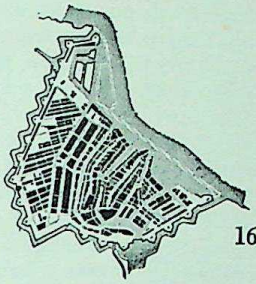


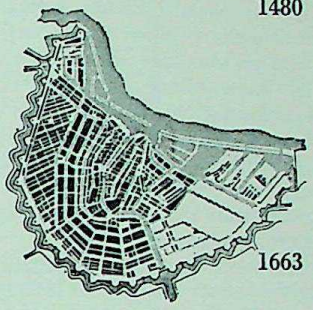


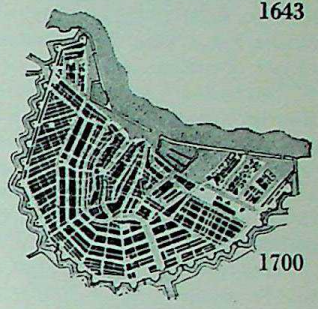




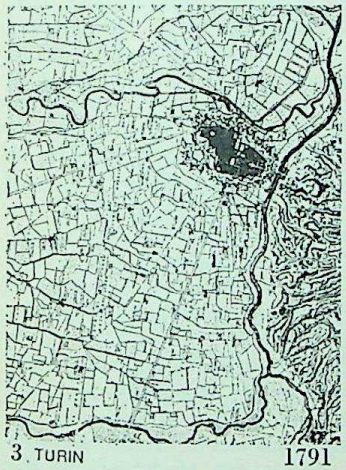


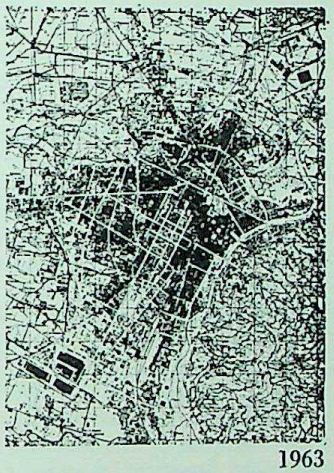


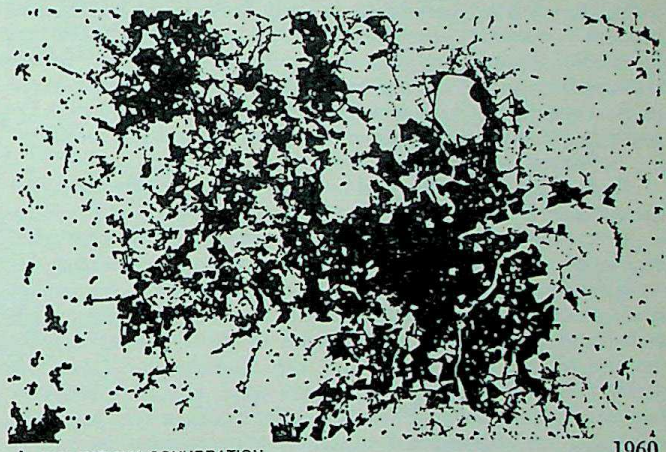


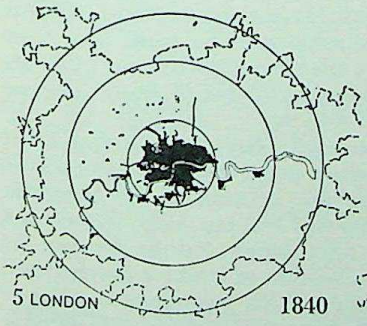


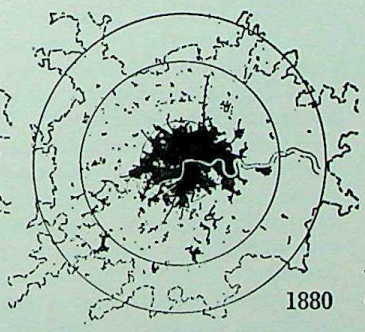
2 AMSTERDAM

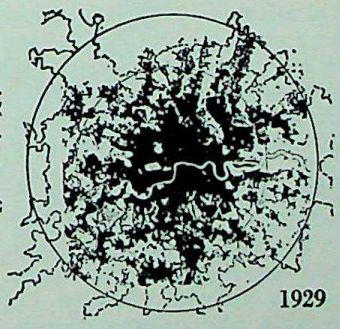


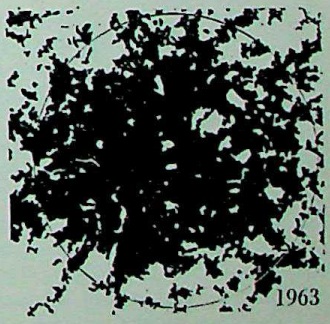


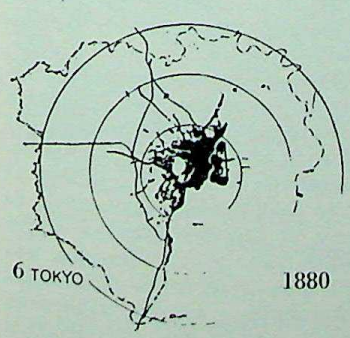


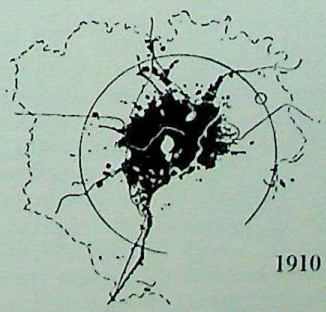


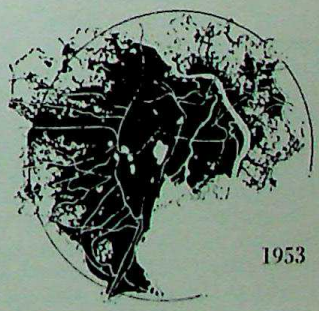












City development: (1) Bristol, from the early Middle Ages to the 18th cent.; (2) Amsterdam, planned development; (3) Turin and its territory in 1791 (before demolition of the walls) and 1963; (4) Birmingham, example of conurbation; (5) London, from the beginning of the industrial period to 1963; (6) Tokyo, from the beginning of the industrial period to 1953.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

works by Thomas Spence (1795), H. G. Wells (1905), and a group known as the associationists; the last achieved particular fame for their transposition of the social utopia into ideal urban models. Their proposals for new social structures were based on a community of goods for productive purposes and on rules of association, to which were attributed special powers of attraction and liberation. Among these men were the Saint-Simon socialists Owen and Fourier at the beginning of the 19th century; then Buckingham and Cabet in the middle of the century; and Bellamy and Howard at the end (PL. 145). François Marie Charles Fourier (1772–1827) did not propose to modify human nature but, rather, to understand it in order to allow the original nature of man to act freely. He based his sociology on the forces of "attraction" for the creation of "harmonious associations." Fourier's system (1808; 1829) rejected a society founded on the imperfect and immoral competition of individual interests, to which he opposed the cooperative principle of joint effort in order to attain a state of universal harmony. His "phalanstery" was the dwelling unit of a "phalanx" (a community of 1,620 members), and his description recalls the Louvre, a communal palace.

Robert Owen (1771–1858) experimented at the beginning of the century with certain improvements in the economic and social treatment of employees in the New Lanark spinning mills. In 1816 he introduced in New Lanark one of the first modern community institutions for the education of children. Thereafter he advocated the creation of small cooperative industrial communities of 1,200 persons, which were to be established in rural settings, as a remedy for pauperism, and as a system for ensuring advantageous employment for all workers and for allowing unlimited mechanical progress.

Owen's urban model does not differ substantially from the rural industrial colonies established by enlightened industrialists in the northern countries during the 17th and 18th centuries. Furnished with collective and public-service buildings, the colonies were surrounded by fields cultivated in common. Numerous late-19th-century model industrial colonies, conceived along more or less communal lines, were related to these trends. Among the best known were Saltaire (PL. 145), founded by Titus Salt in 1853 for the processing of alpaca wool, and the *familistère* founded by Jean Baptiste André Godin at Guise (PL. 145), the residential and commercial center of a cooperative ironworks with about 400 families. The installations of the *familistère* are still in existence and represent, in the opinion of Benevolo (1963), the happiest experiment of all those attempted in the 19th century by the theoreticians of socialism. Bournville was founded in 1879 by G. Cadbury for a chocolate factory, but the community was limited to workmen's dwellings. Port Sunlight was founded in 1886 by W. H. Lever for his soap industry, and Kronenberg was established in 1873 by the Krupp Works of Essen.

With James Buckingham (1786–1855) and Etienne Cabet (1788–1856) there arose a renewed interest in the general idea of model industrial communities. Buckingham (1849) hypothesized the complete city of Victoria with no more than 10,000 inhabitants, technically advanced and entirely inhabited by shareholders in the common property who subscribed to a series of internal laws. This city represented "the ideal *bourgeoisie*," according to Mumford, and contained the seeds of the garden-city principles later developed by Ebenezer Howard. Etienne Cabet (1840) described a large rational metropolis inserted within a social system based on obligatory work, progressive taxation, old-age pensions, and division of the industrial product. In an attempt to carry out his theories, Cabet in 1848 led an expedition of 1,500 Icarians to Texas, where unforeseen difficulties compelled him to establish small and separate rural communities; the experiment died out after a few decades. Edward Bellamy (1850–98), in *Looking Backward: 2000–1887* (1888), described an imaginary society in A.D. 2000 based on cooperation and productive activity organized by an industrial army.

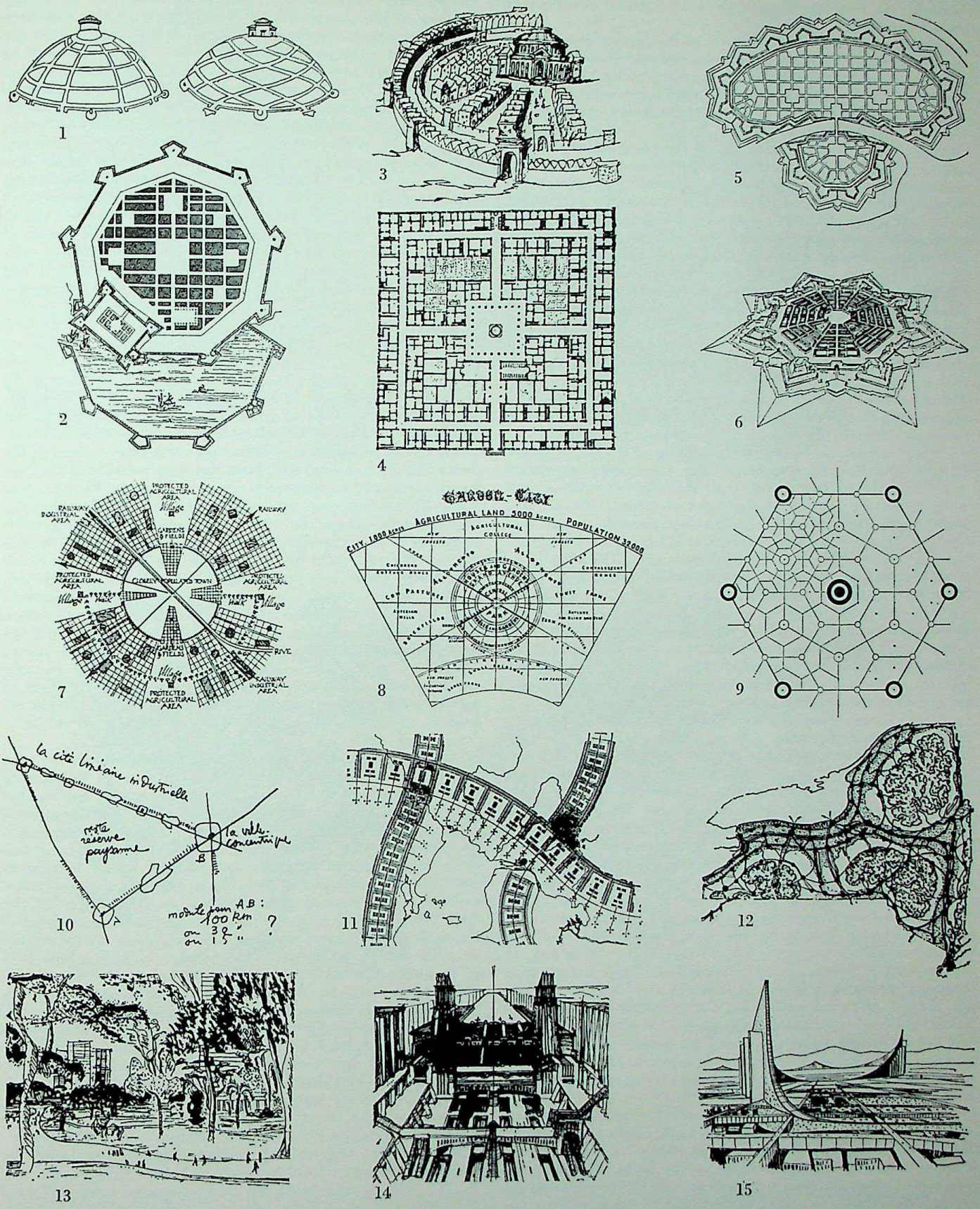
The century closed with the planned urban utopia illustrated by Ebenezer Howard (1850–1928) in *Tomorrow, a Peaceful Path to Real Reform* (1898; FIG. 221) and further developed by him in *Garden Cities of Tomorrow* (1902). Howard's work represents

a synthesis of various associationist utopias; its great originality consists in the emphasis placed on town planning as an instrument for the elimination of present urban evils and for the support of a better society. With Howard the process of translating the ideal of social utopia into a planned urban model was inverted; the urban model was conceived as a whole composed of principles, norms, and methods preceding and facilitating social reform. Beginning with the postulate that the massing of populations in large crowded cities is harmful, Howard compared the attractions of the city and those of the country in his diagram of the "three magnets." The urban magnet attracts through work possibilities, high salaries (despite higher cost of living), entertainment, exchange, and public facilities; the disadvantages are isolation in the crowd and an unhealthy milieu. The attractions of the country lie in the beauties of nature and the pure air and healthier environment; these are counterbalanced by monotony, lack of company, low salaries, and general cultural decline. Utilization of the attractions of both to maximum advantage can be obtained, according to Howard, by a third solution — the city in the country, which he calls the garden city. He specifies its dimensions: The population is limited to 30,000 inhabitants over an area of 1,000 acres for the central city and 5,000 acres of agricultural land with 2,000 inhabitants surrounding the nucleus. Howard also analyzes in detail the costs of establishing his city. Its essential characteristics consist less in the scheme and dimensions of the autonomous urban complex, complete with industries and services, and more in the combination of norms and procedures for establishment and administration. These procedures are conceived so as to remove initiative from every possibility of profit on building sites and to guarantee common control of the various phases of execution. Howard's scheme is therefore essentially operative. His plan is based upon the force of impact of the proposals as a whole, which, according to his disciple and follower Frederick Osborn (1946), comprise (1) the planned decentralization of industries and populations from overcrowded metropolises to garden cities; (2) limitation of the city within a preestablished boundary in order to guarantee balanced services; (3) amenity of site and layout; (4) exchanges between the city and the country; (5) control of the planning of the entire system, of the means of communication, of the subdivision into functional zones, of the limitation of density, of the types and uses of the buildings, and of the establishment and the distribution of green areas; (6) subdivision into districts or neighborhoods; (7) land ownership in the name of a nonprofit company that leases out the sites for building purposes for a limited time (99, 198, or 999 years); and (8) municipal and cooperative enterprises.

Howard's scheme was immediately successful because of its practicability down to the smallest detail and possibly because of its implicit renunciation of basic reforms in the economic and social structure. In 1899 the Garden City Association was founded in London; in 1901 Ralph Neville became its president. In 1903, with the acquisition of land for Letchworth, the original Garden City Company Ltd. was created and registered as a nonprofit joint-stock company. Financial difficulties slowed down the construction of Letchworth for decades, and it was only in 1961 that it reached approximately the anticipated population.

The principle of repetition was inherent in Howard's idea. Thus the garden-city experiment was repeated, this time with greater inventiveness, in 1920 at Welwyn, which was constructed on a project by Louis de Soissons. It was necessary, however, to wait until the resumption of construction after World War II for the idea of the garden city to find broader application in the plan for the metroplitan area of Greater London drawn up by Leslie Patrick Abercrombie (FIG. 225). The idea was then brought up to date through a revision of its dimensions and program. Having shed its shareholding aspects, it became, with the New Towns Act of 1947, one of the key elements in the English policy of planned decentralization on a national scale in the 1950s. Thus the planned urban utopia of Howard was the only one among the theoretical systems of the 19th century to become a reality and to have demonstrated sufficient

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



The ideal city; (1) Schemes for hill cities by Francesco di Giorgio (1439–1501); (2) seaside city with citadel, 1554, by P. Cataneo; (3) city based on a radial-concentric scheme by Fra Giocondo (1433–1515); (4) city based on a system of squares, 1598, by G. Vasari; (5) city based on gridiron plan with citadel on level ground near a stream, 1640, by W. Dilich; (6) fortified city, 1589, by D. Speckle; (7) scheme for a large city, 1924, by Rading; (8) scheme for the garden city, 1898, by E. Howard; (9) theoretical distribution of towns as service centers and their zones of influence, 1933, by W. Christaller; (10) *les trois établissements humains* of Le Corbusier, 1945; (11) diagram for proposed replanning of Detroit area, 1949, by L. Hilberseimer; (12) suggestion for regional planning in New York State, 1938, by L. Mumford; (13) project for Buenos Aires showing skyscrapers in a green space, 1929, by Le Corbusier; (14) study for the central station in Milan by A Sant'Elia; (15) project for city of the future by the Metabolist group of Japan.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

flexibility to meet the requirements of planned development on a large scale.

Contemporaneous with the birth of the first garden city was the conception of Tony Garnier's *une cité industrielle* (1901–04; pub. 1918). Whereas Howard expounded a method of building modern and autonomous cities of limited dimensions that were a modern interpretation of the medieval urban complex, Tony Garnier came face to face with the question of a large industrial city (PL. 146) totally rooted in the present and entirely turned toward the future, which would furthermore be built in a single operation in a given location. Howard had given a detailed account of costs and procedures in order to gain acceptance for his idea; but Garnier presented a complete city project, designed and planned as a whole and in the constituent parts — industries, public services, and dwellings — down to the details of construction with a systematic application of the new technique of reinforced concrete, to which he himself made a substantial contribution. The complete project has a clarity and fascination that makes it an unequaled *tour de force* of planning and invention. Garnier's technological anticipations, such as his prevision of the development of the automobile and aeronautic industries and the rational organization of industrial zones, were to be widely confirmed in fact, and his scheme was to become an ideal model for the creation of new industrial cities in the Soviet Union during the 1930s.

With Garnier the planned utopia changed course, as it was he more than Howard who opened the way to experimentation in projects. But for this, Garnier paid the price of total disavowal of contemporary reforms in the social structure. His planned utopia was divided into two distinct components: design and policy. The design became neutral, as it was in the infrastructural approach of the end of the 19th century. The abundance of projects resulting from this dissociation of design and policy, which found maximum expression in the work of Le Corbusier and extensive application in the work of the rationalists of the 1930s, was accompanied by a weakening of the ideals and policies of the designers, which contributed to a slowing down of the very process of planning. Thus the more modest but actually more efficacious ideas of Howard ultimately showed far grater continuity and proved more prolific.

After Garnier there are few modern utopians of stature in the field of town planning. Of major importance are Le Corbusier (q.v.; see also EUROPEAN MODERN MOVEMENTS) and Frank Lloyd Wright (q.v.); of somewhat lesser importance are Walter Gropius (q.v.) and Ludwig Hilberseimer. Among Le Corbusier's contributions to town planning are his proposals for the project *Une ville contemporaine de 3 millions d'habitants*, presented in 1922 at the Salon d'Automne; his Plan Voisin for Paris (PL. 146), presented in 1925 in the Pavillon de l'Esprit Nouveau at the Paris Exposition des Arts Décoratifs; and his commentary on the Ville Radieuse, which appeared in 10 installments between 1930 and 1931 in the review *Plans*. All three works, but principally the first, contain the whole of Le Corbusier's theory of the city of the future. This city, in contrast to the garden city, is conceived as a large human concentration primarily engaged in activities to which the inhabitants have a personal dedication. The inhabitants occupy a limited series of skyscrapers, each capable of housing 10,000 to 50,000 people and widely separated by green belts. The city is structured with an uncomplicated network of roads, which are levated so as to separate automobile traffic from pedestrian traffic on the ground-level paths.

Later applications of Le Corbusier's theory (e.g., Algiers, 1930; Antwerp, 1935; Rio de Janeiro, 1936; Buenos Aires, 1938; Saint-Dié, 1945) confirmed its validity, while his untiring publication constantly drew attention to his ideas. These ideas, which long predominated in various movements for the renewal of modern architecture, were finally tested in the *unité d'habitation* in Marseilles (I, PL. 388; IX, PL. 107) and, above all, in the project for Chandigarh in the Punjab (PL. 172; VII, FIG. 899; IX, PL. 108). In Chandigarh, however, his glass cruciform towers, or "Cartesian skyscrapers" (IX, PL. 106), for office use were replaced by a legislative and administrative center, and the 10-story residential towers (*maisons à redents*) of the *ville contemporaine* were reduced to neighborhoods not dissimilar to those of the garden city, to which the architect was once strongly opposed. Nevertheless, Le Corbusier's efforts in the field of town planning will always remain one of the liveliest and most fertile manifestations of creativity along utopian lines.

Broadacre City, Frank Loyd Wright's ideal city, has very different characteristics. It is based on the replacement of the centralized concentrated city by an agricultural-urban continuum structured by giant roads that "unite and separate — separate and unite the series of diversified units, the farm units, the factory units, the roadside markets, the garden schools, the dwelling places (each on its acre of individually adorned and cultivated ground), the places for pleasure and leisure. All of these units so arranged and so integrated that each citizen of the future will have all forms of production, distribution, self-improvement, enjoyment, within a radius of a hundred and fifty miles of his home. . . ." (1932). Broadacre City represents both the antithesis of the *ville contemporaine* and the spatial dissolution of the garden city. It continues to exert a fascination for its excellent manipulation of completely urbanized space (PL. 147).

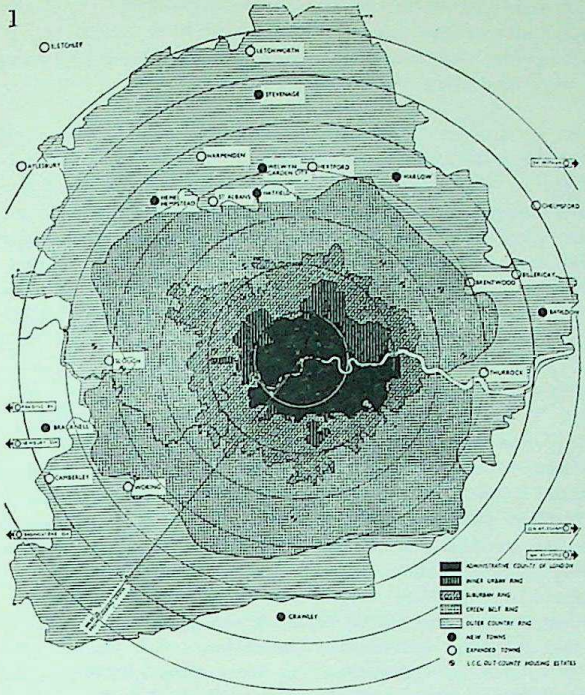
In this conceptual picture are included the contributions of Walter Gropius and Ludwig Hilberseimer. Gropius, in the dispute over the height of houses, intervened in favor of taller structures. In 1927 Hilberseimer (FIG. 221) theorized the multilevel circulation system in large cities and later embraced the thesis of the horizontal city, from which he developed residential elements and comprehensive schemes (1944). By the 1930s rationalistic architecture had reached full development, and the first experimentations in the construction of rationalist complexes were being carried out (PL. 147). In 1934 the elaboration of the new plan of Amsterdam was completed, which definitively made town planning a dynamic and functioning reality. A new methodology in the field — that of scientific planning — was taking the place of the utopias. The attraction of utopianism has reemerged from time to time, as in the hypothetical plan for the linear expansion of Tokyo by Kenzō Tange (PL. 147; see ORIENTAL MODERN MOVEMENTS) and the fantasies of the Metabolists (FIG. 221), which take the form of figural exercises; however, its historic function is clearly exhausted.

URBAN PLANNING. *The rationalist experiment and the plan of Amsterdam.* In the decade from 1925 to 1935 the science of town planning was fully developed conceptually. But instead of moving toward a synthesis of the research and experimentation from which it had derived, town planning continued to maintain its various original characterizations. Thus, by turns, it was linked with geography, history, and ecology; it was illuminated with utopian messages; it became a symbol of architectural renewal; or it entered into didactics as an example of the application of modern technology. During the first decades of the 20th century town planning still had these characteristics in some degree, although in a confused manner; in the field of practical experimentation it oscillated between opposite tendencies. The organic current came to North America (after Howard and the English experiments) through Lewis Mumford, Clarence Stein, and Henry Wright. In 1928 Stein and Wright executed the magnificent experiment of Radburn, on which were modeled the Greenbelt Towns (1935–42) within the framework of President Franklin D. Roosevelt's New Deal policy. In Central Europe, between 1925 and 1930, success accompanied the efforts within the rationalist current, which derived its principles from Tony Garnier and Le Corbusier. This new idea was realized in Rotterdam in 1925 with the Kiefhoek district by Jacobus Johannes Pieter Oud (q.v.; PL. 148; V, PL. 106); in Frankfurt am Main between 1926 and 1928 with the projects of Ernst May; in Stuttgart at the 1927 fair, which exhibited architectural experiments; in the residential housing built on plans by Walter Gropius (Törten, in Dessau, 1926–27; Dammerstock, in Karlsruhe, 1929, PL. 148; the Siemensstadt housing estate, in Berlin, 1930), and in the first Russian experiments along these lines between 1929 and 1932.

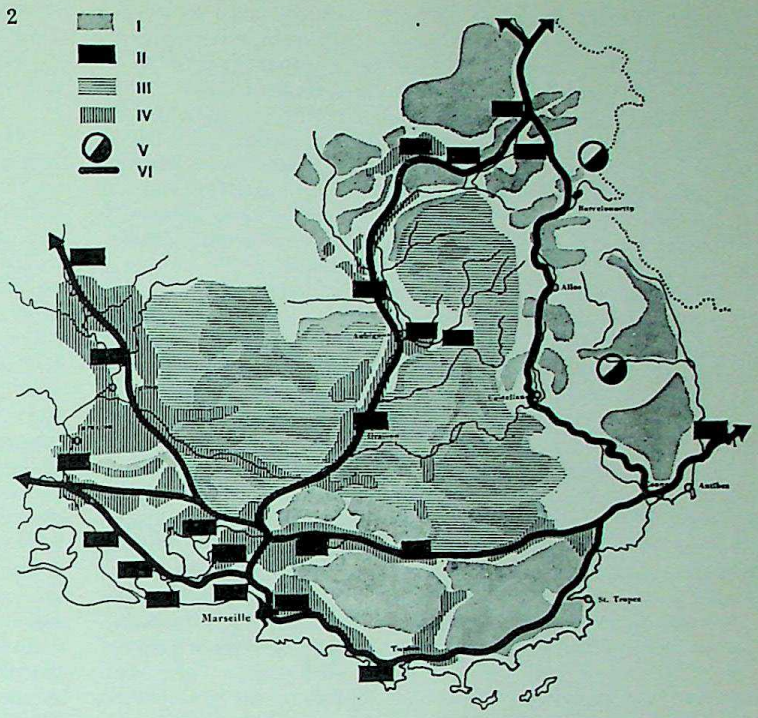
The aims and methods of the organicists and the rationalists

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

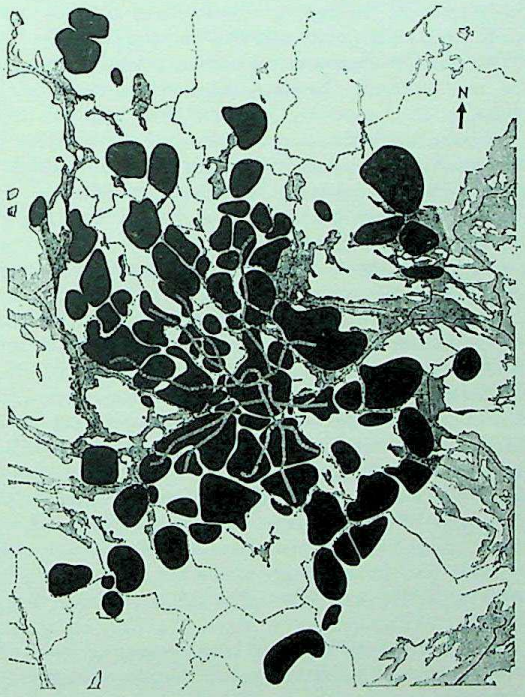
1



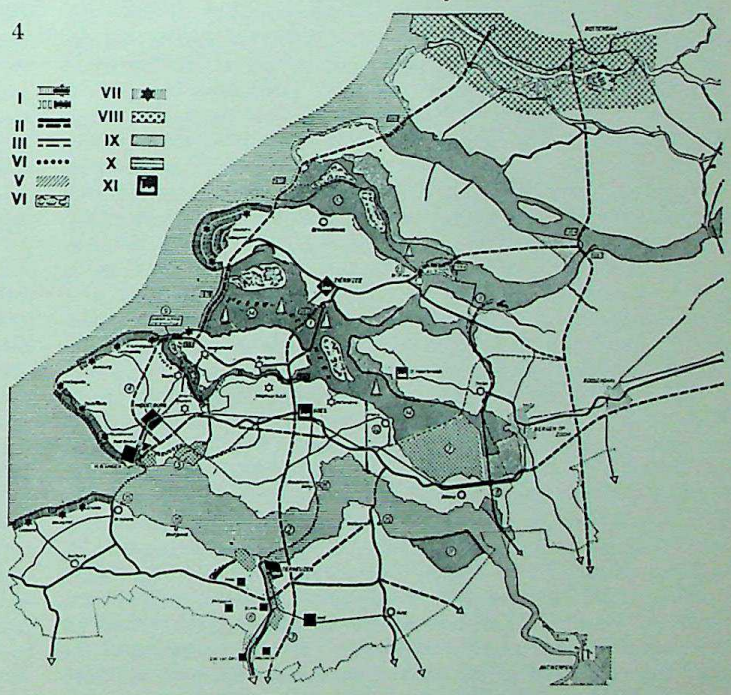
2

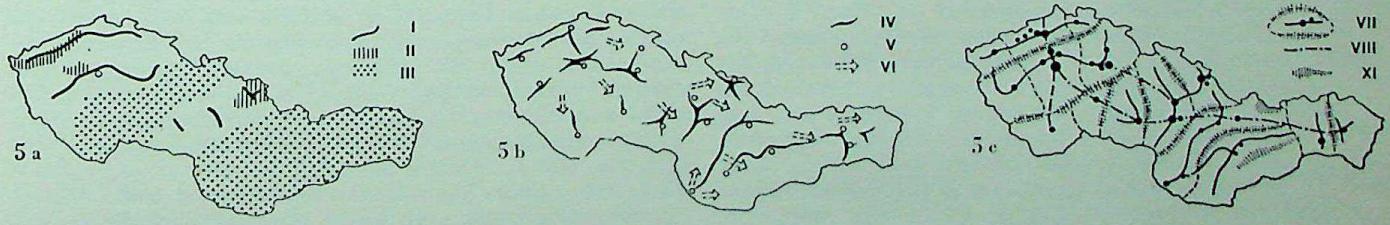


3



4





Regional plans: (1) London, central city, green belt, and location of new cities, 1946; (2) Durance River region, France, regional development plan. *Key*: (I) Forests; (II) industrial areas; (III) irrigated regions; (IV) areas with nonirrigated cultivation and pastures; (V) winter sports; (VI) major traffic arteries. (3) Stockholm, cluster structure of the city according to the projected plan for 1990; (4) The Netherlands, development plan for the Zeeland Delta, 1963. *Key*: (I) Existing and projected dikes; (II) existing and project ed main roads; (III) existing and projected local roads; (IV) ferry crossings; (V) land draining and filling, in process; (VI) park areas for recreation; (VII) coasts equipped for recreation; (VIII) industries in a port area; (IX) fresh water; (X) salt water; (XI) development points. Czechoslovakia: (5*a*) Structure in the period of unplanned capitalist industrialization, 1920. *Key*: (I) Urban and industrial concentration; (II) coal mines; (III) underdeveloped areas. (5*b*) Structure under planned industrial expansion, 1960. *Key*: (IV) New industrial and residential areas; (V) centers; (VI) expansion of productive forces. (5*c*) Projected expansion, 1980. *Key*: (VII) Complex economic spaces (regions) with active nuclei (industries) and passive hinterlands (agriculture); (VIII) principal directions of economic cooperation; (IX) distinct spatial divisions.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

were profoundly divergent. The former proposed to develop ideas involving a synthesis of various functional, environmental, and sociological elements. The latter sought primarily an objective efficiency in the planned urban establishment in terms of exposure to sunlight (insofar as it could be quantitatively measured) and therefore of orientation and distances between the buildings; or in terms of clear differentiation as to land use and therefore of specialized zoning for the fundamental functions of residence, work, traffic, and recreation. According to the rationalist trend the important objectives were "classer, typifier, fixer la cellule at ses elements" (Le Corbusier).

The transition from Le Corbusier's basic cell to the city should be made through successive aggregations. The repetition of the cell produces the cluster, and the repetition of identical clusters produces an equalitarian residential neighborhood. According to this logic the multiplication of the basic neighborhood should produce identical and "rational" living conditions for all the inhabitants of a city. Faith in the technological miracle was never questioned, and through the same logical process a technical solution to all problems was sought — from the state of the roads, for which expensive technical solutions were advanced owing to the increasing use of motor vehicles in those years, to the sun exposure of buildings. Norms were sought to guarantee equal conditions for all (Rey et al., 1928).

It was naïve to expect, however, that urban unity, by definition complex, could be created automatically through manipulation of the basic cell. The example of Frankfurt am Main between 1926 and 1930, where the expansion plan by districts was socially significant, proved the impossibility of achieving an integrated whole by this method. The criticism of the organicists regarding the fragmentariness of the rationalist trend was therefore well founded. For the rationalists to achieve comprehensive results it was necessary for them to change their methods. The opportunity presented itself with studies for the new plan of Amsterdam, begun in 1928 and terminated in 1935. In these studies all the individually conducted research and experiments of the rationalists converged. More important, there was formulated a method of work that, through clear specification of objectives and efficient organization of working groups (led by Lohuisen, Van Eesteren, and Scheffer, who were responsible for research, design, and coordination respectively), permitted the establishment of new general guidelines for all problems created by a large developing city.

Apart from its over-all unitary vision of the city, there were three major conceptual and methodological innovations of the Amsterdam plan that can be subsumed under the heading of "master planning." (1) The temporal projection of the plan to the year 2000 made it possible to overcome the shortsighted hypotheses of traditional extension plans (which lack an over-all chronological perspective), while avoiding the vagueness of undated plans. (2) The plan was comprehensive — that is, it considered all the component elements of the city from the point of view of dimensions and distribution in terms of ascertained present and future needs. (3) The execution of the plan was conceived as the sum of successive operations, which were to be coordinated in time and space, with arrangements made for their scheduled performance.

With this new conceptual formulation that incorporated the unitary view of the organicists, the fragmentary quality implicit in the rationalist experiments was overcome. Furthermore, the dictum of Howard (amply confirmed by Mumford) regarding the necessary rejection of the existing city was also eliminated. Because of these innovations and the dynamic workability of the plan, it suddenly stood apart from all previous practice in technique and civic design. That it developed in Amsterdam was no accident; for Amsterdam was a city that for more than three centuries had kept alive the planning tradition and had traditionally accepted precautionary preparation of land as a public operation — a procedure necessitated by the local geotechnical characteristics.

Unfortunately, the example of Amsterdam did not produce immediate effects in theoretical development or in the diffusion of the new doctrine. Repressive regimes and the outbreak of World War II ended town-planning studies for a decade throughout Europe, with the exception of England and the Scandinavian countries. After the war, with new requirements of reconstruction and a climate of hope, the new planning concepts resumed their development.

A new conception. With the revival of production and building in the 1950s there was a rapid and unexpected flourishing of plans. Town planning seemed suddenly free of the cultural limitations and obstacles of the rationalist schematisms, the utopian aspirations, and the engineering technique of the thirties; having assimilated the methodological lesson of Amsterdam, urban planners faced the test of reconstruction and reorganization on an urban and regional scale. In 1944 Patrick Abercrombie prepared the plan for Greater London (PL. 147; FIG. 225). A series of laws relating to town planning (Town and Country Planning Act, 1944; Distribution of Industry Act, 1945; New Towns Act, 1946; Town and Country Planning Act, 1947) institutionalized the control and intervention of town planning at the various administrative levels and in the various sectors, thus offering the prospect of a coordinated and continuous planning policy within the entire territory. In Sweden the general plan of Stockholm (FIG. 225) was placed under study in 1945, and in 1948 a new town-planning law was passed. In Holland, where the tradition of municipal urban planning had long been consolidated, planning at the national and regional level was established. In Poland the dramatic problems of reconstruction were immediately faced in accordance with a farseeing planning philosophy. In France the first proposals in regional planning were also encouraged, as was planned reconstruction and the building of new districts. At almost the same time, studies in town planning were begun or resumed in Denmark, Norway, Finland, Austria, Belgium, and Yugoslavia; discrepancies in time and manner of town planning in these countries were caused more by the degree of cultural and political maturity than by actual physical requirements, which were present and urgent everywhere. Studies in town planning were also officially begun in Italy, West Germany, Spain, and Portugal.

In the United States, in the 1950s, an impressive project of urban renewal was begun in Philadelphia with much publicity (PLS. 151, 177). Studies for the redevelopment of various cities and the economic development of certain watersheds were undertaken. In the U.S.S.R., as soon as the difficult living conditions of the early postwar period had been adjusted, plans were formulated for city reconstruction and extension and for the establishment of new cities and centers of production. Several new cities were designed in other parts of the world. Urban plans for metropolitan areas were proposed for the large, expanding cities of Tokyo (PL. 147), Lima, São Paulo, Buenos Aires, and Sydney. In the underdeveloped countries the first plans for stimulating economic development were from the start coupled with plans for infrastructural and urban development.

Once the universal diffusion of town-planning methods had occurred, it was not long, however, before great disappointment appeared everywhere concerning the effectiveness of the mechanism that had been set in motion with such speed and confidence. It was apparent that complete or even satisfactory control of urban growth in the large cities was not being achieved through urban planning. The operations anticipated by the plans were either not carried out or were often carried out in a disconnected manner. In the worst cases (in Italy, South America, and the Middle East) the plans proved to be almost ineffectual. Either their norms were violated with impunity by the public bodies even before private individuals could do so; or, if these norms were respected, they did not produce appreciable results in the development and shaping of areas or in the protection and revitalization of historic centers. Even where town-planning ideals, technical traditions, and political education were most advanced (as in the Scandinavian countries, France, and West Germany), the realization of the plans seldom went beyond some isolated instances of good or excellent accomplishments in residential districts, in new business or administrative centers, or in important infrastructural works,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

such as urban expressways. Too often there was a lack of space-and-time coordination and of an over-all view of the city in its development. The only exceptions were a few isolated and exemplary experiments in Holland and England.

The causes of this operative inefficiency in the urban planning of the 1950s cannot be attributed simply to technical errors in planning or to the inevitable defects of a still crude and imperfect mechanism. They must be sought in a conceptual deficiency inherent in design, which revealed itself in the vagueness of goals, time limits, and costs and in the inadequacy of the means to the ends — or more precisely, in the inability to discern or accept the most suitable means for the desired ends; in short, there was an absence of sufficient investigation and consequently a lack of choice. It is now apparent that urban planning in the 1950s rested upon uncertain theoretical foundations. These foundations were unsystematized and too weakly explored; with rare exceptions, a solid cultural and didactic tradition had not yet taken shape, and planning was hazardously based on conventional, empirical manipulation. Furthermore, at that time political choices as to the control of economic programs had not yet been made, except in Holland and in England under her first postwar Labor government.

Early errors in town planning have been remedied only where there has been an attempt to integrate urban planning into economic planning, as in Poland and Yugoslavia. Wherever there have occurred coordinated attempts to rationalize and reorganize the processes of economic development and urban planning, there have been conceptual and political advances in the latter field. In other instances the attempts at urban planning have too often revealed too much dilettantism, and the technical and juridical means have displayed their inefficacy in unsatisfactory results.

From technical town planning to continuous creative planning. The two main conceptions of town planning that have emerged from the experiences of the 1950s are technical town planning and continuous creative planning. There are substantial differences between them. Technical town planning includes the following four points: (1) The plan is conceived for an indefinite period without any specification as to the phases of execution; or, if these are hypothesized, without any formulation regarding the most efficient operative tools. (2) The plan functions essentially through a combination of restrictions and incentives. Restrictions occur where limitations, total or partial, are placed upon the use of the land; incentives occur where the transformation of use is encouraged. Restrictions and incentives are translated technically and juridically into zoning ordinances, which consist primarily in the physical relationship between the area and the constructed volume. (3) Control of economic activity occurs only in an indirect way and is limited to the application of the local zoning ordinances. (4) Execution of the plan is left to the free play of individual private or public initiative, the only condition being respect for the local zoning ordinances. Coordination in space and time of private and public initiative is not considered in this type of plan.

According to the logic of this system, urban planning manifests itself essentially in the formation, approval, and application of the plan; it is therefore mere technique. The plan is conceived statically and abstractly — that is, free from the process of existing or ongoing development and from temporal goals. The vision of the future is projected forward to a distant and unspecified date when all parts of the plan will be executed; at that time the proper dimension of the city will have been achieved, and there will be a dimensional and spatial balance among the individual parts. While the city awaits the achievement of its proper dimension and balance, a complex of private and public initiative develops within the categories of the zoning ordinances. (These ordinances may cover commercial, industrial, manufacturing, and residential land use; or bulk, density, sanitation, etc.). The choice of a specific site for a given structure may be of no importance to a planner operating within this conceptual framework so long as a zoning ordinance is not violated. The plan is conceived as a large reservoir with many compartments (zones), and they are gradually filled in one way or another until the whole is complete. This lack of interest in the phases of execution allows great freedom to individual initiative for residential or industrial sites or for public and private amenities. But it does not permit intermediate phases of spatial and dimensional balance. It is therefore inevitable that during execution a general lack of balance occurs among all the urban elements in their reciprocal relationship (e.g., among manufacturing sites, residential areas, and public services), as well as a specific lack of balance in each (e.g., residential areas without adequate services). The very logic of this approach leads to a conception of the plan as a sum of possible initiatives rather than a complex of operations to be carried out. The undefined projection into the future and the indefinite scope of possible future initiative thus widen the very dimensions of the plan; they inevitably lead to an overpermissiveness concerning the dynamics of development and very often to a simultaneous underspecification of the amenities, especially when the private initiative of builders becomes predominant.

This type of plan, which readily accepts the free development of individual initiative, requires only a technical system of regulations and not a spatial-temporal coordination of private builders. Local zoning ordinances provide legal physical limits, but spatial distribution still follows the logic of marginal development, resulting in additional expense in infrastructural costs and negative results in the formation of the urban space. From the standpoint of execution this type of plan can also be defined as a plan for regulated marginal expansion. Conflicts between public and private initiative are inevitable. Public initiative, not being coordinated, tends to be subdivided into sectors of intervention subject to various state and local authorities; this opens the way to internal contradictions and collisions with private initiative. In such a tangle of conflicts the more powerful economic interests in the particular site eventually gain predominance. The plan itself cannot avoid being influenced by this in its formation, in its wait for approval, and during its execution. If these economic interests are ignored, the plan is overwhelmed by them; if they are satisfied, the plan is dominated by them. In the most fortunate cases the plan reconciles competing interests.

Many plans of this sort have been produced in various countries: in England before 1943, in South America in the immediate postwar period, in Italy in the 1950s. The critical examination of results led in some countries (first England, then Poland) to a profound conceptual and operative transformation in planning that considered the already tested Dutch experiment. The extreme limit of aberration reached by technical town planning is illustrated in the zoning plan for Genoa, approved in 1959. Its residential areas were zoned to guarantee, through extension and constructed volume, a density of 7.5 million inhabitants, compared with the then-current 850,000, with no corresponding specifications for areas of productive activity or amenities and with no foundation in hypotheses pertaining to economic-demographic development.

Even situations less paradoxical than that of Genoa have in some cases led to significant planning revisions. In Hamburg, for example, the original plan of 1950 was replaced in 1960 by a new one (PL. 152) directed toward (1) elimination of residences from the central city, which was intended exclusively for administrative activities; (2) elimination of the high density of the internal residential areas and the too-low density of the suburbs, with an analytical revision of zoning ordinances for each residential area; and (3) compulsory submission of detailed plans of construction, land use, land coverage, amenities, density estimates, and the like, for every portion of the territory. The pyramidal city of the 1950 plan, with density decreasing from the center to the suburbs, was replaced in the 1960 plan by a homogeneous urban development distributed fanwise around the administrative center of the city and by an operative planning process in space and time. With these innovations the 1960 plan for Hamburg was fundamentally converted to the principles of the Amsterdam experiment.

The second main conception of town planning in the present day is continuous creative planning, which includes the following conceptual and operative elements: (1) The choices and general

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

planning decisions are consistent with the existing process of development, its intrinsic susceptibilities to economic and demographic enlargement, and the possibilities of transforming its components for more productive cooperation. (2) Decisions both general and specific concerning the use of space are cognizant of the changing situation with the passage of time and are made consistent with present economic-demographic development and hypothetical future development. (3) The plans are conceived in operative form for the attainment of definite aims and are articulated in long-term, medium-term, and short-term plans. (4) The efficacy of the plans is ensured primarily by acts of direct administrative intervention. Public intervention has priority over private intervention, although the latter is not excluded and is guided by public intervention. (5) Choices in spatial distribution are submitted to *ex ante* analyses and testing. (6) Urban planning in each of its phases is consistent with economic planning and programs.

According to the logic of this system, the plan (rather, the succession of plans) is purely instrumental with regard to the process of analysis, choice, and test. The city, territory, or region subject to planning is always the object of an over-all vision, both in future projections and in each stage of execution in medium- or short-term periods. The search for spatial equilibrium is constant, and the individual stages of execution present themselves as states of equilibrium in the process of planned development. The concept of the final perfect state implicit in the abstract technical plan is thus replaced by a succession of developmental stages.

The plan of any one stage no longer has the form of a sum and synthesis of transformations and possible initiatives but is composed of the entirety of operations to be carried out. Medium- and short-term plans assume an eminently operative character. In short-term periods (assuming efficient planning has overcome the developmental phases) the plan of execution combines all the operations — and only those — decided upon for execution. The definition of long-, medium-, and short-term periods in this projection acquires decisive procedural value. Adherence to reality and unforeseen events and the resolution of possible discrepancies between plan and execution are guaranteed by periodic revision of long-term plans and by the flexibility of short- and medium-term plans; the planning thus becomes "continuous."

The general technical lines of the plans in this kind of mechanism can much more easily follow a scientific methodology in the search for optimum solutions, since continuous creative planning is free from the pressures of conflicting interests present in abstract technical plans. Because execution occurs through a series of plans, it can be technically foreseen in small detail; it is therefore possible to guarantee the creation of a human and efficient urban space and to calculate the cost of development before and after execution. Thus the process of execution becomes rationally controllable, and the experiments carried out can be illuminating for future decisions from the standpoint of efficiency and cost. So contrived, urban planning can aspire to effectuate a profound structural transformation of existing cities and regions. It can aid in solving hitherto unsolved problems concerning optimum use of public investments and spatial distribution of economic activities. Urban planning opens the way to a new spatial modeling which can be critically evaluated and economically verified and which remains alien to naïve utopianism and to the degeneration of spatial disintegration and congestion, all of which result from passive acceptance of conflicting urban forces.

According to this new logic, planning becomes essentially a creative and driving force for economic, social, and urban development. Urban planning has been oriented in this direction, in a fairly integral and coherent manner, in Holland, partially in England and Scandinavia, and more fully in Poland and other socialist countries. In Holland, planning at the local, regional, and national levels is now closely connected with economic planning, and both the general and detailed plans also function satisfactorily in planning for rural areas. In two decades rural areas and agricultural enterprises have been almost entirely redeveloped.

In England, town and country planning has made enormous progress in the control of land use and its transformation, in the control of sites for all industrial establishments, and in the organization of planning authorities. Fifteen new cities were established between 1946 and 1956, and development plans for entire regions are continually under study. In Scandinavia, now that the first stage of fragmentary and espisodic planning has been surpassed, foundations are being laid for coherent comprehensive planning. The most mature and advanced forms of continuous creative planning, however, appear in Poland in the skillful linking of long-, medium-, and short-term plans and in the methodological formulation of the plans directed toward the econometric evaluation of optimum solutions through the comparison of alternative solutions. From these experiments it seems possible to extract outlines for a town-planning discipline that permits solution of the increasingly complex spatial problems of the present.

The friction between conventional technical expedients and continuous urban planning corresponds exactly to the conflict between marginal and structural reforms, which in economics, politics, and sociology differentiate two dissimilar approaches and conceptions of present and future. "The classical tendency of economics," claims Henri Janne (*Les problèmes de la planification*, 1962), "consists in the projection of the present into the future; for what is known in the present is considered an indication of what is to come. This manner of thinking therefore tends to prolong the present into the future. In planning, however, the present is already shaped in terms of a representation of the future. It is a system of creative foresight. The predicted future, which is bound to materialize, settles into the present with its powerful potential of fulfillment, and thus changes the significance of the present as well."

Identical considerations are valid for urban planning. Its latest methodological and conceptual developments show that it has ceased to be neutral in the face of economic and political choices. It participates actively in the choices involved in projections of continuous planning, or it renounces those choices and succumbs to the influence of prevailing forces, as occurred in the 1950s with the passive conception of technical town planning.

Juridical and economic aspects. As a preliminary to this discussion it is necessary to frame in historical and sociological terms the clear distinction between public and private property, which was a fundamental legal pillar of the last century and which today supports the juridical structure in many countries. The 1789 Declaration of Rights of Man, the conceptions of classical economics, and the policy of free-economy reforms all accompanied the beginnings of the industrial revolution and the development of capitalism. According to this distinction between public and private property, private individuals can exercise the right to use land under the various forms of ownership or possession for a given period. They also have the right of transformation of the use, including land improvement; this right, however, appears almost everywhere to be mitigated (more through local custom than through law) by norms or regulations that limit its exercise. To the public authorities, on the other hand, is delegated the duty even more than the right to provide what pertains to public use in the urban complex: roads, squares, parks, sewer systems, and public buildings. This rigid distinction between what is public and private (upon which were eventually based the geometric designs of expansion and street layout, with a precise subdivision of the land according to the two groups possessing rights) creates the necessity for transfer operations. While transfer from the public domain to the private domain continues to occur according to custom (by means of conveyance of property or by concession of use as in England and Holland), transfer from the private to the public domain is instituted, protected, and regulated by coercive acquisition in the form of expropriation, as a subrogation of friendly acquisition whenever this latter cannot be carried out.

The first law on "expropriation pour cause d'utilité publique" was the French law of Mar. 8, 1810. Decades later, similar laws were adapted from it in various countries (e.g., Holland,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1851). The Italian law of 1865 on expropriation for public use takes on particular importance because expropriation and the formation of extension plans were jointly regulated therein, considerably in advance of other countries (Sweden, 1874; France, 1884). Under the Italian law of 1865 expropriation for public use was allowed only in connection with plans developed in three successive phases: a general development plan, a declaration of the project's public utility, and a detailed executory plan. Indemnity for the expropriation was fixed at a price the property would have obtained through negotiation of sale in a free-market purchase, but the "special and immediate advantage" that would accrue to the unexpropriated part of the property as a result of the execution of the public work was estimated and subtracted from the indemnity. An obligation could be imposed on the owners of adjoining property to contribute to the execution of public-utility works by paying a contribution "equal to half the greatest value which would result from the execution of the works of public utility." Lastly, this Italian law initiated the submission of building and development plans for built-up areas, which generalized the institution of the general plan showing the maximum requirements of individual public works operations. This opened the way to a comprehensive vision of the various operations in an urban complex. With these juridical principles the law of 1865 could well have represented an auspicious beginning of good legislation to regulate the juridical and economic relationships of urban planning; however, these relationships were not developed in subsequent Italian laws, and many of the laws have been interpreted in a restrictive sense.

The principal juridical problems of contemporary urban planning in other countries can be dealt with in two ways: either by analyzing the planning legislation within the framework of the individual juridical-administrative structures of the various countries and then examining the legislation comparatively, or by grouping these problems into major classifications. The second procedure will be followed here for the sake of brevity, although the first would be the correct method for a specific and complete scientific treatment, which is still unfortunately lacking. One major group of juridical-administrative problems is related to the institution of the various types of plans in terms of administrative and operational levels. The problems are therefore linked to the definition of content and the juridical validity of the ordinances pertaining to every type of plan, to the powers delegated to the various planning authorities, and to procedures for the preparation and approval of the plans. This matter has not only a formal character — the consistency of the plans with the administrative structures in the various countries and with the degree of centralization of these structures; it has also a substantial character — consistency with the practical and theoretical content of the urban planning desired.

A constant rule, almost without exception, is the delegation to community authorities of planning power at a local level. This delegation of authority is far more varied at the intercommunal and supercommunal territorial level. At the intercommunal level, associational formulas take the lead in the more democratically mature countries, to the point of adopting forms of joint representation on committees; this occurred in the Regional Planning Committee of Oslo, with its 21 planning districts in the metropolitan area. At the supercommunal level there are various delegations of power, ranging from elective jurisdictional bodies (e.g., provinces, counties, *Länder*) to mixed technicoadministrative bodies, as in France and in Italy during the unsuccessful experiments with "territorial plans of coordination" in the 1950s. On the national level, where there is national development planning, as in Holland, supercommunal planning is placed under the authority of a state service directly responsible to the government. In countries with a planned or programmed economy the integration of urban planning with the various forms of economic programming or planning exists on the regional and national levels in Holland, France, Poland, and Yugoslavia. But on the local level, urban planning, even in the most plan-minded countries, has not yet attained a sufficient degree of interpenetretation with economic choices, except in Poland.

Almost everywhere the types of plans correspond to the levels of planning; and almost everywhere, in addition to the over-all plan, the projected program of execution is known under varying denominations (project development, *plan masse*, *Bebauungsplan*, *piani particolareggiati esecutivi*, etc.). In countries where urban planning has assumed a more distinctly operative character, plans on a local level are being articulated into three broad categories, as in Poland: directional plans (long term), prospective plans (15 years), and developmental plans, or plans of execution (5 years). To ensure adaptation of the plans to the actual phases of execution and to the more distant objectives, the institution of periodic revision is maintained in nearly every country. Plans "for an indefinite period" in the Italian law of 1942 appear increasingly anachronistic; such plans are destined to pass from an initial rigor of conception to a most permissive elasticity in interpretation, which empties them of any programmatic content.

The forms of planning in various countries differ mainly in the instruments of execution, in terms of objectives and modalities of town-planning policy adopted and pursued. Execution conceived as the mere application of the ordinances of the general plan (as occurred in Italian town planning in the decade 1955–65) or based essentially on zoning norms (as in the United States) is almost universally giving way to the more complex and programmed procedure of project development for residential complexes and work areas to be executed through public auspices (Holland, England, West Germany), or to plans of programmed communities (Scandinavia; France, *zones à urbaniser en priorité*, or ZUP; the U.S.S.R., *rajony*; Spain, *poligonos*; Italy, INA-Casa districts, CEP, etc.), or to plans of subdivision to be realized through private initiative, but technically or juridically regulated (France, the United States, the Scandinavian countries).

By now almost completely subdued in many European countries is the plague of lot divisions, which were abusive and too easily granted, which were executed without suitable urban amenties, and which, for example, in one decade ruined the suburbs of many Italian cities and invaded coastal areas, countryside, and archaeological sites. Scattered and diffuse urbanization or construction in the form of uninterrupted ribbons along the roads is prohibited by specific legislative acts, as is the case in England (Restriction of Ribbon Development Act, 1935) and Holland. A more mature awareness of the civic and social function of urbanization now demands a more qualified final product not only from public institutions and cooperative societies but also from private lot division. Even the North American Levittowns, enormous spreads of tiny lots in a city extension, boast a higher and more consistent standard compared with recent Italian subdivisions; they also lend themselves to easier and more frequent operations of renewal and transformation because of the techniques employed and the density and low height of the buildings.

In the actualization of the plans, particular importance as a qualifying element is increasingly assumed by the quantity and quality of the works of primary urbanization (neighborhood streets and pedestrian ways, parking lots, gardens, neighborhood public facilities, etc.) and general urbanization (main streets, parks, schools, business centers, etc.). The areas intended for these establishments and services should be specified in the plan of execution (and only a project-development plan, carefully studied and rigorously effected, can guarantee this). Furthermore, each idea should be carried out at the right moment and with the suitable technical requirements. It is also at this point that the qualifying element of townscape enters as a process of giving character to the urban space in formation. In order that this may occur, strict respect for the provisions of the executory plan is necessary, whether by public institutions or private individuals. Special care and attention must also be devoted to the planning and directing of urban works; thus it is essential that the plan of execution have operative and juridical validity. With this aim in mind several countries have adopted different juridical tools. These include (1) replotting (widely practiced in France as *remembrement*, in West Germany as *Umlegung*, and in Holland); (2) regulatory systems for sub-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

division (e.g., in France, where special legislation concerning *les lotissements défectueux* has been introduced since 1928, and where the more severe norms have been in effect since 1958; (3) the requirement that public works accompanying urbanization be executed by the private subdividers or by *sociétés d'économie mixte* (mixed nonprofit housing-rental associations) as is customary in France; (4) subordination of the granting of the building permit to the execution of the works of urbanization (Denmark and Sweden); and (5) more drastic systems of preventive acquisition of the land by the municipality, which have proven efficacious. Preventive acquisition or condemnation and annexation of urban areas is widely practiced in Holland, in Sweden, in Denmark, and in the construction of the English New Towns. In Holland the communes own about 62,000 acres of urban land (1965), of which about 12,000 acres are in the city of Amsterdam alone; Stockholm owns about 19,000 of its 45,207 acres of communal territory and about 25,000 outside the boundaries of the commune. Land acquisition in these countries occurs long before the execution of plans, so that the sale or expropriation price reflects the true market value of the agricultural land rather than the inflated value based on speculation and anticipated sale to the commune.

In these circumstances speculative operations are excluded and do not increase the cost of the finished product (land, facilities, and building). The building sites ceded outright or, as is very often the case, as pluridecennial concessions to institutions, cooperative societies, and private individuals are not only freed from the costs of intermediate transitions but are also guaranteed to be fully equipped for urban life. But wherever the preventive acquisition of land is not practiced, there inevitably occurs, mainly on the fringes of the large cities, an artificial price rise for sites of potential urban use. In some cases prices reach high multiples of the original agricultural value; a hundredfold is normal for suburban areas, but much higher multiples may be attained. Even in suburban or semisuburban areas, land cost may equal the value of the new development. In such situations the amenities of urban living are often completely neglected and the burden of providing them is passed along to the local community. The user (buyer or tenant) therefore not only pays the "plus value" but also, as a member of the local community, contributes to the costs of urbanization. In such cases a partial recovery of the plus value is attempted through fiscal systems that are sometimes extremely severe, as in the United States and in West Germany. Such taxation has also been introduced in Italy, but on the basis of a modest aliquot of the plus value that does not guarantee indemnification of the cost of urbanization to which the yield must in part be attributed.

From the foregoing it is evident that in all countries the problems of plan execution are not merely technical but also juridical, economic, and fiscal, with the latter factors in constant evolution. It is a widespread conviction that the problems of an urban planning capable of functioning actively and comprehensively in all fields are inseparable from the problems — and solutions to the problems — of private property. This principle was confirmed in a recommendation of the 37th Congress of the International Federation for Housing and Planning (1964) in Jerusalem: "In all countries the implementation of planning for a redistribution of population depends on attaining the optimal land-use by legal and fiscal measures of expropriation and redistribution of land" (Theme 11, "National Planning for the Redistribution of Population and for the Building of New Towns," Proposed Recommendation 2).

PROBLEMS AND PROSPECTS. *Basic data for a town-planning accountancy.* To formulate a general outline of urban planning throughout the world since 1945 is nearly impossible. Sources of information and basic documentation are lacking in the field, and local conditions are usually in a state of flux and are rarely subjected to periodic scientifically conducted financial surveys. The fundamental data of interest solely to planning are rare, discontinuous, and not subject to comparison. Economic and political options frequently escape critical analysis and are speciously presented in a controversial form based on opinion. Even the periodic statistical bulletins of the United Nations, which abound in information in all fields, including building as industrial productive activity, are totally lacking in town-planning data for the various countries. Such data might include (1) information concerning existing situations, with evaluations of the dynamics of urban life according to (*a*) size of cities or complexes, (*b*) degree of economic development, and (*c*) indices on availability of dwellings, facilities and services for industrial areas, and traffic; (2) information relative to urban plans that have been activated (created, revised, executed, in process) and to programs of financial investment within the various sectors and on the various administrative levels; (3) information concerning the results obtained, specifically (*a*) the dimensions of the residential and industrial areas that have actually been urbanized, (*b*) the urban facilities with which these areas have been furnished, (*c*) the costs of individual facilities and of the over-all development of areas, which, moreover, are subdivided into areas of public and private urbanization activity, and (*d*) a financial survey of the infrastructural works and services carried out in these areas.

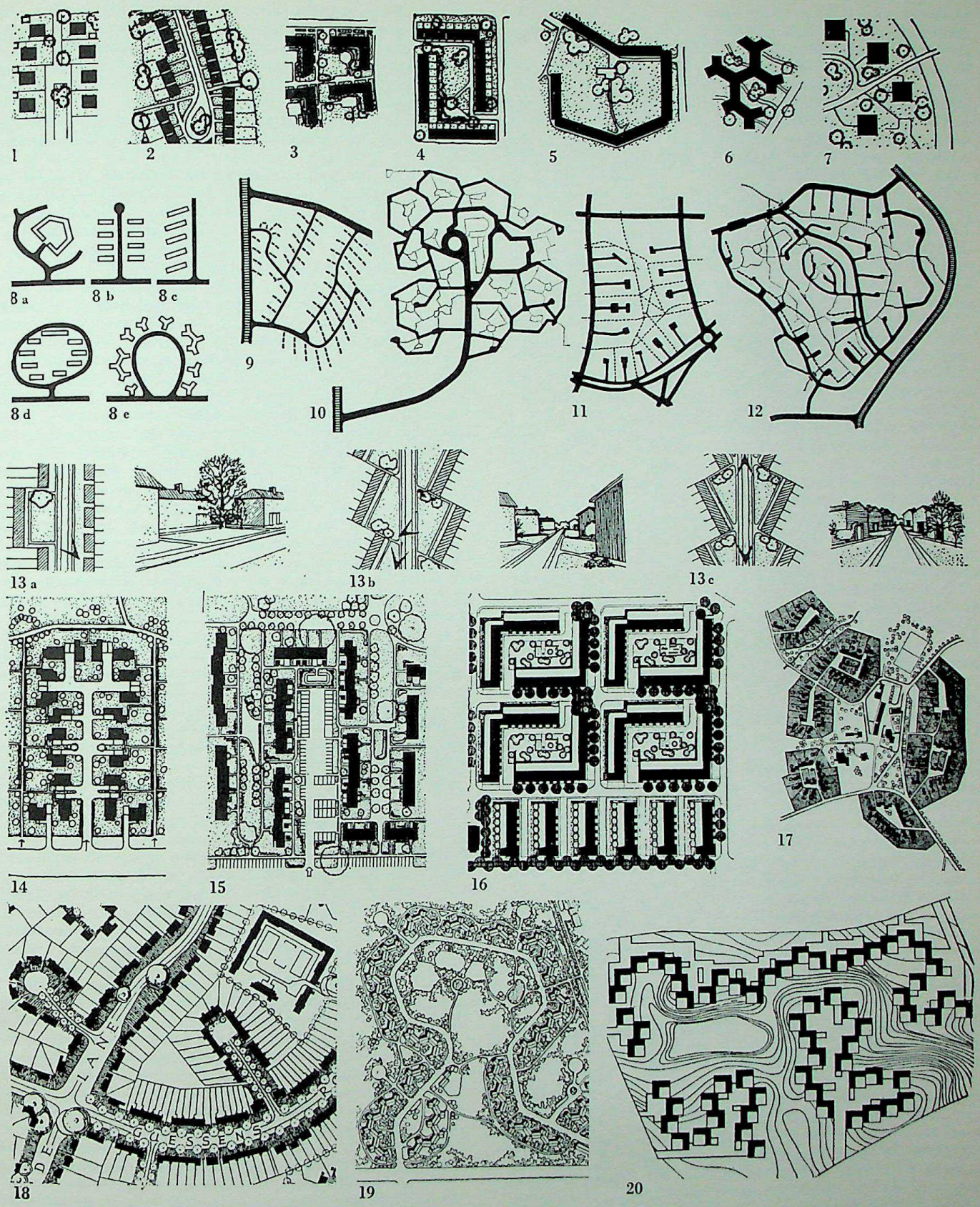
It is evident that the collection and comparison of such data according to a homogeneous basic methodology would permit not only an international evaluation of the characteristics and dynamics of various situations but also an estimation of the varying dynamics of intervention and an evaluation of their quantitative and qualitative effects. The basic data would not be difficult to obtain, given the will to do so; but its collection should be pursued in a methodical and organized fashion.

It would be quite easy to construct models based upon these data that would allow an estimation of urban investment per inhabitant in various cities and countries. More significant indexes of urban conditions and well-being could thus be obtained. On an international level, only the United Nations can promote the finding of such data. The information would also encourage various countries to establish a national town-planning account as a category of national accounting, which has become a recognized preliminary for the formulation of economic programs and has already been promoted at an international level. National town-planning accounting would in turn prompt the same kind of accounting on the local level, where it would be conceived as a balance sheet of insufficiencies and needs, on the one hand, and interventions for the satisfaction of these needs, on the other. In terms of socioeconomic accounting the balance becomes clear in a comparison of the "costs" of public and private investment with the direct and indirect "profits," whether projected or realized. In this way the comparison between effective supply and real demand for town-planning resources and services at a given moment or period of time could be evaluated for every city, complex, metropolitan area, territory, region, or country. Generalized balance sheets for the various local units would thus permit the aggregation of comprehensive balances for larger territorial units, up to national units, while through disaggregation of the large national figures it would be possible to specify the limits within which individual local budgets might vary, thus obtaining verification of the internal coherence of the system and the adaptation to circumstances and to available funds.

A hypothesis of this sort would permit the incorporation of town planning into the framework of a democratically controlled economic planning, thus definitively removing local and central town planning from the facile temptations of technical improvisation, discretionary powers, and sectional outlook that, together with the maneuvers of power and pressure groups, characterize the irrational and precarious politics of immature democracies. Local, regional, and national town-planning balances have not yet come into use because the important data are lacking or are not brought up to date or methodically elaborated. Moreover, the necessary operations for elaborating such data are highly complex, though they are now facilitated by the use of electronic computers.

At the present time the formation of planning budgets, although still in a phase of preliminary scientific exploration or individual and limited research, nevertheless seems to be the only possible instrument capable of satisfying the legitimate

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Residential areas. Elementary clusters of buildings; (1) Bremen, Grolland, zone divided into lots with individual houses; (2) Stevenage, row houses; (3) Malmö, Sweden, Augustenborg, L blocks; (4) Amsterdam, Watergraafsmer, project, double L blocks, 1921–50; (5) Turin, Falchera, winding block, 1951; (6) Stockholm, Aktersegeln, star-shaped block; (7) Stockholm, Danviksklippan, tower blocks, 1948. Elementary traffic schemes: (8*a*) branching; (8*b*) cul de sac; (8*c*) flow; (8*d*) external ring; (8*e*) internal ring. Traffic schemes within residential areas: (9) Herringbone distribution, Copenhagen, Sondergardpark, 1949; (10) Turin, Falchera, radial distribution, 1951; (11) Radburn, N. J., penetration based on cul de sac, 1938; (12) Stockholm, Vällingby, combination of peripheral ring, cul de sac, and penetration, 1948; (13*a*, *b*, and *c*) closes or recesses in streets; (14) Radburn, N. J., designed by C. Stein and H. Wright, 1928; (15) Baldwin Hills Village, Los Angeles, designed by C. Stein and R. Johnson and Associates, 1941; (16) Amsterdam, Slotervaart, 1954; (17) Matera, Borgo Venusio, designed by L. Piccinato, 1953; (18) Welwyn Garden City, designed by L. de Soissons, 1920–26; (19) Örebro, Sweden, Rosta, designed by S. Backström and L. Reinius, 1947–52; (20) Helsingør, housing estate, designed by J. Utzon, 1956.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

aspiration to a rational urban planning in which decisions are taken at the proper time with full knowledge of the goals and in which the execution is always controllable and verifiable through administrative accounting. This objective subsumes one of the most urgent and perhaps most important methodological problems in the field of town planning; its solution will decisively influence town-planning developments in the coming decades. Specific preparatory studies in this direction are not numerous. Among them should be included research on the costs of urban development by P. A. Stone (*Housing, Town Development, Land and Costs*, 1963) and on the economic evaluation of urban land by E. Rams (*Principles of City Land Values*, Worthington, Ohio, 1964), as well as the theory of limitations by Malisz ("Analisi delle possibilità di sviluppo urbano," *Urbanistica*, XLII, 1964) and the experimental applications of optimum land use in the preparation of the general plan for Warsaw (cf. K. Olszewsky, in *Urbanistica*, XLI, 1964).

The problem of town-planning accounting finds ample support in the developments of the theories of spatial economy. Its precedents are derived from hypotheses by Van Thünen (*Die Isolierte Stadt*, 1826) on the influence of transportation costs in the agricultural economy, from research on the optimum location for industry by A. Weber (1929), and from studies on the hierarchical organization of territory by Christaller (1933). One line of investigation extends to general theories on territorial balance in the sphere of free trade by Lösch (1944) and E. von Böventer (*Theorie der räumlichen Gleichgewichts*, 1962); along another line, investigation extends to analysis of regional and interregional input-output and the applications of interregional linear planning, both of which have been explored and investigated by W. Isard (*Methods of Regional Analysis: An Introduction to Regional Science*, Cambridge, Mass., 1960) and his school.

The methodological development of research in these fields, the application of economic calculation to urban problems (J. Lesourne, *Le calcul économique*, 1964), and the practical applications in urban transportation, with the economic comparison of alternative solutions (undergoing wide experimentation in the United States and England) and, more rarely, applications on the town-planning level (e.g., the revision of the general plan of Genoa, 1963–65, where the attempt at an over-all balance for alternative spatial schemes has been made) should all lead shortly to the formulation of theoretical bases for town-planning accounting and to its practical application. Only when the methods of intuitive a priori synthesis have been abandoned will town planning emerge from the present empirical and experimental phase on analytical research by sectors. And only when the tools for an over-all *ex ante* verification of the optimum choices have been obtained will town planning be completely mature. In this perspective, also creative invention will have found the proper limits of its field of action for every type and size of intervention and the present uncertainty as to the delimitation of each theme will have been overcome. Otherwise creative invention bears the improper responsibility of defining and choosing the theme itself, with disastrous consequences for the product and the creative process.

Specific problems. Without violating the principle of an over-all perspective, certain fields of intervention in which special techniques and methodologies have been developed should be examined separately. For these fields specific delimited problems have evolved. The main focuses of specific planning intervention are new residential districts, central-city areas and urban renewal, business and administrative centers, industrial complexes, urban traffic, and the organization of recreation. These must not be understood as fields for independent and sectoral action but, rather, as interdependent focal points within a necessarily unified process.

a. Residential districts. Specific literature on this subject has reached extraordinary dimensions proportionate to the great diffusion of the aforementioned type of planning and intervention, which has become general in many socially advanced countries where collective dwellings prevail. The subject is treated in detail in numerous architectural reviews. In certain

countries the residential district has become the smallest unit in planning and execution, at which level architectural design is usually practiced. The planning of single residential buildings is becoming more and more exceptional. The most recent efforts are connected with the tradition of the modern residential district, which goes back to the architectural experiments of the rationalist currents of the 1930s, mainly in Germany and Holland, and the organic currents in England and the United States.

From 1945 to 1950 the planning and execution of residential districts experienced a revival in Sweden through communal and cooperative initiatives. The districts were subjected to profound innovations that, through a free compositional distribution of the building (or structural) masses, attempted a unified characterization. New importance was assumed by the design unit, which usually contained a portion of natural land with rocks and trees or, more rarely, equipped recreation areas. The districts of Torsviksjöden at Lidingö (PL. 158), Gröndal (1946), Råcksta (1948), Blackeberg (1948) and Danviksklippan in Stockholm (FIG. 237), Rosta (1947) and Baronbackarna in Örebro (perhaps the most exemplary of all; FIGS. 237, 243) immediately became famous. The names of their various creators also became well known, from architects such as Sven Backström and Leif Reinius to community officials such as Sven Markelius, Hakon Ahlberg, and Goran Sidenbladh, who composed the nucleus of the Office for the Master Plan of Stockholm. To Backström and Reinius are due the impressive "town sections" of Vällingby (1953), for 60,000 inhabitants, and Farsta (1960), for 43,000 inhabitants (PLS. 158, 159). The Swedish residential complexes became synonyms for freedom of conception and organic research in spatial distribution and were accepted as models in many countries. Undoubtedly they represent a period of fertile inspiration; nevertheless it was followed by a phase of weariness and discontinuity, showing the limits of markedly formal planning research and of execution that was often hurried and lacked carefully conceived development. These weaknesses, however, were redeemed by civic and business centers of great vitality and refinement, such as those of Vällingby, Farsta, and Råmgsved, and by the breadth of conception of the surrounding natural environment. These surroundings are highly protected, and they both separate and connect the new complexes.

Almost contemporaneously there developed in Denmark a similar flowering of residential communities (PL. 160) that are distinguished from those in Sweden for their more refined architecture. While stressing the unitary character of the communities, the architecture also emphasizes their lack of relationship with one another and with the metropolis — a characteristic that derives from the rationalist tradition. Here, too, the names of the most significant districts [e.g., Gentofte, 1947; Brøndyparken, 1947; Bredalsparken, 1949; Voldsparken, 1949; Bellahøj, 1951; Skoleparken, 1933; Nygårdsparken, 1955; the small residential nuclei of Kingo at Helsingør (Elsinore), FIG. 237; and Fredensborg, 1962] are associated with those of their creators, including Arne Jacobsen, Eske Kristensen, Kay Otto Fisker, and Jørn Nielsen.

In Finland some districts of great interest were established during the 1945–55 decade, such as those at Rovaniemi (1945) and Otaniemi (1948), built after a project by Hugo Alvar Henrik Aalto (q.v.), and the garden city of Tapiola (1952), about 6 mi. from Helsinki, which is laid out over 667 acres and contains 17,000 inhabitants. It includes a business and cultural center and is a remarkable example of nonspeculative private enterprise promoted by a foundation (Asuntosäätiö) of associations and unions.

In Holland the most urgent and serious problems were those of reconstruction in the devastated areas. One of the most significant achievements was the planned reconstruction of the 642 acres of central Rotterdam. Following this, methodical execution of the new districts for the western expansion of Amsterdam was resumed according to the plans of the prewar period that were gradually brought up to date and minutely planned and executed. To this planning process must be added the new expansions of Rotterdam, with the large district of

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Tuinstad Zuidwijk planned by Van Tijen and Maaskant. Since urban planning in Holland has reached a high degree of maturity, its results are widely diffused in large and small cities and in the rural areas, where the process of land (or lot) division and farm reorganization is covering a considerable expanse of territory. Up to 1960 replotting had been completed or was in process in about one-tenth of the agricultural territory and was being prepared for more than one-third of the agricultural territory in all. Lot division in Holland attains high technical efficiency and democratic participation, as in the exemplary plan of Kampereiland. The widespread planning process has caused the Dutch urban districts and rural complexes to lose their fragmentary character. The entire country is now a rural-urban continuum of modern civilization.

In England the building of new planned cities or towns in the early postwar period took on special meaning in the context of the extensive reconstruction and renewal that characterized the town-planning and construction policies of the first postwar Labor government. The period saw a search for the integration of existing districts and central cities in the sphere of urban planning and for the proper execution of urban residential districts. Examples include Roehampton Estate (PL. 162) and Loughborough (both, 1952) in London, built on plans by the London County Council; Park Hill in Sheffield, Yorkshire (1961); the planned residential nuclei inserted into smaller cities and villages, in which the modest scale is set off by extremely careful townscape work, as seen in the complexes of Rushbrooke, Suffolk (1954) and Bedmont, Hertfordshire (1961); and the simple cluster of houses of St. Mary's Close, Shincliffe, which are arranged around a community garden (1961). Fifteen New Towns under construction in the decade 1946–56 for a total of 895,000 inhabitants (of which almost 494,000 were settled by Dec. 31, 1961) and two more projected cities constitute a significant achievement. The New Towns were born of the developing cultural tradition of garden cities, of political preparation by the Barlow (1940), Scott (1942), and Uthwatt (1942) committees, and of the creation of the Ministry of Town and Country Planning (1943). They were conceived within the framework of a national program for decongesting the London metropolitan area and for transferring the excess population from underdeveloped areas. The New Towns Act of 1946 made the existence of the towns possible and established the development corporations entrusted with the planning, construction, and management.

The first New Towns of the postwar period were Stevenage (PL. 161), Crawley (1947), Harlow (1947), and East Kilbride (1947), based on extremely low densities and built as distinct towns around a civic and business core. Through a critical evaluation of the results and basic ideas and an exhaustive study of Hook (PL. 162), which was never built, new and more compact plans were developed. These no longer required a core but, rather, a true central high-density "spine" for the activities of communal life, as well as areas of variable density that were not excessively decentralized from the "spine" axis. Cumbernauld in Scotland was designed according to this model. Its execution undoubtedly represents the most mature result achieved by town planning in the United Kingdom in the 20 years between 1945 and 1965 (PL. 163).

Contrasting opinions have been expressed on the cultural balance of the New Towns. On the one hand, there is the passionately favorable stand of F. J. Osborn (1963); on the other hand, there have arisen polemics over the failure of the idea of the New Town as an unnatural antithesis of the expansion of existing cities, and critics have laid stress on the difficulties of the starting procedure (Rodwin, 1956), on certain compositional and sociological inefficiencies resulting from the excessively low density of the first accomplishments, and on the faults in spatial and planning details. There have been many concrete replies with regard to these criticisms in the form of alternative solutions.

No less vital than the Scandinavian and English experiments in this field are those of the French, which originated immediately after World War II in a systematic application of *remembrement* in reconstruction plans such as those of Maubeuge (architect André Lurçat) and Le Havre (project by Auguste Perret). Also from those years came Le Corbusier's *unité d'habitation* experiment in Marseilles (I, PL. 388; IX, PL. 107).

To these first grand and audacious conceptions were very soon added, beginning in 1947, the *habitations à loyer modéré* (H.L.M.), residential districts and nuclei carried out by private, public, or mixed nonprofit rental-housing associations. Another development was the establishment of the *sociétés d'économie mixte* with the participation of public institutions and financial organizations. From 1950 on, operations involving 500 to 1,000 or even up to 2,000 units were undertaken. These operations demanded special shrewdness in the acquisition of building sites (the Loi Foncières of 1953 provided for this) as well as in the furnishing of an infrastructure of services and public facilities.

The H.L.M. enterprises multiplied rapidly and included the districts of Saint-Dizier-le-Neuf (architect, A. Croizé), Chalon-sur-Saône (architect F. Jerrold), Bordeaux-le-Benauge, as well as a great number of districts or suburbs in the Paris area (PL. 153). In those years, project development gradually increased both in the number of projects built and in the size of each project. At first there were 1,000 dwelling units, but later there were 2,000 and more; the districts became *grands ensembles* with increasingly complex and abundant public facilities.

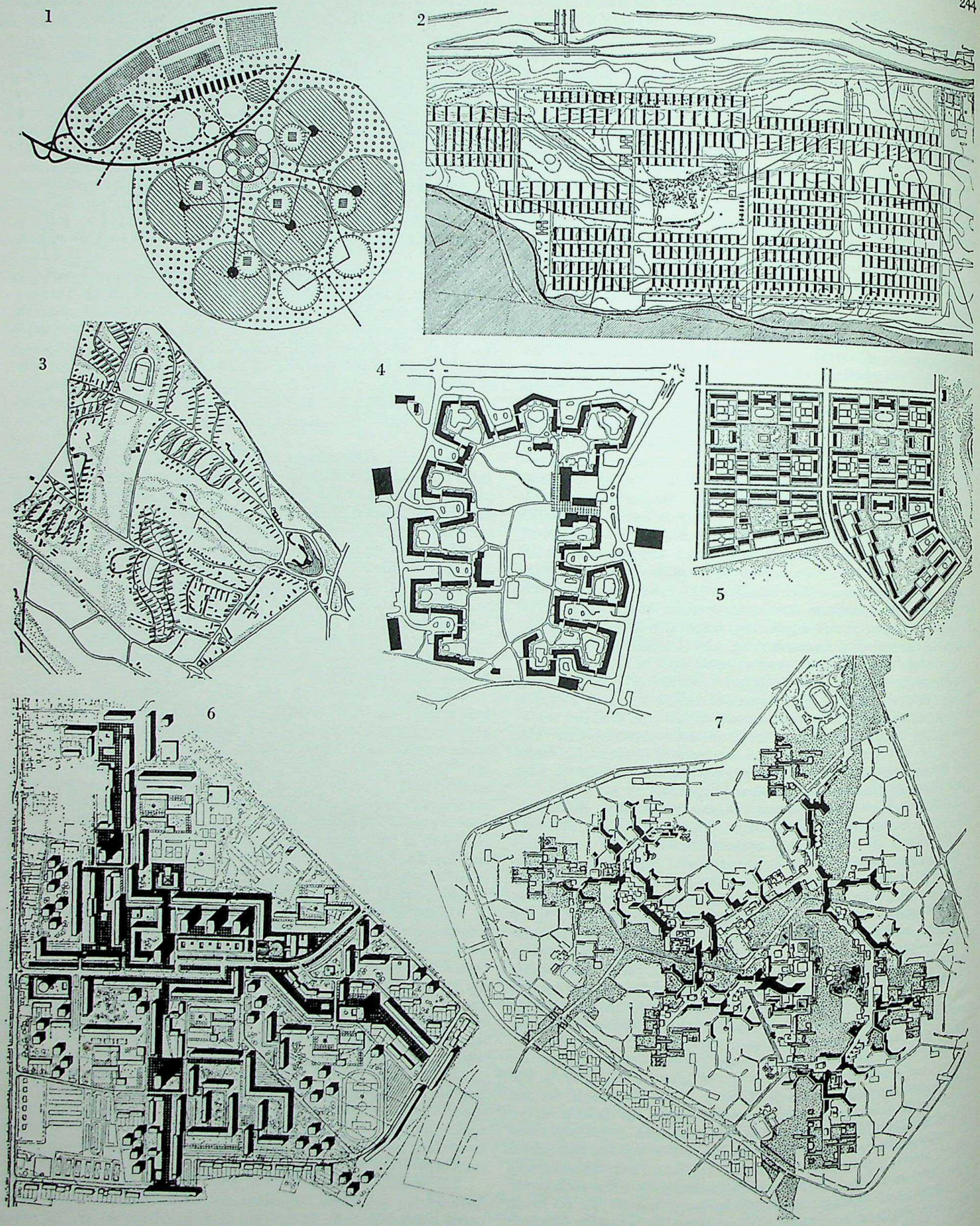
These new dimensional requirements were provided for in 1958 by legislative measures that introduced into the urban-planning technique the *zones à urbaniser en priorité* (ZUP); for such zones detailed construction plans were drawn up in advance and land was reserved. Among the *grands ensembles* executed in the 1950s in the Paris region were the big complexes of Marly-les-Grandes-Terres (architects M. Lods, J. J. Honneger, and J. Beufé), Pantin-les-Courtellières (architect Emile Aillaud), Sarcelles (architects Boileau and Labourdatte), and Massy-Antony (architects P. Sonrel and J. Duthilleul). Among the large districts that almost constitute modern duplicates of the cities they adjoin is Bagnols-sur-Cèze (architects Candilis, Jossic, and Woods).

After 1958 almost all the larger French cities arranged beforehand for the options of the ZUP in their plans and provided for the drawing up of the corresponding *plan masse*: Alençon (FIG. 243), Annecy, Brest, Bordeaux, Clermont-Ferrand (PL. 171), Dijon, Epinal, Lyons, Marseilles, Nantes, Nîmes, and Rouen. For many of these large districts a planning competition was established, as was the case at Caen-Hérouville and Toulouse-le-Mirail (FIG. 243). George Candilis's group emerged as the winner with its plan for Toulouse-le-Mirail and for the model of a new city of 100,000 inhabitants. In the present panorama of French town planning the Toulouse-le-Mirail plan is the most interesting and organic.

On the whole, the French experiment of the *grands ensembles*, which were carried out as H.L.M. and ZUP operations, can be considered highly positive on the levels of organization, financing, and quality of planning and building; they are notable for the compositional breadth of the large neighborhoods and spaces, for the services furnished, and for experimentation in new construction techniques. What is lacking in the *grand ensembles*, however, is integration into the urban context, from which they often break away in a violent and deliberate manner to form independent physical and sociological entities. Fragmentary operations persist, and new legislative measures for a more extensive preventive acquisition of land have long been under study. Such measures would allow the development of long-term programs and, consequently, a more interpenetrated organization of the whole.

In West Germany during the first decade after World War II the problems of urban reconstruction and redevelopment predominated. Only later did the phase of development and extension take shape. Nevertheless, in some large cities, such as Hamburg, Cologne, Hannover, and Frankfurt am Main, residential development in the form of planned districts soon began again; this was accomplished through communal or cooperative initiatives, and the districts were inserted into overall development plans. Quality standards are exemplified by

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Residential areas: (1) Scheme for the structural organization of nuclei in a district; (2) garden city of Goldstein, Frankfurt am Main, designed by E. May and H. Boelim, 1929; (3) Sennestadt, Germany, designed by H. B. Reichow, 1954; (4) Örebro, Sweden, Baronbackarna, designed by S. E. White, 1954; (5) Erevan, Armenian S.S.R., district of northwest zone of city, 1956; (6) Alençon, France, ZUP, designed by M. Novarina and J. Levy, 1962; (7) Toulouse-le-Mirail, France, designed by Candilis, Josic, and Woods, 1962.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the Hamburg districts of Lurup (1956, for 40,000 inhabitants) and Denickestrasse (1958); in Cologne, the district of Vingst (PL. 166) and the new city for 100,000 inhabitants begun in 1960; and the lively Romeo und Julia residential nucleus by Hans Scharoun in Stuttgart (1957). A new city deserving special mention is Sennestadt (PL. 166; FIG. 243), begun in 1954 and designed for 20,000 inhabitants. It was planned by Hans Bernhard Reichow on the principles of organic structure with fluid circulation (Reichow, 1948, 1959).

In Italy the production of planned districts in the 1950–63 period was almost essentially the work of the INA-Casa, established by law in 1949 as a plan for increased employment and directed by the Ministry of Labor. In its first 14 years of activity the INA-Casa realized the construction of 1,920,000 rooms in 355,000 dwelling units, corresponding to about 15 per cent of the aggregate national construction of that period and comprising almost all state and subsidized building activity. Many dwellings built with these funds have been grouped in nuclei or complexes. A number of these were town-planning designs of good quality, but their insertion into the urban context of the various cities was not always sufficiently evaluated in general terms. This caused fragmentary arrangements, often accentuated by excessive research in spatial composition, as well as actual confusion in the process of urban development. Despite these limitations, certain districts were successful for their exposition of compositional ideas (PL. 169): Bellavista in Ivrea (1959; architects L. Piccinato and V. Girardi); Falchera in Turin (1951; architects G. Astengo, S. Molli-Boffa, M. Passanti, N. Renacco, A. Rizzotti; FIG. 237); the Bernabò Brea development in Genoa (1951; architects L. C. Daneri, L. Grossi Bianchi, G. Zappa); Cesate, near Milan (1951; architects F. Albini, L. B. Belgioioso, I. Gardella, E. Peressutti, E. N. Rogers), Harrar in Milan (1951; architects P. Bottoni, L. Figini, G. Pollini, G. Ponti), Monte Olimpino in Como (1954; architects E. Cerutti and P. Lingeri), Via Campano in Rimini (1958; architects P. M. Lugli and C. Dall'Olio).

Parallel to INA-Casa, considerable building activity was carried out in Italy during these same years in the field of agricultural reform by UNRRA-Casa. Examples are the new complexes of La Martella (architect L. Quaroni; PL. 169) and Borgo Venusio (1953; architect L. Piccinato; FIG. 237), both in Matera. Beginning in 1956, it seemed that better results in town planning could be achieved if the Ministry of Public Works coordinated in districts called CEP (Coordinamento di Edilizia Popolare) the various activities of state-subsidized residential construction, of the INA-Casa, and of certain other public institutions and cooperative societies. The most important national representatives of town planning urged this coordination (L. Quaroni, "La politica del quartiere," *Urbanistica*, XXII, 1957). Unfortunately the results have not been proportionate to the aspirations in the 31 projects undertaken. Only a few of the districts have reached satisfactory completion — for example, Le Vallette at Turin (coordinating architect N. Renacco). Excellent ideas such as Quaroni's project for the CEP district of San Giuliano in Venice have for various reasons remained on paper. If the district policy has not generally produced results comparable to the financial outlay the cause is essentially a lack of a satisfactory town-planning policy for channeling and guiding the impetuous building development promoted by private initiative, which during the first 14 years of maximum state effort represented 84 per cent of the aggregate building activity and subsequently reached 94 per cent. This has overwhelmed all public initiative and limited it to the fringe of its prescribed field of action.

Discussion of the construction of residential districts in the socialist countries will be limited to a few examples and a few countries. In the U.S.S.R. town planning after World War II was long conditioned by the requirements of reconstruction and by an enormous shortage of housing. The problem of quantity took priority over other considerations and influenced technological procedures for mass production; work had to be carried out in the shortest possible time and with the smallest possible amount of manpower. Thus processes of heavy prefabrication were developed, and the spatial composition of large sections of buildings (average 8–10 stories) was partly conditioned by technological limitations. But the greatest obstacle to the affirmation of an autonomous and original conception of urban space was the undisputed rule of the academic in architecture. In 1930 Stalin repudiated modern architectural trends, and this attitude prevailed until 1954. Monumentality, imposed at all costs on every building, was achieved through abstract late-19th-century schemes based on symmetry and the stylistic orders. Every creative impulse was inhibited and frozen in a forced formality. Traces of this approach appear in the new quarters of Moscow, in the renewal operations inside the city, and in the construction along the Moscow Prospect. The most obvious demonstration of this is the large southwestern urban area, whose axis is formed by the Lenin Stadium, the Lemonossov University, and the Palace of the Soviets — not only in the large monumental buildings and the generous, geometrically arranged green spaces but also in the spatial composition of the various residential districts (in the form of symmetrically arranged uniform sections) lined up on the eastern side of the area.

The rejection of academic restrictions after 1954 led to new conceptual formulations that are visible in the first experimental project of Novye Cheremushky (PL. 167) and in the new district projects prepared by the Giprogor of Moscow, the institute for planning, which, with 800 employees, provides for urban planning in all the territory of the Soviet Republics with the exception of Moscow, Leningrad, and Novosibirsk. In 1959 Moscow's first satellite city, Sputnik, was planned for about 70,000 inhabitants, incorporating new, freer, and fully acceptable compositional criteria. Later developments in administrative decentralization, urban planning, and the construction of new residential districts should facilitate the search for solutions that will be more differentiated and relevant to local realities.

In Poland, too, the problems of rebuilding were harrassing, especially in Warsaw; but here such obstacles as those imposed by the Soviet academy did not operate, except very slightly in the first phase of reconstruction. On the contrary, the solid Polish cultural tradition was able to develop autonomous research in theoretical city and regional planning. New residential districts continue to be planned and built, as can be observed in Warsaw. Among the experiments in *ex novo* creation are Nowa Huta and Nowe Tychy in the department of Kraków, which are part of a regional plan for the spatial redistribution of economic activities (PL. 150).

Lively building activity characterized Yugoslavia after 1945. Important works in the sphere of city and regional planning are the residential complexes of Velenje in Slovenia (architect Trenz; PL. 168), the new cities of Ploce and Bar, and the extensions of Ljubljana and Zagreb.

In the United States no resumption or development of the policy and technique of urban planning occurred in the early postwar period. During the 1930s the United States had made a valuable conceptual and qualitative contribution to such policy and technique with the experiments of Radburn, N. J. (architects Clarence Stein and Henry Wright; FIG. 237); Greenbelt, Md. (planner Hale Walker, architects Douglas Ellington and R. J. Wadsworth; PL. 164); and Baldwin Hills Village in Los Angeles (planner Clarence Stein, architects Reginald Johnson and Associates; FIG. 237). Greenbelt and Baldwin Hills Village were the result of federal government initiatives. The three communities were, for their time, rare examples of town planning in an otherwise unplanned urban and suburban expanse. They are in great part a product of the determination and enthusiasm of Clarence Stein, a pioneer in American town planning. A later development was the 1954 project for the Mill Creek public housing projects in West Philadelphia with houses and apartment buildings designed by Louis I. Kahn, Louis McAllister, and Kenneth Day. A new sociological tendency toward rationalization of the suburban complex is the thriving movement for so-called "cluster development," based on a grouping of buildings in nuclei, with broad green spaces and public facilities among the buildings (W. Whyte, *Cluster Development*, New York, 1964). These clusters are designed to satisfy the newly felt need of Americans, tired of rootlessness, to become permanent members of a community. The most eloquent

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

example of the cluster development is the new community of Reston, Virginia (1963), which by 1980 should have 75,000 inhabitants divided among seven villages (PL. 164). The Department of Housing and Urban Development (HUD), instituted by 1965 legislation, is oriented toward a new and more rational trend in residential construction in the United States.

From these brief indications it appears that planned building activity in the various countries is lively, extremely varied, and full of problems. But only from a complete international outline for the years 1945–65 (not yet attempted) would it be possible to appreciate fully the worldwide effort to give a new character to urban complexes. However, it is apparent that the policy of *laissez faire* in urban development can only be condemned for the uncivil quality of its tangible results.

b. Central-city areas and urban renewal. Urban settlements show their vitality in ways other than by generating suburban expansions, whether spontaneous or planned. Most important, they live dynamically in the structuration which their historical development has gradually assimilated and which constitutes the existing city; upon this are grafted the expansions, whether marginal or structural. Qualifying the various forms of this vitality are: (1) the rational or irrational use of the preexisting urban heritage; (2) the passive acceptance of its deterioration as an inevitable product of use until that heritage completely degenerates or of its continued upkeep, rehabilitation, reclamation, or recovery *in extremis* is instituted; and (3) an attitude of prudent respect for the environmental characteristics of the ancient or recent historical fabric, or a tendency toward contemptuous destruction of those characteristics through fragmentary or systematic processes of substitution. Such traits not only qualify the forms of urban vitality, but they also illuminate the varied compound situations that are revealed, as well as the differing cultural attitudes of local communities toward the physical surroundings in which they are contained. The communities themselves are conditioned by their physical surroundings and in turn continually modify them.

Preservational, destructive, or substitutive attitudes toward the preexisting urban heritage are as old as the settlements themselves. The repetition from generation to generation of neolithic forms of settlement up to the present day is one of the strongest manifestations of preservation. Old urban outlines are often continued in settlements with successive cultural stratifications (FIG. 189). The smaller medieval complexes show endless variations on a few fixed themes; these, in turn, copy more archaic village experiments. Unreserved destructive and substitutive attitudes are also part of the history of cities and may be connected with important architectural structures that completely transform the urban countenance. Or these attitudes may affect substantial modifications achieved only through legal norms that have been assumed from time to time. The frequent adoption of one- or two-story building elevations in walled cities, for example, met the additional demand for dwellings without requiring the demolition and reconstruction of city walls.

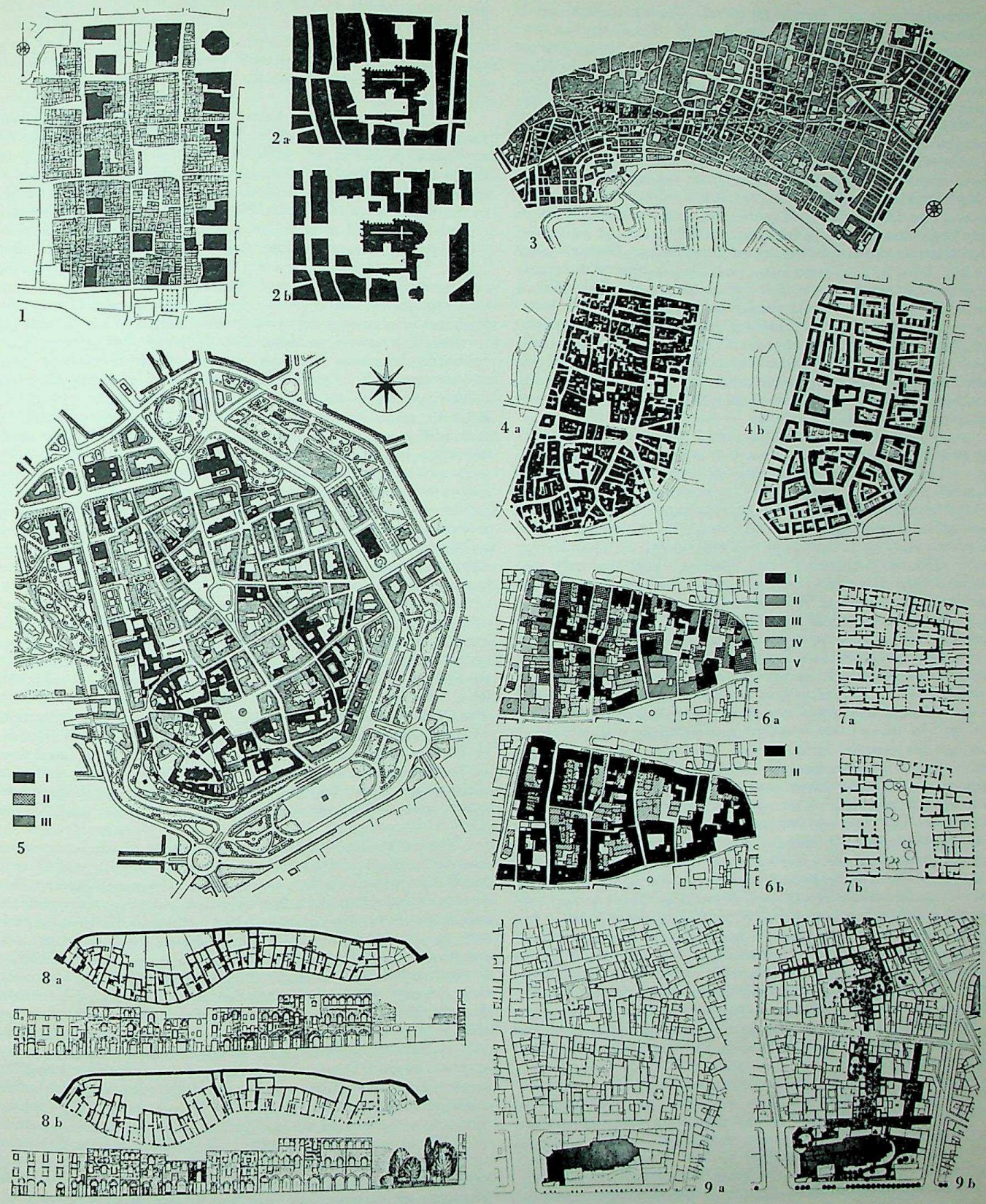
It has been observed that in the past the village has shown a tendency to be sociologically and culturally static and therefore preservative, and that the city has been more dynamic and consequently often destructive and substitutive. It is not valid, however, to assume that this is true for the present or the future; the present cultural situation differs substantially from that of the past with regard to preexisting historical elements. The break in the continuity of modern culture that coincided with the industrial revolution, as well as the break in the continuity of architectural-urbanistic development, necessitated a different attitude toward the urban heritage. This new attitude, which corresponds to the attribution of unique value to things of the past, manifests itself in the demand for objects possessing this testimony (see PRESERVATION OF ART WORKS). For this reason it is no longer possible to justify culturally the destruction of historic buildings — those buildings universally recognized as historically significant and those which, although lacking high architectural value, document a deliberate and conscious attempt to create the physical image of the city. The latter group should be examined historically and critically before intervention. Historical and critical evaluation cannot be limited to buildings alone but must be extended to all external city spaces. In any historic urban settlement the buildings form a whole with the open spaces — streets, squares, kitchen gardens, internal gardens, internal and peripheral walls. Often the very distribution of these open spaces gives structure to the entire complex. It is actually the urban complex as a whole that serves as testimony, and inseparable from it is the natural, humanized landscape surrounding the city and within it.

Thus with regard to the historic settlements that have been partly or wholly preserved, or even continuously renewed in the course of time, modern culture expresses an over-all judgment that cannot avoid demanding measures of protection and preservative intervention. Certain operations must be resolutely condemned: (1) the so-called "liberation of monuments" at the expense of surrounding buildings; (2) restoration of the environment to a given historical period, eliminating evidence of following periods; (3) replacement of "minor" buildings that have environmental value with new buildings, even if the latter have the same dimensions; (4) insertion of buildings camouflaging themselves as old buildings through stylistic imitations or neutral architecture; (5) addition of stories to buildings; and (6) widening of roads with a historic outline as well as the "rectification" of ancient squares (FIG. 249). Environmental manipulations around historic monuments were in great favor during the last century and, unfortunately, are still undertaken, as in Barcelona, with the pseudo restoration of the Roman walls and "liberations" projected around the Basilica of S. María del Mar. Equally reprehensible is the aggregate of 700 stories added onto buildings in Venice between 1947 and 1962 and, during the same period, the destruction of historical environments in Padua, Ravenna, Naples, and many other old Italian cities through violent insertions and replacements.

War destruction has given rise to serious problems regarding the historic cores of cities. In exceptional cases faithful restoration of the destroyed monument is justified for sentimental reasons — for example, the market square in Warsaw (PL. 174) and Sta Trinità Bridge in Florence. Such restorations must be sustained by preexisting relief maps, the use of fragments, and stone building materials from the original quarries. But all stylistic or pseudomimetic pastiches are reprehensible, like the reconstruction of Borgo S. Jacopo and Via di Por S. Maria in Florence. Equally unjustified are the reconstructions of old road systems with widening of the road sections, as the reconstructions of destroyed areas in the French seaport of Saint-Malo (1948–58) and in Heilbronn, West Germany (FIG. 249). In cases of total destruction it is far more logical to restructure with modern criteria as was done in Coventry. Even more serious are problems posed by the salvaging of degenerated historic sections, which demands complex operations of preservative rehabilitation. Such operations involve (1) judicious restoration of the original external and internal parts of buildings without imitation or addition; (2) elimination of recent and damaging superstructures; (3) internal adaptation of the buildings to new valid purposes or to comfortable lodgings; (4) arrangement of the external spaces with street paving, tree planting, and suitable urban furniture; (5) maintenance of economic and commercial activities in the old sections; (6) the insertion (if absolutely indispensable for functioning of the whole) of new buildings of very high quality, which must be scrupulously controlled in terms of bulk and distribution and not include additional architectural expression.

These operations must be preceded by thorough internal and external stratigraphic surveys of the actual conditions and by historical-critical and sociological studies of the complex. They cannot be carried out in a fragmentary manner, building by building, but must be executed through detailed plans of organic complexes. In turn, these complexes must be inserted into master plans that solve in a unified way the problems of intended land use and of traffic and guarantee internal coherence. Excellent studies have been carried out in Regensburg (since 1960; FIG. 249), Genoa (since (1958; PL. 174), and Stockholm (since 1960) through research and plans pertaining to the re-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Urban renewal. Negative examples of intervention (1–4). (1) Florence, renewal plan for center of city, 1885–95. Reims, example of "liberation of monuments": (2*a*) Cathedral area before intervention; (2*b*) Cathedral area after 1883. (3) Naples, rehabilitation plan, widening and opening of the Corso Re d'Italia, 1884. Heilbronn, reconstruction plan based on preexisting scheme: (4*a*) The old city, 1939; (4*b*) reconstruction plan, 1955. Positive examples of intervention (5–9). (5) Brno, plan for rehabilitating and preserving the central city, 1956–57. *Key*: (I) Historic buildings of high architectural or cultural value; (II) old constructions; (III) proposed new constructions. Regensburg, rehabilitation plan for central city, 1963; (6*a*) Analysis, dating of the buildings. *Key*: (I) Before 1300; (II) 1300–1500; (III) 1500–1700; (IV) 1700–1800; (V) after 1800. (6*b*) Plan for renewal. *Key*: (I) Buildings to be preserved; (II) buildings to be demolished. Regensburg, rehabilitation plan for section of the central city: (7*a*) Plan of the section, 1963; (7*b*) plan for intervention, 1963. Gubbio, San Martino district, Via Capitano del Popolo: (8*a*) Conditions in 1962; (8*b*) plan for restoration and renewal, 1962. Paris, Saint-Germain-des-Près: (9*a*) Conditions in 1962; (9*b*) proposal for rehabilitation with the creation of pedestrian paths, 1962.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

spective historic city cores. In certain French studies careful scale models were arranged in advance. These studies were conducted in Paris in the Marais district (since 1939) and are being projected for Saint-Germain-des-Prés (FIG. 249). They have been executed in Chartres and Lyons and in the redevelopment (with lower population density) of the district of Vesterbro in Copenhagen according to a plan formulated under the direction of S. A. Rasmussen. Forty Czechoslovak cities were redeveloped and restored in an exemplary manner in the decade 1950–60. From these experiences, from the significant shift in public opinion, and from studies on the subject it is clear that interest in the problem of protecting and evaluating historic city centers is now ripe; it depends solely upon the interest of the countries involved to carry out its solution. Financing can be facilitated by long-term loans; possible liabilities of the operation can be covered by adequate state assistance. This outlook is confirmed by the final resolution approved by the International Federation for Housing and Planning Congress at Santiago de Compostela in 1961: "The manner in which the problems of the historical urban centers are faced, and the attention given them, besides the capacity to accept the sacrifices their preservation entails, are all proof of the cultural maturity of society."

A completely different discussion is required for basic redevelopment operations in areas with no historical-environmental value. These operations may be undertaken because of necessary structural reclamation in dwellings that have degenerated into hovels, such as the English workers' cottages built during the 19th century or the single-story row houses in southern Italy with one-room units and only one load-bearing wall. The need for a radically different land use may also instigate extensive redevelopment operations. For example, the land may be covered with obsolete industrial factories that must be replaced; or, as in certain North American cities, the central areas may be antiquated and low in density; or there may be a need to create new administrative and commercial centers in areas which, because of special economic conditions (e.g., a port facility, a poorly educated population, a central territorial position), could become focal points for tertiary activities. In these cases it seems reasonable and opportune to conduct the renewal operations as a unified operation. This would permit greater freedom of action concerning land-coverage limits imposed by private property and the existing infrastructural network. The network must be remodeled and adapted to the new requirements of circulation, parking, and access to building complexes. The mapping of detailed construction plans becomes, in such cases, the indispensable operative tool. This is demonstrated by the numerous operations of urban renewal undertaken in various countries between 1950 and 1965: the redevelopment of the center of Philadelphia (PL. 151); the construction of the Golden Lane district in London (1954); the City Plan West for the business center in the neighborhood of the Copenhagen central station (PL. 177); the new business center of Sergelgatan in Stockholm (PL. 176); the administrative complex of La Défense in Paris (PL. 175); the business center of Heidelberg (PL. 175); the new administrative center of Milan (PL. 177); and the rebuilding and redevelopment of central Düsseldorf (PL. 152).

Significant among the redevelopment projects that were still in the planning stage in 1965 are those for the areas of Barbican and Piccadilly Circus in London (PL. 175); Cornwallis in Halifax (PL. 176); Santa Monica and the Golden Gateway in San Francisco (PL. 165); Fort Worth, Tex. (PL. 178); Providence, R. I. (PL. 178); the winning project for the new administrative center of Turin (PL. 177); and the impressive plan for the revitalization of Pennsylvania Avenue in Washington, D.C. The San Francisco and Providence projects are representative of a type of transformation in North American cities that ecompasses the entire downtown area; emphasis is placed on commercial, administrative, and cultural activities, and complete solutions are provided for the exclusion of vehicular traffic.

Even from these few examples it is apparent that the field of urban renewal is extremely promising. It has played a complementary role in the rehabilitation and protection of the historic centers of the large European cities; but it has had more extensive application in North American cities that lack any special character and, in general, in cities that have grown too quickly in a disorderly manner.

c. Vehicular traffic. Le Corbusier, observing the accelerating annual increase in the number of parking lots for automobiles in France, proposed the extrapolation of a tendential curve to create a town planning that would accommodate this phenomenon (1927). The facts have exceeded Le Corbusier's predictions. (In the United States, for example, the rate of average annual increase of 16 vehicles per 1,000 inhabitants between 1920 and 1930 reestablished itself without fluctuation after 1946.) The automobile has completely altered cities and regions to its requirements, creating innumerable new problems that are technical, economic, psychological, sociological, and hygienic. Problems concerning safety have also arisen. The automobile revolution is now an accomplished fact, but the necessary responsible choices or modifications of collective behavior have not yet occurred. Automobile development has been passively endured as an inevitable fact. Some attempts have been made, however, to adapt the existing or projected urban fabric by means of specific engineering techniques; but frequently there has been impotent surrender to the invasion of the cities by automobiles and the resultant antieconomic, chaotic, and dangerous situations of disorder, obstruction, and saturation. Even public services have within a few years become passive nearly everywhere as the preference given to private vehicles in free circulation and the congestion caused by the lack of adequate and timely measures have extensively reduced the use of mass transportation.

It is now clear that the problems of vehicular traffic cannot be completely solved with superhighways, intersections, multilevel approaches, exit routes, and cloverleaf patterns. These are designed to make the aggregate circulation as fluid as possible, so as to guarantee the maximum absorption of vehicular flow. However, such technical devices involve extremely high costs and considerable land coverage, and they can serve only as a skeletal framework for urban and extra-urban circulation, as do the spinal axes of the urban expressways in Germany (e.g., Düsseldorf, PL. 180; Essen; Cologne). Other examples are the main networks of expressways in many North American cities, such as Chicago, Los Angeles, Pittsburgh, and Kansas City, Mo. (FIG. 255).

When networks such as these are complete, after enormous financial outlays, the fluidity of traffic can be guaranteed only for the major arteries but not for secondary city arteries. Obstruction and congestion are therefore only partially solved. High-rate meters have been installed in parking places in central-city areas; underground or elevated parking lots have been constructed; and adequate parking spaces have been established in residential and office areas. Cities such as Vienna and Hamburg have adopted these opportune but not resolutive adjustments. A constant increase of motor vehicles according to the existing tendency will lead, by the year 2000, to four times as many motor vehicles in circulation. Even the total capacity of absorption of the freeways will be reached at some point, imposing burdensome and perhaps impossible duplication. The urban expressway system may be feasible in certain favorable urban-planning situations in which space is available or can be made available at tolerable costs (e.g., in various North American cities where the suburban and even the central areas have low density); however, it is not possible in all cities, especially in European cities with their high building density. The problem of vehicular circulation is not an isolated one, and it cannot be solved by expedients of traffic engineering that are brilliant but expensive. Nor is it helpful to deplore the modest sums spent by nations or various localities for technical solutions guaranteeing free circulation of private vehicles in cities. The problem is quite different. It must first be decided whether or not the free access of vehicles to every part of the urban territory (especially the central areas) has first option for the present and the foreseeable future. If so, the costs must be cal-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

culated and borne. But if it is not, or if the most ingenious technical solutions cannot guarantee free access, or if the costs required for its accomplishment are intolerable, then vehicular traffic in some parts of the urban fabric must be limited or completely excluded. Public means of transport must be substituted, and solutions toward integration and equilibrium must be found.

Thus posed, the problem becomes one of town-planning policy. It must be kept in mind that it is not traffic that engenders the city, but the city that generates traffic. Consequently the flow varies in relation to the intensity of exchanges within the city and to the spatial distribution of the origin and destination of the traffic itself — that is, the spatial distribution of the various urban elements and, therefore, of the general urban scheme.

There now exists a complex and thorough technique for surveying and forecasting traffic and for comparing alternative solutions. It is based on a series of related operations that permits (1) measurement of total flow on typical days and during selected hours of the day, and analysis of the flow according to the motives for the journey; (2) measurement of frequency of contacts between the point of origin and destination of traffic, and the fixing of preferred paths of traffic flow based on these measurements; (3) calculation, based on constructed models, of anticipated intracity traffic flow at certain periods of the day, assuming future development in accordance with existing flow tendencies and with various alternative planning schemes for the distribution of points of origin and destination; (4) full-capacity use of existing infrastructural networks (i.e., city streets); (5) verification of coherence between projected flow and projected capacity of infrastructural networks or, in existing cities, verification of capacity of absorption of the existing or modified network, assuming maximum use; (6) verification of financial congruity between different solutions and available funds deriving from revenue anticipated on the basis of the various schemes of the plan; (7) institution of an over-all balance between advantages and disadvantages ("costs" and "profits") of the automobile-circulation patterns and mass-transportation systems in the sphere of the infrastructural solutions proposed; and (8) evaluation of which among the proposed solutions is best.

The operations for reaching a rational conclusion are undoubtedly long and expensive; but certainly the optimum solution cannot be found only within a study limited to the infrastructural network as an autonomous element. This is the conceptual limit of the Chicago Area Transportation Study (1959–62). Urban planning imposes itself as a necessary and unsuppressible condition for the solution of traffic problems. An exemplary operative study in this direction, although still incomplete according to the conceptual scheme proposed, is the study arranged in 1962–63 by the city of Leicester, England (W. K. Smigielski, *Leicester Traffic Plan*, 1964). It evaluates the costs of two alternative solutions studied essentially in terms of redeveloping the central area. One alternative is based on the free circulation of private vehicles, with an adequate tangential network for flow around the center, necessary points of penetration, and parking in garages. The other alternative is based on integration between private and public means of transportation and requires a ring system of roads on the perimeter of the central city. Private conveyances park at the points, from which a network of special bus routes for public transportation branch off, using the "park-and-ride" system that has proved to be so successful in some North American cities. A cost comparison shows the economic advantages of the second solution, which is about one-third less expensive than the first.

The previously mentioned studies for the creation of pedestrian malls in Fort Worth and Providence were oriented in this direction. The same scheme was used in development plans for the central area of Newcastle upon Tyne (1961), for the reconstruction of Coventry (1961), and for the *Innenstadt* of Essen (FIG. 255), with a complete network of shopping streets for pedestrians. Restitution of the streets of the central city to the pedestrian is occurring in Oslo and is being provided for by plan in Västerås, Sweden, and in other Scandinavian cities. This constitutes one of the social benefits of reorganization and rationalization of the traffic network and has become a presiding principle in the planning of new administrative and business centers. The advantages of this principle are widely proven in numerous achievements, including the Lijbaan of Rotterdam; the "town sections" of Vällingby (PL. 159) and Farsta (PL. 158) in Stockholm; the civic centers of Harlow, Stevenage (PL. 161), and Basildon (PL. 156) in England; and the center of Cumbernauld in Scotland (PL. 163). The same principle is found in the various shopping centers built in suburban or even rural areas in the United States, including two built by Victor Gruen Associates: Randhurst Center (PL. 178), about 22 mi. from Chicago, and Northland Center (1955), outside Detroit, each of which has parking accommodations for 10,000 vehicles.

The esthetic aspect of road infrastructures is threefold: the work itself, the integration of the work into the urban or natural landscape, and the development of new dynamic urban and landscape perspectives. The major elements of the work in its three phases are the "unfolding" of the roadway, the width and elevation of the barrier between opposing lanes of traffic, the curves, the furniture (e.g., billboards, lights, directional signs), and the completion of the entire road area with greenery. In Italy, one example of a technically inadequate work that disfigures the landscape is the highway (1963) between Perugia and Foligno, which passes below Assisi and Spello. Its poor quality becomes apparent when compared with the excellent technique and esthetic effects of the examples illustrated and discussed by Tunnard and Pushkarev in their study *Man-made America* (New Haven, 1963).

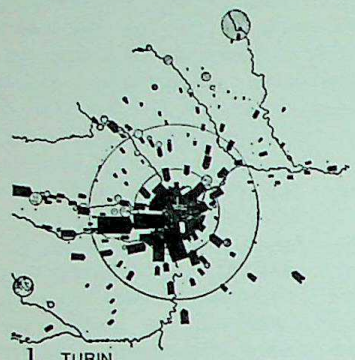
The Crowther and Buchanan reports, published in *Traffic in Towns* (London, 1963), clearly show the justification for alarm concerning city traffic problems in the immediate future. The reports also illustrate the acute interest in an urgent and rational solution and the necessity for further investigations and experimental verifications. The skill and delicacy with which these problems can be solved from the point of view of urban planning is shown by Paul Ritter (1964). The solutions impose themselves at all levels as a priority requirement for survival under civilized conditions.

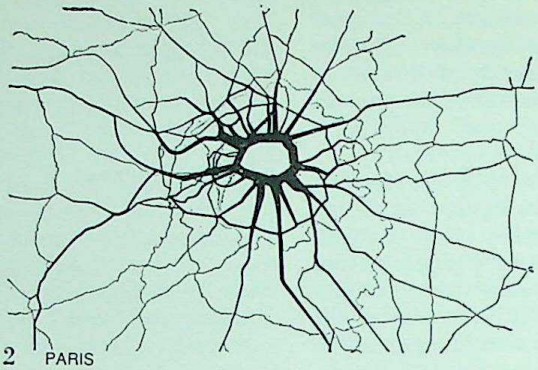
d. Equipped industrial zones. The planned industrial complex (i.e., the complex subject to legal control of location and possibly of technology) presupposes a certain policy of economic development that may be expressed in negative and positive terms. Negative control includes the prohibition of industrial establishments outside the areas set aside for that purpose in the land-use plan; this is the principle set forth in the projected master plan. More important is positive control, which manifests itself in operative intervention; this includes the two different forms of direct intervention and incentive for the industrial location of complexes in specified places.

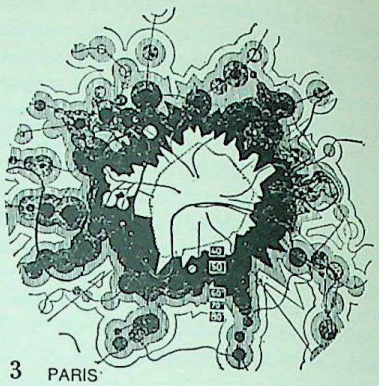
Direct intervention is typical of countries with a planned economy and is exclusively followed in the U.S.S.R. The intermittent use of direct intervention also occurs in countries with free-market economies, falling as much within the powers of state intervention as within the management of the monopolistic and oligopolistic organizations. It is part of the political instrumentalization in countries with planned mixed economies. The guiding and propelling action in such countries, however, most often takes the form of incentives.

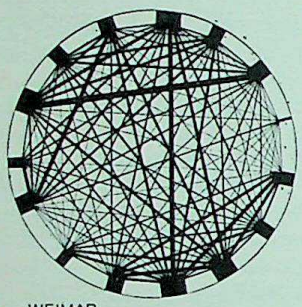
Experience shows that negative control can achieve operative efficacy only if the entire national territory is controlled by ordinances of equal juridical and technical validity, since speculators are otherwise permitted to maneuver in nonplanned suburban or external zones in such a way as to defeat competitively the zones of designated use. This occurred in the 1950s in the metropolitan areas of Turin and Milan. However, active intervention, either direct or based on incentive, will immediately achieve the specific objectives in view. This is shown not only by the industrial planning of the department of Kraków in Poland, for example, but also by the industrial development policy pursued in England since 1934, on which were subsequently modeled the planned interventions in the

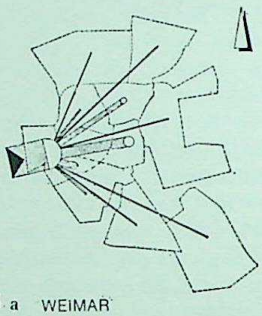
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

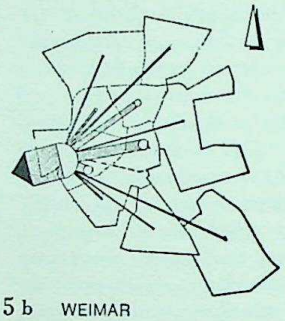

1 TURIN

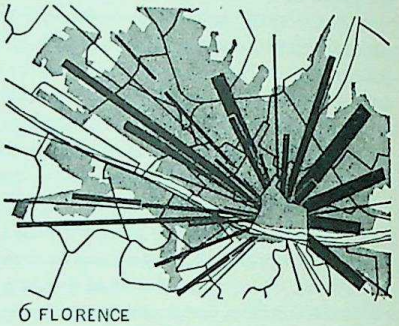

2 PARIS

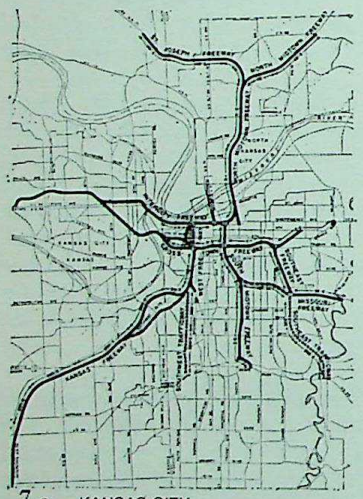

3 PARIS

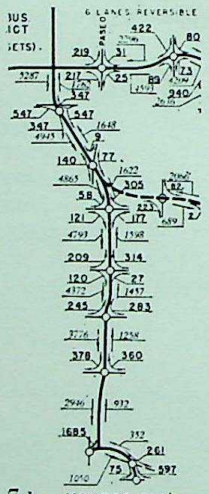

4 WEIMAR


5 a WEIMAR

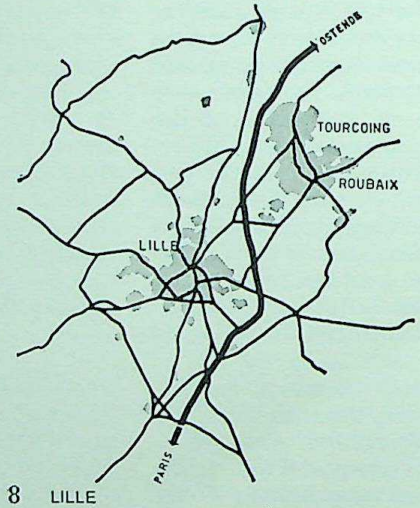

5 b WEIMAR


6 FLORENCE

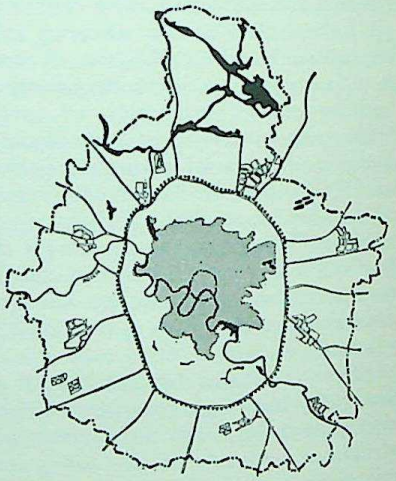

7 a KANSAS CITY

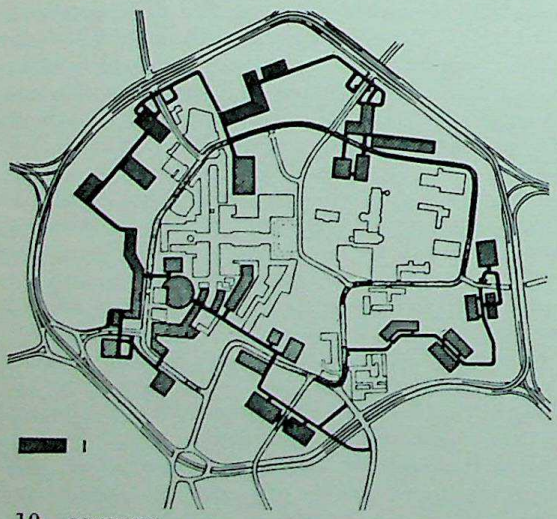


7 b KANSAS CITY

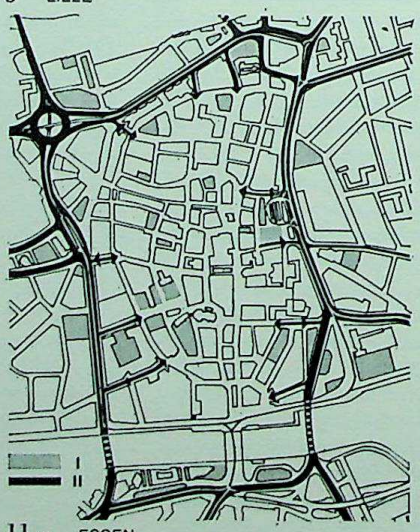


8 LILLE

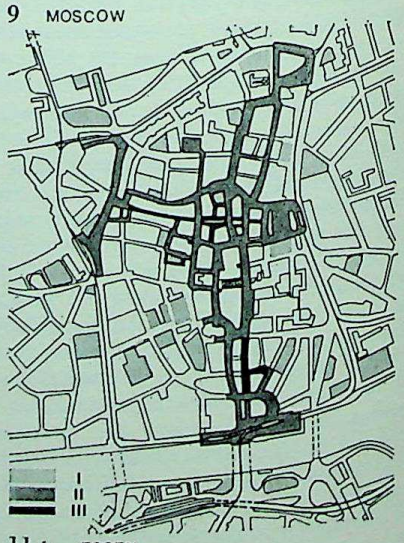

9 MOSCOW



10 COVENTRY



11 a ESSEN



11 b ESSEN

Traffic: (1) Turin, daily pendular movement of the Fiat workers, 1960; (2) Paris, flow diagram of circulation, 1960; (3) Paris, isochronous curves, 1963, transportation time in minutes from Stock Exchange to various points of the agglomeration; (4) Weimar, flow on the western thoroughfare, 1958; (5*a*, 5*b*) Weimar, origin-and-destination survey of traffic in one section of the city, 1958; (6) Florence, origin-and-destination survey of traffic. Kansas City, Mo.: (7*a*) Plan of the urban freeway, 1950; (7*b*) traffic volume on freeway ramps predicted for 1970. (8) Lille, central artery and heavy traffic network of the Lille-Roubaix-Tourcoing conurbation, 1958; (9) Moscow, concentric-ring system, 1958; (10) Coventry, road systems and parking lots, 1961. *Key*: (I) parking lots. Essen, organization of traffic in center of city, 1956: (11*a*) Automobile traffic. *Key*: (I) parking lots; (II) tangential vehicular routes. (11*b*) Pedestrian traffic. *Key*: (I) parking lots; (II) shopping streets; (III) pedestrian paths.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

industrial field in France (1950) and Belgium (1962); the English policy has also inspired, if only formally and therefore inefficaciously, the policy of industrialization in southern Italy since 1959.

The English policy for economic development in areas with unemployment or in danger of unemployment is based on a substantial series of legislative measures, such as the Special Areas Development and Improvement Act of 1934 and its later supplements, as well as the Distribution of Industry Acts of 1945, 1950, and 1958. The policy is firmly interpenetrated with urban planning, so that every installation in the master plan of industrial locations with a land coverage greater than 5,000 sq. ft. must be authorized by the Board of Trade. Since 1934 the policy has functioned in an area equal to 8.8 per cent of the territory of Great Britain and has affected about 18 per cent of the population. As a result, many equipped industrial zones have been established, and industrial nuclei with works built at state expense have been rented out. The industrial zones consist of trading or industrial estates, among them the famous 700-acre Team Valley Estate (PL. 179), designed by the architect William Holford, which was founded in 1936 at Gateshead, across the river from Newcastle upon Tyne. The English policy has shown itself to be by far the most effective incentive for attracting industries to specific regions, according to Alix Meynell, former Undersecretary of the Board of Trade (*Location of Industry*, London, 1959).

This method of industrial incentive toward economic development is an effective instrument for establishing good working conditions in an esthetic and psychologically acceptable environment and for substantially modifying the industrial landscape. The trend has also been followed in other countries, such as Germany and France. In the United States this trend experienced special and significant progress during the early 1960s with the decentralization of individual industrial works and the concentration of groups of related industries in vast and well-organized industrial parks; these are conveniently located with respect to the highways and are linked together in a territorial framework. The most notable example of this development is the chain of industrial parks around Boston on Route 128, including the New England Industrial Center, the Waltham Research and Development Park, and the Waltham Industrial Center (PL. 179). It constitutes the embryo of a new territorial organization of high quality, with working areas located on particularly pleasant sites and articulated with large expressway networks.

In Italy the Olivetti complexes at Ivrea (PL. 179) and Pozzuoli are commendable from the point of view of spatial organization and public facilities. The development of specialized industrial zones such as those of Marghera, however, continues according to antiquated criteria of mere grouping within a region, while the large majority of industrial complexes in the development areas has continued to decentralize and reconcentrate with no attempt at rationalization. In the south of Italy, apart from instances of direct state intervention (e.g., large iron and steel works of Italsider in Taranto) or rare cases of excellent establishments built by private groups, attempts to create planned industrial complexes have produced negative results, especially from the point of view of urban planning and regional organization. The will to plan, to control, and to coordinate was lacking. The most disappointing evidence of this was the inability to begin work on the plan for development of the industrial area of Taranto (1962). This was the first plan to be prepared within the framework of the 1959 law on industrialization, and it had the benefit of favorable conditions such as a huge reserve of land at very low cost and the motivation provided by the presence of a powerful industry. It becomes evident from these data that the planning of industrial establishments holds great interest and contains definite advantages for those countries which can turn to account the evolutionary possibilities for determining the character and localization of industrial complexes.

e. Public recreation facilities. New urban living habits arising in part from the rhythm of the short work week and annual vacations have since 1945 gradually augmented the demand for public recreational facilities. This is expressed in increased hotel vacation facilities, sometimes in the possession of two residences, and in a growing need in the urban areas for parks, promenades, and mass sport and recreational establishments. This demand results in large extensions of urban areas and structurally modifies the living environment so as to require preventive planning and suitable financial and administrative measures. In this respect, too, Amsterdam preceded other cities. In 1929 Amsterdam planned a large artificial wood, the Amsterdamse Bos (executed 1931–40), situated south of the city and extending over 1,400 acres. In Vienna an imposing network of public facilities was constructed for popular culture and diversion. In the 1950s Hamburg set aside two long strips of green space along the banks of the Alster and Elbe rivers for pedestrian promenades, each 12 mi. long. Also Moscow has an equipped recreational area of more than 12,000 acres in the northwestern section of the city. Within its own municipal territory Stockholm owns more than 14,800 acres of land (i.e., one-third of the whole) permanently zoned for parks, natural reserves, and sport facilities; the sport facilities alone cover 1,000 acres, equal to 53 sq. ft. per inhabitant. Outside the administrative limits of the city, Stockholm owns an additional 39,500 acres of woods intended for recreation (about 2,100 sq. ft. per inhabitant). In 1965 the city of Oslo owned some 480 sq. ft. of land per inhabitant equipped for sports, excluding wooded land and promenades. Compared with these cities, Genoa with its 16 sq. ft. of public green space per inhabitant, and Rome and Milan with 21 sq. ft. per inhabitant, offer very modest recreational facilities. After establishing city parks in the 19th century and the beginning of the 20th, Italy did nothing more in this field.

In addition to the more strictly urban requirements for public recreation, there are various needs on a regional and national level, including public facilities in natural parks and tourist areas in attractive landscape surroundings. Here, too, there are excellent examples. Denmark zoned its entire national territory in 1962, reserving 43 per cent of the total area of the country (i.e., 7,300 sq. mi.) for national parks, promenades, recreational areas, and summer residences. In Holland, where available land is scarce, prudent territorial plans specify in detail the particular features to be protected: interesting landscape areas, boundaries, paths, canals, and certain rural areas. Whatever could be salvaged for recreation and leisure was set aside within the manmade and essentially utilitarian landscape. In England there are some 7,000 sq. mi. of national parks, equal to one-eighth the total area of England and Wales. Almost as much area of restricted green belts has been established for the protection of the principal metropolitan areas.

Undoubtedly the improvement of the Mediterranean coastal areas and the Alpine mountain regions, owing to the tourist industry, occurred in extremely difficult evironmental conditions. Perhaps in no other European country has there been such irreparable destruction of landscape through a lack of self-discipline as in Italy. Among the rare exceptions, which are therefore even more laudable, is the vacation village of Eni at Borca di Cadore (architect Eduardo Gellner, 1958). The recovery of what can still be salvaged has become a necessary way of making amends. There have been some initial steps in this direction. The 1963 economic development plan for Umbria, for example, includes a proposal to use the smaller medieval complexes, otherwise destined to complete neglect, as public facilities for recreation.

The problem of public facilities for recreation is also a collective and spatial problem, and it therefore concerns town planning. The solution can come only through active intervention and, in certain cases, through vigorous forms of control proportionate to collective incapacity for self-discipline.

Plans for the future. From this review of the main problems relative to the basic elements of the urban complex, and from the references to recent situations and tendencies in planning and performance, there emerges the strong necessity for an over-all view of the problems, without which it is impossible

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

to attain a balanced and unified solution. Possible choices for urban development are obviously related to traffic solutions, to decisions concerning the central cities and renewal of the preexisting urban fabric, and to the policy of spatial distribution of industrial complexes. What is most important for comprehensive economic and social efficiency, in an urban complex as well as in a territorial context, is the interrelationship between the structural elements of the whole. Each of the elements comes into play in terms of quantity and quality as the functionalists predicted; but primarily their actual spatial distributions become apparent in the numerous possible combinations, as well as in the ways these combinations affect the structural and consequent human interrelationships.

Today the question of static and crystallized socioeconomic phenomena, as in the preindustrial agricultural economies, is no longer pertinent. The balance between the preindustrial population and its resources could be easily reached and maintained or, if necessary, adjusted to various levels of evolution in techniques. The relative regional and local urban structure could therefore remain unaltered for long periods or be modified from time to time in successive leaps. Contemporary socioeconomic and urban phenomena, however, are essentially dynamic and fluid. The attainment or maintenance of a degree of satisfactory coherence can be guaranteed only by the most balanced and continuous development possible. This development must be consistent with the potentialities of the existing establishment, when at best the urban complex has already attained an intrinsic efficiency and balance and contains adequate reserves for the requirements of expansion; or it must be obtained by means of the maximum use of selected endogenous energies, with the stimulation of initiatives that are weak or latent but concurrent with the process of development and/or with the preventive limitation of forces that are superabundant or distorting; or it must be obtained by means of direct intervention for the timely grafting of exogenous solutions. The integrity of the territorial base demands an integrated master plan capable of guaranteeing the attainment of an efficient and balanced state and the continuity of balanced development. The fragmentation of the comprehensive plan into local plans or plans for various administrative levels may be useful for operational purposes, but it can have no value other than an instrumental one. However, by starting from a series of local and functional plans conceived individually and in terms of special interests, it is almost impossible to compose a unified plan that is homogeneous and coherent merely through successive amalgamations or coordination of the separate plans. Serious recomposition requires a long, repetitive process of compromise that permits the gradual elimination of internal contradictions between sectors. In order to carry out this process, however, the laws of internal coherence must be formulated beforehand and the target of the plan must already be developed, so that such laws can be applied to it.

The attempt to realize a master plan through a mosaic of local and functional plans (by juxtaposition, coordination, and verification of internal coherence) may constitute the first stage of a conceptual approach to master planning through an integration of parts and a rationalization of the system. In this first stage the major internal incompatibilities would be eliminated and the functionality of the system itself would increase. Some attempts have been made in this direction on a territorial level — for example, in the case of municipal plans that call for coordination under regional plans for communications and industrial complexes. Experience shows, however, that these attempts generally lead to failure owing to the lack of a common denominator (i.e., general principles and point of view) and to the lack of integration between possible technical solutions and economic realities. The master plan at the city level has long been recognized and applied as an instrument for the integration of various neighborhood and institutional plans (e.g., plans for capital improvement, location of industry, transportation, recreation, redevelopment of the central city or slum areas) and as an over-all scheme to compose the various local problems within a unity; similarly, on the territorial, regional, or supercommunal level, the need for a coherent, integrated master plan is gradually being recognized and applied. In other words, the step that town planning is taking everywhere and on all levels is from planning of a functional type (simple rationalization of the system) to planning of an organic type. This is the second and decisive stage, in which planning aims at systematically organizing or reorganizing structures and their functioning. At this stage the plan is submitted as an over-all creative scheme equipped with a central principle; its coherent development guarantees the internal compatibility between the parts and the compatibility of the parts with the whole. The plan at this stage is necessarily one and continuous and can only be expressed in operative terms — that of presiding over city planning and socioeconomic and urban development, of which it represents the conscious structural form.

In the formulation of a plan, from the technical, administrative, and economic points of view, it is therefore necessary to determine from the start what type of plan is to be specified: an organic structural plan, a strictly functional plan, or a plan with built-in indefiniteness that may be equally poor in ideas and operative force. This last type characterized the failure of town planning in the 1950s in certain countries. The specification is indispensable because different techniques and methodologies and different technical-juridical instruments of execution correspond to the various plans; it is, after all, the instruments that must be subordinated to the ends. To establish unattainable goals with inadequate instruments is certainly foolish and inefficient; but to fail to adopt appropriate methodologies, technical and financial means, and juridical instruments is equally absurd.

The conceptual and operative progress toward the goal of organic structural planning, which appears to be the only rational means toward a stable solution of the problems posed by contemporary civilization, is therefore conditioned by parallel and coherent progress in economic planning and in the juridical and administrative sphere. Mistakes are paid for dearly; they signify defeat and annulment even in the case of plans magnificently conceived by notable planners.

Adaptation of means to ends is therefore the primary condition for the practicability of a plan. The second condition is multiple authorship, since a plan, whether it proposes functional rationalization or structural reorganization, can no longer be a single work based on an individual conception, even though that conception results from unusual intuitive gifts. The intuitive method adopted in the personal formation of plans conceived as single works was the first answer to the need for integrated plans; this yielded some valuable results, but they precluded experimental *ex ante* verification. The new methods of comparison between alternative solutions, however, did not exclude the intuitive method of conceiving a unified spatial solution. On the contrary, starting precisely from the latter method in the form of over-all schemes, objective comparison between various schematic spatial solutions became possible with the new methods; the verification of these solutions and their optimum use in economic terms also became possible with all available scientific instruments. This comparison could be made before the definitive and detailed elaboration of the general operative plan. With this methodological integration of intuition and verification, error and inconsistent choices diminish, and the plan itself is rendered efficient as it grows. It becomes less a magnificent vision than a scheme of creative reasoning for the solution most suitable to reality.

If this perspective is not conceptually mistaken, plans thus formulated should be equally immune to presumptuous improvisations, discretionary choices, the tyranny of specialist techniques, and the temptations of escapist utopias that appear from time to time. The plans would provide for all — planners, politicians, and citizens — a common base of reasoning from which choices could be justly and democratically made. The plans would also provide a point of reference from which results could be evaluated and corrections could be made in subsequent short- and long-term programs. They would then become, as they already have in some countries, a serious, prudent, slow, but continuous work of creation and verification, conducted without excessive pessimism or optimism, but with steady conviction.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Giuseppe Samonà speculated on the development of urban planning when, at the height of anxiety and hope, he wrote (1959): "Men and structures, cities and regions, all involved in a development of events that are still obscure but full to the brim with a vitality unknown before, are thus trapped by a technique that, having overstepped its instrumental limits, tends to penetrate all values and impose itself as a form of defense against the explosive events that henceforth dominate the life of all peoples."

Town planning, the science of the future, is engaged in all latitudes and political regimes in preparing creatively and consciously the conditions of life for the future, foreseeing the scope, structure, and form of urbanization; thus it aspires to be recognized as the collective art par excellence. Its success will depend upon the extent to which it becomes a primary pursuit in community living.

BIBLIOG. *General*: *a. Nineteenth-century utopians, reformers, and technicians*: T. Spence, Description of Spensonia, London, 1795; F. M. C. Fourier, Théorie des quatre mouvements, Lyons, 1808; R. Owen, Report to the County of Lanark, Glasgow, 1821; C. Saint-Simon, Nouveau Christianisme, Paris, 1825; F. M. C. Fourier, Le nouveau monde industriel et sociétaire, Paris, 1829; E. Cabet, Voyage et aventures de Lord William Carisdale en Icarie, Paris, 1840; J. Buckingham, National Evils and Practical Remedies, with the Plan of a Model Town, London, 1849; R. Owen, The Revolution in the Mind and Practice, London, 1849; I. Cerdá, Teoría general de la urbanización, Madrid, 1867; E. Bellamy, Looking Backward 2000–1887, Boston, 1888; C. Sitte, Der Städtebau nach seinen kunstlerischen Grundsätzen, Vienna, 1889 (Eng. trans., G. R. and C. C. Collins, City Planning According to Artistic Principles, London, New York, 1965); J. Stübben, Der Städtebau, Darmstadt, 1890; E. Howard, To-morrow: A Peaceful Path to Real Reform, London, 1898. *b. Twentieth-century treatises*: P. Geddes, City Development, Edinburgh, 1904; H. G. Wells, A Modern Utopia, London, 1905; R. Unwin, Town Planning in Practice, London, 1909; C. B. Purdom, The Garden City, London, 1913; P. Geddes, Cities in Evolution, London, 1915; T. Garnier, Une cité industrielle, Paris, 1918; G. B. Ford, L'urbanisme en pratique, Paris, 1920; L. Mumford, The Story of Utopias, New York, 1922; L. Hilberseimer, Groszstadt Architektur, Stuttgart, 1927; Le Corbusier, Urbanisme, Paris, 1927; A. A. Rey, J. Pidoux, and C. Barde, La science des plans de villes, Lausanne, 1928; C. A. Perry, The Neighborhood Unit: A Scheme of Arrangement for the Family-life Community, Regional Survey of New York, VII, 1929, pp. 22–140; Cong. int. d'arch. mod. (CIAM), Rationelle Bebauungsweisen, Frankfurt, 1931; F. L. Wright, The Disappearing City, New York, 1932; P. Abercrombie, Town and Country Planning, London, 1933 (3d rev. ed., D. Rigby Childs, London, Oxford, 1959); A. Toynbee, A Study of History, London, 1934; Le Corbusier, La ville radieuse, Boulogne, 1935 (new. ed., Paris, 1964); E. M. Bassett, Zoning, New York, 1936 (new ed., New York, 1940); P. Bottoni, Urbanistica, Milan, 1938; L. Mumford, The Culture of Cities, New York, 1938; G. Feder, Die Neue Stadt, Berlin, 1939; Le Corbusier, Le lyrisme des temps nouveaux et l'urbanisme, Strasbourg, 1939; S. Giedion, Space, Time and Architecture, Cambridge, 1941 (4th ed., Cambridge, Mass., 1964); E. A. Gutkind, Creative Demobilisation, London, 1943; L. Hilberseimer, The New City: Principles of Planning, Chicago, 1944; G. Bardet, Pierre sur pierre, Paris, 1945; J. Lebreton, La cité naturelle, Paris, 1945; Le Corbusier, Les trois établissements humains, Paris, 1945; L. Mumford, City Development, New York, 1945; H. Bernoulli, Die Stadt und ihr Boden, Zurich, 1946; E. A. Gutkind, Revolution of Environment, London, 1946; Le Corbusier, Manière de penser l'urbanisme, Paris, 1946 (rev. ed., Geneva, 1963); F. J. Osborn, Greenbelt Cities, London, 1946; G. Alomar Esteve, Teoría de la ciudad, Madrid, 1947; R. Auzelle, Encyclopédie de l'urbanisme, Paris, 1947–1963; G. Bardet, L'urbanisme, Paris, 1947; L. Piccinato, Urbanistica, Rome, 1947; M. F. Rouge, La géonomie, ou l'organisation de l'espace, Paris, 1947; H. M. Wright, The Planner's Notebook, London, 1948; G. H. J. Daysh, Studies in Regional Planning, London, 1949; Association for Planning and Regional Reconstruction, Town and Country Planning Textbook, London, 1950; G. Bardet, Mission de l'urbanisme, Paris, 1950; A. J. Brown and H. M. Sherrard, Town and Country Planning, Carlton, Australia, 1951; C. S. Stein, Toward New Towns for America, Chicago, 1951 (rev. ed., New York, 1957); E. A. Gutkind, Our World from the Air, London, Garden City, N. Y., 1952; L. Keeble, Principles and Practice of Town and Country Planning, London, 1952 (2d ed., London, 1961); L. J. Lebret, Guide pratique de l'enquête sociale, 4 vols., Paris, 1952–58; G. Logie, Industry in Towns, London, 1952; J. Tyrwhitt, ed., The Heart of the City, London, 1952; F. Gibberd, Town Design, New York, 1953 (3d ed., New York, 1960; 4th ed., London, 1962); Ministero dei Lavori Pubblici, I piani pubblici, Rome, 1953; M. F. Parkins, City Planning in Soviet Russia, Chicago, 1953; A. Glikson, Regional Planning and Development, London, 1955; C. Aronovici, Community Building: Science, Technique, Art, Garden City, 1956; L. Mumford, The Transformations of Man, New York, 1956; L. Rodwin, The British New Towns Policy, Cambridge, Mass., 1956; H. B. Reichow, Die autogerechte Stadt, Ravensburg, 1959; G. Samonà, L'urbanistica e l'avvenire della città negli stati europei, Bari, 1959; R. Vernon, Metropolis 1985, Cambridge, Mass., 1960; J. Jacobs, The Death and Life of Great American Cities, New York, 1961; P. P. Le Breton and D. A. Henning, Planning Theory, Englewood Cliffs, N. J., 1961; L. Mumford, The City in History, New York, 1961; Town Planning Inst., Planning Research, London, 1961 (2d ed., 1965); A. Gutton, Conversations sur l'architecture, IV, L'urbanisme au service de l'homme, Paris, 1962; J. H. Dunning, Economic Planning and Town Expansion, Southampton, 1963; B. McKelvey, The Urbanization of America, 1860–1915, New Brunswick, 1963; F. J. Osborn, The New Towns. London, 1963; R. Auzelle, 323 citations sur l'urbanisme, Paris, 1964; A. Altshuler, The City Planning Process, Ithaca, 1965; P. D. Spreiregen, Urban Design: The Architecture of Towns and Cities, New York, 1965.

History of the city and urbanization: *a. General*: P. Lavedan, Histoire de l'urbanisme, Paris, 1926 (new ed., Paris, 1952); J. Gantner, Grundformen der Europäischen Stadt, Vienna, 1928; M. Poëte, Introduction à l'urbanisme: L'evolution des villes, la leçon de l'antiquité, Paris, 1929; W. Braunfels, Mittelalterliche Stadtbaukunst in der Toskana, Berlin, 1953 (2d ed., Berlin, 1959); A. Korn, History Builds the Town, London, 1953; F. R. Hiorns, Town-building in History, London, 1956; E. Egli, Geschichte des Städtebaues, Zurich, 1959–62; P. Dijkema, Innen und aussen, Hilversum, 1960; P. Lavedan, Les villes françaises, Paris, 1960; E. Sereni, Storia del paesaggio agrario italiano, Bari, 1961; M. Morini, Atlante di storia dell'urbanistica, Milan, 1963; W. Schneider, Babylon Is Everywhere, New York, 1963; E. A. Gutkind, International History of City Development, I, Urban Development in Central Europe, London, Glencoe, Ill., 1964; E. A. Gutkind, International History of City Development, II, Urban Development in the Alpine and Scandinavian Countries, London, Glencoe, Ill., 1965; J. W. Reps, The Making of Urban America, Princeton, 1965. *b. The ancient world*: N. D. Fustel de Coulanges, La cité antique, Paris, 1866 (Eng. trans., Garden City, N. Y., 1956); A. Zimmern, The Greek Commonwealth, Oxford, 1911 (new ed., New York, 1961); A. von Gerkan, Griechische Städteanlagen, Berlin, 1924; V. G. Childe, Man Makes Himself, London, 1936 (4th ed., London, 1965); M. Brion, La résurrection des villes mortes, Paris, 1937–38 (Eng. trans., M. and L. Kochan, The World of Archaeology, New York, 1962); K. A. Doxiadis, Raumordnung im Griechischen Städtebau, Berlin, 1937; L. Quaroni, L'architettura della città, Rome, 1939; G. Glotz, La città greca, Turin, 1948; R. E. Wycherley, How the Greeks Built Cities, London, 1949; V. G. Childe, The Urban Revolution, Town Planning Rev., XXI, 1, Apr., 1950, pp. 3–17; H. Frankfort, Town Planning in Ancient Mesopotamia, Town Planning Rev., XXI, 2, July, 1950, pp. 99–115; L. Homo, Rome impériale et l'urbanisme dans l'antiquité, Paris, 1951; R. W. Hutchinson, Prehistoric Town-planning in and around the Aegean, Town Planning Rev., XXIII, 4, Jan., 1953, pp. 261–79, XXIV, 1, Apr., 1953, pp. 5–21; W. F. Albright, The Archeology of Palestine, London, Baltimore, 1954 (rev. ed., Harmondsworth, 1956); P. Grimal, Les villes romaines, Paris, 1954; E. Sereni, Comunità rurali nell'Italia antica, Rome, 1955; J. B. Ward Perkins, Early Roman Towns in Italy, Town Planning Rev., XXVI, 3, Jan., 1955, pp. 126–54; R. d'Ambrosio, Alle origini della città, Naples, 1956; R. Martin, L'urbanisme dans la Grèce ancienne, Paris, 1956; M. Pallottini, Introduzione all'urbanistica, Rome, 1963; J. C. Moughtin, The Traditional Settlements of the Hansa People, Town Planning Rev., XXXV, 1, Apr., 1964, pp. 21–34; G. Schmiedt, Contributo della foto-interpretazione alla ricostruzione della situazione geografica topografica degli insideamenti antichi scomparsi in Italia, L'Universo, XLIV, 6, 1964; R. Chevalier, Photographie aérienne, Paris, 1965. *c. The medieval city*: J. Huizinga, The Waning of the Middle Ages, London, 1924; T. F. Tout, Mediaeval Town Planning, Manchester, 1934; H. Pirenne, Medieval Cities, Princeton, 1939; L. Piccinato, Urbanistica medievale, Florence, 1943; R. Pernoud, Les villes marchandes au XVIe et XVe siècle, Paris, 1948; M. Pallottini, Profili di storia dell'urbanistica, I, Rome, 1951; E. Ennen, Frühgeschichte der Europäischen Stadt, Bonn, 1953; M. Weber, The City, New York, 1962; H. Boesch and P. Hofer, Flugbild der Schweizer Stadt, Bern, 1963; E. Herzog, Die Ottonischen Stadt, Berlin, 1964. *d. The Renaissance, baroque, and modern city*: E. Chadwick, Report on the Sanitary Conditions of the Labouring Population of Great Britain, London, 1843; F. Engels, Die Lage der arbeitenden Klassen in England, Leipzig, 1845 (Eng. trans., W. O. Henderson and W. H. Chaloner, The Conditions of the Working Class in England, Oxford, 1955); J. C. Burckhardt, La civiltà del Rinascimento in Italia, Florence, 1876 (Eng. trans., S. G. C. Middlemore, The Civilization of the Renaissance in Italy, 2 vols., New York, 1958); S. E. Rasmussen, London, the Unique City, New York, 1937; S. Giedion, Space, Time and Architecture, London, 1941 (4th. ed., Cambridge, Mass., 1962); H. S. Churchill, The City Is the People, New York, 1945; G. Bardet, Naissance et méconaissance de l'urbanisme, Paris, 1951; E. Sisi, L'urbanistica negli studi di Leonardo da Vinci, Florence, 1953; L. Quaroni, Una città eterna: quattro lezioni da 27 secoli, Urbanistica, XXVII, June, 1959, pp. 6–73; B. Zevi, Biagio Rossetti, Turin, 1960; L. Benevolo, Le origini dell'urbanistica moderna, Bari, 1963; F. J. Olsen, Town Planning in London: The Eighteenth and Nineteenth Centuries, London, New Haven, 1964; A. Rigillo, La città e la cultura urbanistica del '700, Naples, 1964.

Demography and urban geography: A. F. Weber, The Growth of Cities in the Nineteenth Century, New York, 1899 (new ed., Ithaca, N. Y., 1963); F. Ratzel, Die geographische Lage der grossen Städte, Dresden, 1903; J. Brunhes and P. Deffontaines, La géographie humaine, Paris, 1920; A. Weber, The Theory of the Location of Industries, Chicago, 1929; W. Christaller, Die zentralen Orte in Süddeutschland, Jena, 1933 (Eng. trans., C. W. Baskin, Englewood Cliffs, N. J., 1966); P. Lavedan, Géographie des villes, Paris, 1936; A. Lösch, Die räumliche Ordnung der Wirtschaft, Jena, 1944 (Eng. trans., W. H. Woglom, The Economics of Location, New Haven, 1954); G. Taylor, Urban Geography, New York, 1946; R. E. Dickinson, City, Region, and Regionalism, New York, 1947; P. Fromont, Démographie économique, Paris, 1947; U. Toschi, Geografia urbana, Florence, 1947; M. Salinari, Bibliografia degli scritti di geografia urbana, Rome, 1948; A. Landry, Traité de démographie, 2d ed., Paris, 1949; E. Egli, Die neue Stadt in Landschaft und Klima, Zurich, 1951; P. George, La ville: Le fait urbain à travers le monde, Paris, 1952; A. Sauvy, Théorie générale de la population, Paris, 1952–54 (3d rev. ed., Paris, 1963); J. Tricart, Cours de géographie humaine, II: L'habitat urbain, Paris, 1952; A. E. Smailes, The Geography of Towns, London, 1953; R. H. Lee, The City: Urbanism and Urbanization in Major World Regions, Philadelphia, 1955; J. M. Casas Torres, Ciudades, urbanismo y geografía, Madrid, 1957; E. Egli, Flugbild Europas, Zurich, 1958 (Eng. trans., Europe from the Air, New York, 1960); P. La-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

vedan, Les villes françaises, Paris, 1960; J. Gottman, Megalopolis, New York, 1961; C. A. Moser and W. Scott, British Towns, a Statistical Study of Their Social and Economic Difference, Edinburgh, London, 1961; R. Pressat, L'analyse démographique, Paris, 1961; G. Chabot and J. Beaujeu-Garnier, Traité de géographie urbaine, Paris, 1963.

Urban sociology: E. Durkheim, De la division du travail social, Paris, 1893 (Eng. trans., G. Simpson, Glencoe, Ill., 1949); G. Simmel, Die Grossstädte und das Geistesleben, Dresden, 1903; M. Mauss, Division et proportion des division de la sociologie, L'Année Sociologique, 1924–25; M. Halbwachs, Morphologie sociale, Paris, 1938 (Eng. trans., O. D. Duncan, Glencoe, Ill., 1960); H. Pirenne, Les villes et les institutions urbaines, Paris, 1939; H. Decugis and A. Lebreton, Urbanisation et désurbanisation, Paris, 1945; M. Sorre, Les fondements de la géographie humaine, Paris, 1948–51; L. Chevalier, La formation de la population Parisienne au XIXe siècle, Paris, 1950; G. Gurvitch, La vocation actuelle de la sociologie, Paris, 1950 (2d ed., Paris, 1963); B. Hackett, Man, Society, and Environment, London, 1950; M. Halbwachs, La mémoire collective, Paris, 1950; E. Pfeil, Grossstadtforschung, Bremen, 1950; T. L. Smith, The Sociology of Urban Life, New York, 1951; E. Callot, La societé et son environment, Paris, 1952; P. Chombart de Lauwe, Paris et l'agglomeration Parisienne, Paris, 1952; R. E. Park, Human Communities: The City and Human Ecology, Glencoe, Ill., 1952; M. Quoist, La ville et l'homme, Paris, 1952; J. L. Moreno, Who Shall Survive?, New York, 1953 (rev. ed.); S. A. Queen and D. B. Carpenter, The American City, New York, 1953; S. Szabo, L'étude de la société humaine, synthèse des recherches, Louvain, 1953; E. G. Ericksen, Urban Behavior, New York, 1954; M. Sorre, Rencontres de la géographie et de la sociologie, Paris, 1958; G. Paulsson, The Study of Cities, Copenhagen, 1959; A. Pizzorno, Comunità e Razionalizzazione, Turin, 1960; W. W. Rostow, The Stages of Economic Growth, Cambridge, 1960; G. Alomar Esteve, Sociología urbanística, Madrid, 1961; A. Pizzorno, Sviluppo economico e urbanizzazione, Quaderni di Sociologia, XI, 1, Jan.–Mar., 1962, pp. 21–51.

Analyses of urban space: F. Gibberd, Town Design, New York, 1953 (4th rev. and enl. ed., London, 1962); K. Lynch, The Image of the City, Cambridge, Mass., 1960; G. Cullen, Townscape, New York, London, 1961; J. O. Simonds, Landscape Architecture, New York, 1961; K. Lynch, Site Planning, Cambridge, Mass., 1962; I. de Wolfe, The Italian Townscape, London, 1963; J. Nairn, The American Landscape, London, 1965.

Conservation of historic centers: Salvaguardia e risanamento dei centri storici, Atti del Convegno di Gubbio, Turin, 1960; J. Hruza and O. Novy, Centri storici in Cecoslovacchia, Urbanistica, XXXI, 1960, pp. 17–52; W. Ostrowski, I centri storici al Convegno di Santiago de Compostela, Urbanistica, XXXV, 1962, pp. 39–58; A. B. Wolfe, Conservation of Historical Buildings and Areas: Legal Techniques, Chicago, 1963.

Urban traffic: K. K. Liepmann, The Journey to Work, New York, 1944; H. B. Reichow, Organische Baukunst, Brunswick, 1949; G. Baker and B. Funaro, Shopping Centers, New York, 1951; Kansas City, Mo., Plan Commission, Espressways, Greater Kansas City, Kansas City, 1951; G. Logie, Industry in Towns, London, 1952; R. Humbert, Problêmes de circulation dans les centres urbains, Techniques et Architecture, XIV, 3–4, 1954, pp. 40–74; G. Logie, The Urban Scene, London, 1954; R. B. Mitchell and C. Rapkin, Urban Traffic, a Function of Land Use, New York, 1954; T. M. Matson, W. S. Smith, and F. W. Hurd, Traffic Engineering, New York, 1956; C. W. Troedson, The City, the Automobile and Man, Los Angeles, 1957; Chicago Area Transportation Study, Final Report, Chicago, 1959–62; H. B. Reichow, Die autogerechte Stadt, Ravensburg, 1959; R. C. Wood, Suburbia: Its People and Their Politics, Boston, 1959; R. Humbert, Conduite et Circulation, Paris, 1960; G. Jellicoe, Motopia, London, New York, 1961; J. H. Jones, The Geometric Design of Modern Highways, London, New York, 1961; W. Smith and Associates, Future Highways and Urban Growth, New Haven, 1961; A. Day, Roads, London, 1963; Ministry of Transport, Traffic in Towns: A Study of the Long-Term Problems of Traffic in Urban Areas, London, 1963; P. Ritter, Planning for Man and Motor, Oxford, New York, 1964; J. Tetlow, and A. Goss, Homes, Towns, and Traffic, London, 1965.

Periodicals: *a. Italy*: Casabella, Milan; L'architettura, Cronache e Storia, Rome; Urbanistica, Turin; Zodiac, Milan. *b. France*: L'architecture d'aujourd'hui, Boulogne; Urbanisme, Paris; Techniques et Architecture, Paris; La Vie Urbaine, Paris. *c. England*: Housing Review, London; Planning Outlook, Liverpool; Town Planning Review, Liverpool; Architectural Review, London; Journal of the Town Planning Institute, London; Town and Country Planning, London. *d. Sweden*: Plan, Stockholm. *e. Switzerland*: Plan, Zurich. *f. United States of America*: Architectural Forum, New York; Architectural Record, New York; Journal of the American Institute of Planners, Baltimore; Progressive Architecture, New York.

Giovanni Astengo

Individual elements of the figures illustrating this article have been adapted from various sources, including: (Ancient centers) Geddes, 1915; Simonds, 1961; T. Zagrodski, *Regularny plan miasta Średniowiecznego a limitacja miernicza*, Warsaw, 1962; Morini, 1963; Pallottini, 1963; Boesch and Hofer, 1963; (Medieval, Renaissance, and baroque centers) B. Bordone, *Isolario*, Venice, 1534–37; P. Bolognese, *Lo stato presente di tutti i paesi e populi del mondo naturale, politico e morale*, XVI (on France), 1748; Gutkind, 1946; Gibberd, 1953; Korn, 1953; Lavedan, 1960; Gutton, 1962; Benevolo, 1963; De Wolfe, 1963; Herzog, 1964; H. Simon, *Das Herz unserer Städte*, Essen, 1964; (City development) E. Rams, *Principles of City Land Values*, Worthington, Ohio, 1964; P. Abercrombie, *Greater London Plan*, London, 1944–45; *West Midland Group Conurbation*, London, 1948; *Ufficio studi piano intercomunale torinese*, Turin, 1953; (The ideal city) Stübben, Leipzig, 1924; Mumford, 1938; Le Corbusier, 1946; L. Hilberseimer, *The New Regional Pattern*, 1949; D. Andriello, *Howard e dell'Utopia*, Naples 1964; (Regional plans) H. Bruckmann and D. L. Lewis, *Esempi di pianificazione in Inghilterra*, Milan, 1962; Planning Commission of the City of Stockholm, *Stockholm Regional City Planning*, 1964; (Residential areas) Gibberd, 1953; UIA, *Construction et reconstruction des villes*, Moscow, 1958; Dijkema, 1960; K. Gustehow, *Living*, Venice, 1962; J. Stvan, *Probemy perspektivni preštavby naših meśt*, Prague, 1962; Osborn, 1963; (Urban renewal) Stübben, 1924; R. Bacht, *Deutscher Städtebau nach 1945*, Essen, 1961; Gutton, 1962; (Traffic) Kansas City, Mo., Plan Commission, 1951; Stvan, 1962; W. Christfreund, *Verkehrsuntersuchung und Planung*, Leipzig, 1964; P. Gaber, *Turin, ville industrielle*, Paris, 1964; Ritter, 1964; and periodicals: *Arch. d'aujourd'hui*; *Archiv für Kommunalwissenschaften*; *Archivio urbanistica*; *Bergamo 8 anni*, 1964; *Das neue Frankfurt*; *Housing Rev.*; *Stedebouw and Volkshuisvesting*; *Techniques et arch.*; *Topographica*, 1962; *Europas Städte*; *Town and Country Planning*; *Town Planning Rev.*; *Urbanistica*; and *Zodiac*.

Illustrations: PLS. 125–180; 13 figs. in text.

TOYS. See GAMES AND TOYS; PUPPETS, MARIONETTES, AND DOLLS.

TRAGEDY AND THE SUBLIME. Certain aspects of reality or fantasy, or events and figures that transcend the normal or the rational, provoke a strong and more or less instinctive emotional reaction that, together with its critical evaluation, constitutes that particular esthetic experience which is usually defined as "sublime." According to modern theorists of the sublime this experience is based, above all, on the ambivalence of the sense of attraction and repulsion and thus differs from, when it does not directly contradict, the concept of the pleasingly "beautiful." As such, the esthetics of the sublime was a fundamental element not only of the anticlassical reaction of the 18th century but also of that romantic vision of antiquity which found its most lofty and coherent formulation in that and the following century. The feeling of dismay in the face of the unknown, the grandiose, or the inevitable (see DEMONOLOGY; DIVINITIES; MAGIC; MONSTROUS AND IMAGINARY SUBJECTS; TERROR AND THE MALIGN) has been, however, a source of creative inspiration, particularly within the religious sphere, in every period of history. It constitutes one of the dominant themes in the birth and development of tragedy (which was regulated by precise rules that the sublime tended to escape); nor are aspects and reflections of the tragic lacking in the religious and secular manifestations of the representational arts, although these cannot be classified in a clearly defined thematic category (see ESCHATOLOGY; HISTORICAL SUBJECTS; MYTH AND FABLE; etc.).

SUMMARY. The tragic in art (col. 264). The concept of the sublime and its development from antiquity to the 18th century (col. 268). The esthetics of the sublime in the 18th and 19th centuries (col. 270).

THE TRAGIC IN ART. It is difficult, at first sight, to identify a specifically tragic tradition, whether iconographic or stylistic. The tragic would seem, on the one hand, because of the nobility of its themes, to share the tradition of historical subjects (with a theoretical basis principally inspired by the *Poetics* of Aristotle), and on the other hand to be associated with that of the tradition of the sublime (see below). Direct relationships between tragedy and art are nonetheless discernible in various periods of Western civilization and generally determine varying mutations, whether in the style of narrative, the expression of sentiments, or the choice of subjects.

At this point another difficulty arises. The term "tragic" has assumed a wide range of meaning: on the one hand it indicates the actual dramatic structure according to the Greek model, and on the other hand, the "pathos" that accompanies such a theatrical form. It can be figuratively applied to a somber tale without dialogue and, with equal legitimacy, to a macabre and terrifying scene such as the *Raft of the Medusa* by Géricault (VI, PL. 118). It is associated with the situation, whether poetically or artistically depicted, of man overwhelmed by a boundless landscape that transcends him — a situation that is found, for example, in the landscapes of Caspar David Friedrich (q.v.), where the influence of romantic poetry, particularly of

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

an eschatological and funereal nature, is apparent. Such a situation, however, also forms part — and perhaps more properly so — of the concept of the sublime (see below).

The essential aspect of the tragic, however, is that of conflict and opposition, even when it is only symbolically achieved by means of the contrast of forms, lights and shadows, and gestures. The introduction of this element — besides being strongly characterizing in nature — also acquires effective historiographic validity, since dramatic contrast, as a theatrical type, does not exist in all civilizations and disappears for long periods (throughout the entire Middle Ages, except for occasional reappearances), while at other times it preserves only a scant and fitful vitality. The tragic in art presents the same historical vicissitudes and in fact follows a parallel development, based on corresponding periods of cultural presence.

For these reasons, the concept of the sublime — which, more broadly, included the monstrous, the awesome, and the sacred — extends to the great representational cycles of the Egyptian tombs that illustrate the journey of the soul in the afterlife as well as to the epic mythology of the Mesopotamian and Greek worlds, where the theme of man's (or man-god's) battle against beasts, monsters, or monstrous divinities recurs as a dominant motif, culminating in the drama of the gigantomachy of the Pergamon altar (VII, PL. 173). A parallel may be drawn with the theme of war and the hunt as expressed in the historical subjects of the ancient Orient and in the monuments of Rome and Sassanian Iran (see HISTORICAL SUBJECTS), although here the tension is attenuated by the secular content or the abstract symbolism of the regal power. In these compositions the sense of majesty and that of ineluctability interweave, and in their "scenic" expression the concepts of the tragic and the sublime are thus superimposed. Tragedy also includes the noble and pathetic aspect of pity for the fallen and the conquered (PL. 182), most consciously expressed in the barbarian figures of historical Roman reliefs.

Where the sense of death as a definite and irrevocable passing is lacking, owing to a particular religious interpretation of the entire cosmic life, the concept of the tragic is attenuated or replaced by other values. The uninterrupted cycles of birth and death, as postulated by the great religious movements of India (except for Islam), reduce the values of majesty and exclude the sense of tragedy (even from the theater). Nor do they permit indulgence in sorrow, which is often deemed a deformation that at the same time is connected with the individual's actions in his preceding lives, thus being a foreseeable and, in a certain sense, desired consequence of voluntary acts. Only the death of the Buddha, in the Hellenistic-Iranian interpretation of northwestern India (see GANDHARA), is described in sorrowful forms, just as notes of sorrowful pathos recur in those episodes of the Buddha's life which indicate the stages of his detachment from his family and the world. These, however, are foreign interpretations that cannot properly be defined as Indian. Moreover, they concern a religion that treats sorrow as one of the basic points of its doctrine, seeking to eliminate it, together with death and old age, from the reality of a world that, in relation to the absolute, is only a shadow.

The scenic-dramatic enucleation of the story in classic Greek art can perhaps be associated with the regularization of actual tragedy (there was a similar development in the 16th and 17th centuries). The relations established between the theater and the representational arts resulted in the dissemination of dramatic subjects, characters, situations (PL. 181), and perhaps even stage costumes (especially between 460 and 400 B.C., that is, up to the time of Euripides). It would be interesting to discover an analogous association in the conquest of a more profound expressiveness, a greater wealth of emotional situation — in the last analysis, of ethos — between Aeschylus, Sophocles, and Euripides and contemporaneous painting and sculpture (see CLASSIC ART); but in spite of the ascertainable contacts, affirmed by ancient sources — Aristotle, for example, declares that Zeuxis (q.v.) is "poor in characters" compared to Polygnotos (q.v.) — the paths seem more divergent than parallel.

In their critical works Johann Joachim Winckelmann and especially Gotthold Lessing, in his *Laokoön* (1766), glimpsed this asynchronism between the theater and the arts. They explained it as essentially a result of the greater idealization of art, certain passions being repugnant to the idea of the beautiful, since, by placing the body in forced postures, they cause the beauty of its ordinary state of repose to disappear. The classical artist, Lessing pointed out, refrained from these postures or reduced them to a lesser grade of expression, so that they were still capable of some beauty. Externalization of the emotions and expressive vehemence proceeded at the same rate in sculpture, however, as in dramatic art. It is also noteworthy that the term (and therefore the related concept of) *mimeisthai* began to be used with reference to actors (by Aristotle, Plato, Xenophon) between the last years of the 5th century B.C. and the first years of the 4th — that is, precisely at the time when the tendency toward expressionism began in the plastic arts. Xenophon relates how Plato accused Parrhasios (q.v.) of not having adequately represented, through the expression of the eyes, the passions of the soul. The conclusion of the development was, so to speak, a synthesis of realism and the sublime, which is to be found later only in the northern European religious painting of the Renaissance and in romanticism.

In the Middle Ages liturgical drama became, by the 11th century, an essential element in the genesis of narrative painting. In the famous Bayeux tapestry, the gestures of the figures are directed toward the spectators in a dramatic manner. Various iconographic motifs in the portrayal of Gospel scenes probably had a theatrical origin, while the Deposition, as early as the St. Albans Psalter, assumed the character of a *tableau vivant*, combining the illusionism of dramatic action with a direct appeal to the emotions. This connection is confirmed by the presence at St. Albans of Geoffrey of Le Mans, a prelate who was greatly interested in the mystery plays. The type of painted cross with the figures of Mary and John at the sides corresponds to a Byzantine dramatic staging, in which the characters recited from behind painted tables. The pathetic element, however, is often lacking in medieval miniatures and frescoes, or rather, is associated with more abstract and stylized forms (see MONSTROUS AND IMAGINARY SUBJECTS, col. 260 ff.). It was only from the 13th century onward, as a result of visionary and prophetic preachings — that is, of a more direct emotionalism — that the sacred scene, throughout almost all of southern Europe, assumed an emotional interest that at times became expressionistic (PL. 182).

The rebirth of tragedy took place in Italy between the 13th and 14th centuries, notably in the Paduan cultural sphere with Albertino Mussato's political drama commemorating the tragic end of the ferocious Ezzelino da Romano. The play is characterized, above all, by a strong opposition of characters and by singularly violent dialogue. It may seem excessive to seek a connection between Mussato and the dramatic plasticity of Giotto (q.v.), whose most perfect expression is to be found in the Scrovegni Chapel in Padua (VI, PLS. 199–203), but it should be remembered that documents connect the chapel with sacred dramatic representations and that some narrative expedients of Giotto have been recognized as having a scenographic origin. The influence of sacred drama is discernible in almost all the painting of the 14th and 15th centuries, both in the setting of the single episodes (within open pavilions, which constituted an evolution from the classical "door" of the proscenium) and in the general tendency toward simultaneity.

In the 16th and 17th centuries a parallelism with tragic drama was generally sought in the representational arts: for example, in the emphasis to be placed on design (assimilated to the dramatic plot), on the study of the expressions ("fury" is often mentioned), on mimicry, and on the direct relation with the spectator in accordance with the famous maxim of Horace (*Ars poetica*, 102–03) regarding the tragic actor: "If you would have me weep, you must first feel grief yourself" (*Si vis me flere, dolendum est primum ipsi tibi*). Around the protagonists, Leonardo da Vinci had already advised the introduction of a chorus of "bystanders" who perform "actions that show admiration, reverence, sorrow, suspicion, fear, bliss, or whatever the situation demands." Toward the end of the 16th century a concern for a rigorous unity of action became apparent in the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

arts. In his treatise (*Il Figino*) of 1591, Gregorio Comanini declared that a good painter "does not paint diverse actions within a picture, but only one, it being no less unfitting that several subjects be painted in a picture than if two men are seen under the same cloak" (Barocchi, 1962, p. 345); all the images depicted in the painting were to be focused on this single action.

In the frescoes by Luca Signorelli (q.v.; IV, PL. 179; VII, PL. 380; XIII, PLS. 36, 37) in Orvieto and in the frescoes, now destroyed, by Leonardo da Vinci and Michelangelo (qq.v.) in the Palazzo Vecchio in Florence, the emphasis on the passions resulted in a turbulent dissolution of the events depicted — an effect that for other reasons was later sought by the great narrative painters of the baroque period, particularly Rubens (q.v.). This emotional emphasis, combined with the desire to concentrate the entire painted scene in a single moment, led not only to a different interpretation of the drama (from general and cosmic to private and interior) but also to a decisive deepening of psychological content. There is good evidence of these trends in the intensely dramatic sacred scenes of Caravaggio (q.v.), which closely adhere to the unitary prescription of Comanini cited above (III, PLS. 34, 37, 39, 43).

In the 17th century closer relations between tragic drama and painting were established by Nicolas Poussin (q.v.). In many of his works an imitation of the sequence of events of tragedy (from which, moreover, he drew several subjects) is explicit. In his work and in that of the other great French masters of the 17th century, echoes of discussions concerning the unity of place and of action can also be found; but the essential contact lies in the analysis of character, in the states of mind expressed, in the desire to find a constant transition from tranquillity to the greatest excitement and vice versa. Perhaps the desire to find an equivalent for the final catharsis of tragic drama also inspired the wide, Venetian-style landscapes and the well-proportioned classical architecture that contain — or at times even absorb within a natural cycle — man's agitated passions (XI, PLS. 234, 236). Stylistic affinities have also been established with the metaphorical and descriptive language of the great tragic poets of the French baroque period.

In the 18th century, while the theater moved increasingly toward ballet (as is apparent from Lessing's *Hamburgische Dramaturgie* of 1766), engraving and painting seemed to exploit the possibility of a harsher and more direct realism in order to take on both the emotional and the didactic aims of tragedy. The most notable examples of this development are the series of prints by Hogarth (q.v.) that are structurally inspired by the stage and end in terrifying catastrophes: the *Four Stages of Cruelty*, *A Rake's Progress* (Br. Mus.), etc. Hogarth's connections with the theater are so well known that further comment is unnecessary. In another social climate, Goya (q.v.) had similar connections with actors and dramatists. This was during the years of the rediscovery of mannerist tragedy and of Shakespeare, whose tragedies were strikingly illustrated by Henry Fuseli (q.v.; PL. 187). The pictorial "tragedies" of this period are characterized by a growing adherence to daily life and anticipate not only Victor Hugo's famous preface to *Cromwell* — which would seem, in a sense, a commentary on the artistic philosophy of a painter like Géricault (q.v.), since it asserts that reality results from the completely natural combination of the sublime with the grotesque — but also the activity of the realist theater of André Antoine (who was in contact with students of Courbet).

More than theories it was the tragic experiences of World War I that drew attention to the images of mankind's sufferings and revolts. Michelangelo and Tintoretto, Grünewald and El Greco, the mannerists of Italy and the Low Countries, were dramatically reevaluated, owing chiefly to the influence of Max Dvořák (1874–1921). In architecture too, primarily through the efforts of Eric Mendelsohn (q.v.; V, PLS. 104, 105), a deep and exciting emphasis was sought. In fact, it could well be said that, beginning with expressionism, the whole of modern art has developed in a tragic, if not apocalyptic, vein — from the drawings of George Grosz (XI, PL. 446; XII, PL. 572) to Picasso's *Guernica* (VII, PL. 278). Realism, at least up to Ben Shahn (q.v.), has acquired a much more profound participation in human sorrows, notwithstanding the desire to transfer daily happenings to an existential or absolute plane. Even when reference to the natural has been absent, this commitment has not ceased; indeed, almost all critics agree in recognizing that *art informel* has a strong capacity to express the desire for "salvation" and the terror of the "fall" (G. C. Argan, "Salvezza e caduta nell'arte moderna," *Il Verri*, No. 3, June, 1961). In the summer of 1963 an exhibition dedicated to anguish was organized at Darmstadt ("Zeugnisse der Angst in der modernen Kunst"), which included works by Ossip Zadkine, Max Ernst, and Umberto Mastroianni.

It is evident that there is a problem of communication in expressing precise tragic content through *art informel* in a form that is not simply metaphorical. Almost every important monument dedicated to the European resistance to Nazism has given rise to considerable perplexity and to the adoption of banal symbols such as laceration, twisting, the sinking hook, the thorn that wounds, wringing hands. Henry Moore, commenting on the results of an international contest for a monument to the victims of the Auschwitz concentration camp, emphasized the great difficulty of creating a monument that would express the emotion aroused by crime of such stupefying dimensions. Attempts to design such monuments met with similar results in almost all countries (except in the case of monuments of an exclusively architectural character, which thus evaded the theme of the tragic).

It is to be hoped that the "new realism" — linked, through the work of such artists as Francis Bacon, to the English tradition, which has never abandoned its tragic vocation — or perhaps "pop" art, capable often of an intense portrayal of the contemporary human situation, or other modern movements may succeed in reestablishing a link with the theater, which, for its part, should take more account of the stylistic developments of modern culture.

Eugenio BATTISTI

THE CONCEPT OF THE SUBLIME AND ITS DEVELOPMENT FROM ANTIQUITY TO THE 18TH CENTURY. In esthetic criticism the concept of the sublime is connected with that feeling of ambivalent pleasure — of attraction and fear — which the reader or the observer derives from works whose subject or whose form transcends the proportions of human measure and circumstance. This effect is obviously achieved by images and scenes that are unreal or deliberately awe-inspiring (see MONSTROUS AND IMAGINARY SUBJECTS; TERROR AND THE MALIGN). Similarly an architectural structure that because of its vastness or its violent contrasts of light and shadow stirs a sense of foreboding and tension that generates the same esthetic pleasure may be characterized as sublime; and the term "sublime" has also been widely used in literary descriptions of natural landscapes and in criticism of landscape painting to designate tormented landscapes, full of contrasts and dramatic qualities (see LANDSCAPE IN ART) — in fact, it is precisely in certain aspects of landscape (storms at sea, dark forests, precipitous cliffs, deserts) that almost all theoreticians of the sublime, including Kant, most frequently found examples to illustrate their definitions. These are settings in which nature weighs overwhelmingly upon man, as in the landscapes of Joachim Patinir (q.v.; V, PL. 296), Salvator Rosa (q.v.), and Alessandro Magnasco (q.v.; IX, PL. 264). Ruins, too, whether real or artificial, are significant in that they inspire a sense of the destructive rapacity of time as well as an attempt to dominate this sense with the mind. In all these meanings, the concept of the sublime was frequently associated with the paintings of Salvator Rosa, the first to reveal the poetry of wild and deserted nature, in which man rediscovers himself (PL. 183; IX, PL. 16; XI, PL. 149); it was then associated with many other painters, including Rembrandt (q.v.; XI, PL. 458) and Rubens (q.v.; IX, PL. 19; XII, PL. 332), and with the etchings of Piranesi (q.v.; V, PL. 241). This typically preromantic esthetic ideal strongly influenced the painting of visionary artists such as William Blake (q.v.; PL. 187) and William Turner (q.v.; PLS. 223–225), as well as the works of neoclassic artists such as Fuseli (PL. 187) and John Runciman (PL. 188) whose interpretation of antiquity was full of fantasy and emotion. Many

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

landscape painters, from Richard Wilson (PL. 183) to John Martin (PL. 185) and Arnold Böcklin (q.v.; PL. 188), pursued a "sublime" vision of natural scenery.

In many artistic trends the study of landscape and nature readily touches on the relationship between man and nature, underlining the disparity that exists between the immensity and crushing force of nature and the smallness of man, who nonetheless realizes, with his intelligence and sensitivity, the sublime beauty of the blind forces which loom over him and which he dares to challenge. In the Buddhist symbolism of the Ch'an sect (Jap., Zen) the contrast between nature, in its immensity, or rather, immeasurability, and the small human images that it dominates is without doubt pervaded by a tragic, and at the same time romantic, note referable to the power of the extreme forces from which man may definitively free himself only by that divine spark which constitutes the human spirit (see BUDDHISM). In this case, for the Chinese artist, the tragic and the sublime coincide, albeit as complementary aspects of a reality to be overcome.

Although the esthetic idea of the sublime, in all the aspects that have been enumerated, is present in the art, criticism, and poetics of all periods and of all countries (see CRITICISM; ESTHETICS), its conceptual determination and definition, with the corresponding use of the term "sublime," is found only in certain phases of the history of art and esthetics. On one hand, therefore, the history of the sublime coincides with the history of explicit knowledge and positive appreciation, of awe-inspiring phenomena artistically represented, of the gigantic, of ornamentation used with the aim of amazing, haunting, and almost forcing the observer's spirit beyond rationally intelligible experience, of deformation intentionally pursued so as to express a dramatic vision of reality. On the other hand, in a more exact and rigorous sense, the history of the sublime presents itself as a reconstruction of the deliberate use of this term to define a particular esthetic category that is distinct from the "beautiful" as used in a restrictive sense to designate not the quality, the esthetic value as such, but the theory of clear, balanced, harmonious forms that give the observer a sense of spiritual serenity.

The sense of the sublime, as something distinct from the beautiful although with occasional strong connections, almost always recurs when the divinity is presented in such forms as to arouse in the beholder the tremendous shock of contact with the metaphysical world. This element, sought after and desired by artists of every period and every country, is often tinged with a quality of terror (see TERROR AND THE MALIGN); but at other times the artist is inspired solely by the *maiestas* of the god, creating an image of the divinity which is both mystical and fantastic and which arouses in the beholder a sense of awe that coincides with the sublime. This occurs in medieval Christian art, in the works of Fra Angelico (q.v.), and above all in Buddhist art inspired by the meditative techniques of Yoga.

The history of the implicit theories on the sublime should begin with Aristotle's *Poetics*, which, in opposition to the Platonic condemnation of the mimesis of the "ugly," declared that the representation of phenomena arousing pity and terror is capable of freeing and elevating the soul; but explicit theorization begins with the anonymous treatise *On the Sublime* (Περὶ Ὕψους), the rhetorical treatise that first defined the sublime. This is a text dating from the 1st century of the Christian Era, supposedly edited by a Greek of Hebrew origin; it is in epistolary form and of controversial character, originating from the dispute between the Apollodorians (followers of Apollodorus of Athens) and the Theodorians (followers of Theodorus of Gadara) referred to by Quintilian in Book III of his *Institutio oratoria*. The Apollodorians professed a rationalistic and demonstrative ideal of rhetorical art, while the Theodorians gave major importance to the pathetic element, to suggestion, and to fantasy. The treatise undertakes to show how the oratorical sublime, by means of a certain nobility of expression, can elevate the soul of the hearer not only to a state of persuasion but to feelings of ecstasy, joy, and pride.

The treatise *On the Sublime* was transcribed many times in the Byzantine period and was attributed, after the 10th century, to Dionysius of Halicarnassus or to Cassius Longinus. It made its entrance into Western civilization in 1554, when Francesco Robortelli published it at Basel, attributing it to a hypothetical Dionysius Longinus. Its European career, however, began only in 1694, when Boileau, the theorist of French classicism, edited a French translation preceded by ten essays entitled *Reflexions critiques sur quelques passages du rhéteur Longin*. The influence of the treatise was chiefly apparent, however, not in Continental Europe but in English culture. As early as 1636 the first English edition had appeared, and by 1700 the work was known to all the cultured English public, not only through Boileau's translation but also through a number of English translations.

THE ESTHETICS OF THE SUBLIME IN THE 18TH AND 19TH CENTURIES. It was in England in the 18th century that the concept of the sublime received its first theoretical formulations, with applications both to poetry and to the figural arts. Among the earliest of these formulations (although the sublime is not referred to as such) are those of Joseph Addison (1712) and George Berkeley (1713), which form a fundamental guide to 18th-century taste. In the essays dedicated to the pleasures of the imagination that occupied Nos. 409–21 of the *Spectator*, Addison, with frequent references to the treatise of the pseudo Longinus, carefully analyzed the pleasure of the sublime. In the second essay he described the sense of spiritual calm that comes from the contemplation of vastness, especially boundless panoramas such as stormy seas, starry skies, and spacious, varied landscapes. In the fifth essay he applied these concepts to the esthetic evaluation of architectural works, in which the sublime consists in the grandeur either of the bulk of the buildings or of the style of construction. In the eighth essay he discussed another aspect of the sublime: the pleasure which the reader derives from a terrifying description and which springs from his awareness that he need not fear the objects described. It is this aspect of the sublime that is concisely defined by Berkeley in the second dialogue between Hylas and Philonous, when the latter observes that our souls are filled with a "pleasing horror" at the sight of the vast depths of the ocean, or of some towering mountain whose peak is lost among the clouds, or of a dark, ancient forest.

It was Edmund Burke who, in his *Philosophical Enquiry into the Origin of Our Ideas of the Sublime and the Beautiful*, published in 1756, first rigorously defined the empiricist concept of the sublime. His theories on the sublime gained wide acceptance in English cultural circles of the 18th century. He defined the beautiful as inspiring feelings of tenderness and affection, while the sublime arouses feelings of gloom and terror. In Burke's description of the awe evoked by the sublime, the memory of the ecstasy spoken of by the pseudo Longinus at the beginning of the treatise *On the Sublime* is evident. Burke says, of this ecstasy, that it is not produced by rational thought but anticipates and stimulates it irresistibly. In this violence of emotion that precedes rational thought lies one of the reasons why the sublime, in precisely the sensist definition given it by Burke, was to occupy a central place in the theory and criticism of the romantics.

After defining the general idea of the sublime, Burke proceeds to an analysis of its various aspects and of the factors that contribute to rendering a work of art sublime. In the first place, the representation of objects that, in nature, provoke terror either through the vastness of their dimensions or through their inherent menace can be characterized as sublime (see MONSTROUS AND IMAGINARY SUBJECTS). Sublime, too, is the obscurity that helps to render an object terrible. Other coefficients of the sublime, according to Burke, are power (and therefore the representation of objects whose power inspires a sense of terror); vastness of dimensions; artificial infinity, as he calls it — that is, the illusion of the infinite obtained by the repetition and uniformity of the parts (this, together with vastness of dimensions, contributes to architectural sublimity); and well-ordered magnificence.

For Burke, the relationship between light and darkness is a further factor in sublimity in architecture. "All edifices cal-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

culated to produce an idea of the sublime ought rather to be dark and gloomy, and this for two reasons; the first is that darkness itself . . . is known by experience to have a greater effect on the passions than light. The second is, that to make an object very striking, we should make it as different as possible from the objects with which we have been immediately conversant; when therefore you enter a building, . . . to make the transition thoroughly striking, you ought to pass from the greatest light, to as much darkness as is consistent with the uses of architecture" (Part II, Sec. xv). An architectural work, to be sublime, must also be almost completely bare: gilding, mosaics, paintings, and statues contribute little to architectural sublimity. Burke recommends bearing in mind that everything that is luminous and gay diminishes the effect of the sublime. He does not seem to concede sublimity to Gothic architecture, which Addison had already qualified as a miserable style in spite of its material greatness. According to Burke, a multiplication of angles detracts from the sublime quality of a building, since its result is that "the whole must of course assume a broken, unconnected figure; the lights must be unequal, here strong, and there weak; without that noble gradation, which the perspective always effects on parts disposed uninterruptedly in a right line" (Part II, Sec. ix).

Colors, whether in nature or in painting, can be considered as contributing to the sublime, according to Burke, who observes that a green mountain is not sublime, whereas a tenebrous mountain is, just as a clouded sky is more sublime than a clear one and the night more sublime than the day. On the grounds that obscurity — and therefore the indeterminate quality of the object represented — is a source of the sublime, while clarity is not, Burke passes unfavorable judgment on the clear pictorial representation of horrible or repugnant subjects. With a probable allusion to the *diableries* of the Flemish painters, he adds: "All the designs I have chanced to meet of the temptation of St. Anthony were rather a sort of odd, wild grotesque, than anything capable of producing a serious passion" (Part II, Sec. iv).

Inasmuch as the pleasure of the sublime was not a pure pleasure but was mixed with pain, it came to be placed in opposition to the pleasure of the beautiful. And it was precisely this antithesis of the sublime and the beautiful — which saw in the sublime not a negation of the beautiful but a positive esthetic value — that was to induce Kant, who knew the work of Burke, to set himself the philosophical problem of the sublime as contrary but not contradictory to the beautiful. The first work in which Kant discussed the sublime, the *Observations on the Feeling of the Beautiful and the Sublime*, dates from 1764. In this work, the difference between the beautiful and the sublime, which had been empirically established by Burke and other English writers, was analyzed dialectically by Kant in such a way as to eliminate, on the level of speculative assumptions, such premises as the neoclassical one that the sublime was the antithesis of the beautiful and hence was to be identified with the ugly.

In the *Observations*, Kant's investigation of the beautiful and the sublime is limited to the psychological level; its object is merely to show how the diversity of the beautiful and the sublime rests on differences of physiopsychological constitution, of sex, and of national character. He provided a quite different speculative foundation for the distinction between the beautiful and the sublime at the height of his philosophical maturity, when he approached esthetic problems critically and wrote the *Critique of Judgement*, first published in 1790 (see ESTHETICS); the treatment of the sublime occupies the entire second book ("Analysis of the Sublime") of the first part ("Critique of Esthetic Judgement"). It begins by establishing the fundamental principle of the *Critique of Judgement*, namely, that esthetic pleasure (contrary to the opinion of Burke and of the English empiricists in general) does not depend on the sensations. According to this work the difference between the beautiful and the sublime consists in the fact that the beautiful produces a feeling of exaltation of life, while the sublime is connected with a suspension, followed by a stronger effusion, of the vital forces. Like the beautiful, however, the sublime produces a universal, disinterested pleasure.

Kant's sublime, as opposed to the beautiful, has two aspects, which he calls the mathematical sublime and the dynamical sublime. The mathematical sublime, through its immeasurable vastness, terrifies and dismays; but it also inspires pleasure (which for Kant, too, is fundamental to the concept of the sublime) through an awareness of the spirit's faculty to go beyond every measure of the senses, through "a feeling of our possessing a pure and self-sufficient reason, or a faculty for the estimation of magnitude, whose preeminence can only be made intuitively evident by the inadequacy of that faculty which, in the presentation of magnitudes (of objects of sense), is itself unbounded" (Eng. trans., J. C. Meredith, p. 502). In what Kant calls the dynamical sublime, the contemplation of scenes that arouse terror (which in nature may be overhanging rocks, as depicted by Salvator Rosa; storms, as in Gaspard Dughet's paintings; volcanoes in eruption; a tempest at sea, recalling Turner; the cataracts of a great river, such as Constable painted), when the observer himself is safe and therefore the danger is represented as merely possible and not real, heightens man's spiritual forces and reveals his superiority, as a rational being, over a nature that menaces only his natural being. "Sublimity, therefore, does not reside in any of the things of nature, but only in our own mind, insofar as we may become conscious of our superiority over nature within, and thus also over nature without us (as exerting influence upon us). . . . The proper mental mood for a feeling of the sublime postulates the mind's susceptibility for ideas, since it is precisely in the failure of nature to attain to these . . . that there is something forbidding to sensibility, but which, for all that, has an attraction for us" (p. 504) and which clearly manifests the command that reason exercises over sensibility. The esthetic criticism of romanticism was to profit from this Kantian definition: for the romantics, artistic images were symbols of ideas, and their validity increased the more they rendered attractive to reason what was terrible to sensibility.

The first to comment on and develop the theories of Kant concerning the sublime was Friedrich von Schiller, who in 1792–93 published his essay on the sublime ("Vom Erhabenen") in the magazine *Neue Thalia*, of which he was the editor. The essay begins with an accurate paraphrase of the Kantian definitions but develops Kant's argument with surer and more penetrating artistic references, extending the concept of the sublime to the artistic representation of passion, suffering, and pain and observing that it is not the feeling of security produced by the representation of others' sufferings that is the source of the sublime and of the pleasure that it engenders, but rather the consciousness of our moral liberty, from which the "pathetic sublime" originates. The pathetic sublime consists in feeling that "our moral being is delivered from the causality of this suffering and therefore from its influence on the determination of our will." On the basis of these premises, Schiller concludes his essay on the sublime by stating those laws which, for him, are fundamental to all tragic art and hence are valid not only for the drama but also for painting and sculpture. These are (1) the representation of suffering nature and (2) the representation of moral liberty in suffering.

In his treatise on esthetics entitled *Kalligone* (1800), J. G. Herder submits the theory of the sublime contained in the *Critique of Judgement* to severe criticism and in a note praises the *Observations on the Feeling of the Beautiful and the Sublime*. He finds Burke's work of great merit, emphasizing its derivation from the Newtonian principles of attraction (the beautiful) and repulsion (the sublime). The principal objection that Herder makes to the concept of the sublime as stated by Kant concerns the transcendental foundation and the contrasting of the sublime and the beautiful, which he finds erroneous also in Burke. Herder considers that the beautiful and the sublime "are not opposites, but the trunk and branches of a single tree whose top is the beautiful in its most sublime form," and he adds that "the feeling of the sublime is the beginning and end of the realm of the beautiful." Herder's ideal is the reconciliation or conjunction of the beautiful and the sublime. The feeling of the sublime, Herder concludes, "is an expanding of our breasts, a looking and a straining aloft, an exalting of our being.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

To search for the sublime in the night and in the mist, in the inferno and the abyss, in the horrible and terrifying, or even in the formless, and there to lose oneself by becoming oneself formless is a confusion of concepts, just as it is a confusion of feelings to transform into a battle of Titans the beatific sensation of feeling oneself rise above oneself." In an exposition of the sublime in art, Herder points out that the sublime is always united with the beautiful in its highest expressions. In Greek architecture, which joined the one and the multiple, "when the impression of the One is stronger, the building appears more sublime to us; when the impression of the multiple prevails, the building appears more beautiful to us." Concerning sculpture, Herder observes that its culmination is the sublime. The so-called "sacred style" of the Greeks, he adds, acts on the spirit with an indescribable force and leaves affectation far behind, since with a few forms, often harsh and crude, it creates a strong and solid unity and with it a greatness that taxes the imagination. Simplicity gives force to the image, shapes a vigorous unity, and this is the sublime. In painting, he says, the sublime consists "not in multiplicity, but in unity; not below, in the noisy approbation of the throng, but at the summit, at the point of greatest tranquillity."

Friedrich von Schelling arrived at analogous conclusions on the inseparability of the beautiful and the sublime in his *Philosophie der Kunst* of 1802–03, which marks his separation from the romanticism of Jena. For Schelling, the ideal of the beautiful without sublimity is the ideal of cold and regular form professed by classicism; the ideal of the sublime without beauty is the romantic ideal of a shapeless material, absolute liberty without discipline, chaos. Real beauty, according to Schelling, is the union of liberty and discipline, of the unconscious and the conscious, of the beautiful and the sublime. The sublime is the infinite which shows itself in the particular and which expands beyond the narrowness of a form that imprisons it in its own particularity; the beautiful is the exposition of the particular in the absolute, the rendering absolute of the particular in the formal determination that establishes it as particular.

Georg Wilhelm Hegel, in his posthumous *Philosophy of Fine Art* (1835), gives a historical context to the dialectic relation between the beautiful and the sublime by considering them as two different stages in the historical evolution of art. As his departure point, Hegel adopts the distinction between the beautiful and the sublime formulated by Kant in the *Critique of Judgement* and defines the sublime as the attempt to express the infinite, despite the impossibility of finding anything in the real world that is adequate to such expression. Because of this lack of reference to the real world, the sublime, according to Hegel, is inexpressible by means of the finite and can find expression not in the visual arts, but only through verbal representation — in other words, in poetry. Old Hebrew poetry, the poetry of the Old Testament, is, according to Hegel, the highest expression of the sublime; the iconoclasm of the Hebrew religion (see IMAGES AND ICONOCLASM) is justified, in his opinion, precisely because the Old Testament esthetic ideal was founded on the sublime. Hegel considers that the sublime belongs to symbolic art and that classical art cannot claim to express the sublime. In his analysis, which identifies the various esthetic ideals with the successive stages in the historical evolution of art, the sublime is conceived as a stage of withdrawal, since it is an aspect of symbolic art destined to die with the passage from symbolic to classical art. Classical art gives birth to the representational arts, which, because of their expressive limitations, cannot rise to that representation of the infinite in which the sublime consists.

Hegel's historical approach to the esthetic ideals reflects his sympathetic but nonetheless restrictive attitude to the romantic school, which had made the sublime its ideal, even in the critical evaluation of the visual arts. At the time of Hegel's death, in 1831, the esthetic ideals of romanticism, although extinct in Germany, were in full flower in France. A year earlier, on July 25, 1830, Victor Hugo had begun to write his *Notre Dame de Paris*, in which the critical apologia of Gothic architecture is based on the esthetic idea of the sublime as understood in the two Kantian specifications of the mathematical sublime and the dynamical sublime, with, in addition, an accentuation of the terrible sublime, the macabre, and the monstrous. These concepts of the romantic sublime are graphically expressed in the illustrations chosen by Hugo for the first edition of his novel (the originals are preserved in the Musée Victor-Hugo in Paris). The romantic passion for the sublime, above all under the aspect of the macabre, the terrifying, and the repugnant, was later to be transmitted to the French decadents. It was on the esthetic idea of the sublime that J. K. Huysmans subsequently based his critical interpretation of the Isenheim Altar by Grünewald (1908).

An isolated position, in the first half of the 19th century, was that of A. Schopenhauer, who discussed the sublime in the third book of *The World as Will and Idea* (first published in 1819 but influential only after the revised edition of 1844), dedicating an entire section of his work to it. He defines the feeling of the sublime as originating from the contemplation of objects whose significant form, although stimulating pure contemplation, shows a hostile attitude toward the human will in general, threatening it with a superior force that overcomes all resistance or reduces it to nothing in the face of its own immeasurable greatness. From this point of view Schopenhauer approves and adopts Kant's distinction between the mathematical and the dynamical sublime, although he strips it of every reference to morality. The pleasure of the sublime, therefore, is not derived, as is the pleasure of the beautiful, from a knowledge that frees itself from the will but from the contemplation of the will itself. As an example of the sublime in architecture Schopenhauer indicates the mathematical sublime as it occurs in the interiors of large buildings such as St. Peter's in Rome or St. Paul's in London. These interiors, although small in comparison to the universe, being entirely and directly visible to the observer in all three dimensions, give an impression of size that dwarfs the proportions of the human body. As to sculpture, Schopenhauer, repeating the arguments of Winckelmann and Lessing, denies that it can express the sublime, the essential qualities of this art being, in his view, beauty and grace. Nor is painting adapted to the expression of the sublime, because at its highest level painting, according to Schopenhauer, is not a knowledge of the will but a knowledge of the mind, the "idea" that brings complete resignation and suppression of the will.

Schopenhauer's distinction between the beautiful and the sublime was the last to be formulated in the philosophy of the 19th century. However, although the denomination of the sublime was little used by the theorists and critics of the second half of the 19th century — or, at most, used in a nonspecific sense as a simple characteristic of certain works and certain artists — the purport of the distinction between the beautiful and the sublime endured, although under other designations. It appeared again in the *Birth of Tragedy* (1872), which was written by Nietzsche at twenty-six years of age under the combined influence of Schopenhauer and Wagner. In the *Birth of Tragedy* Nietzsche applies Schopenhauer's dualism of "will" and "idea" to the interpretation of the ancient world. This leads him to distinguish between an "Apollonian" art — clear, serene, of pure idea, whose characteristics correspond to those of the beautiful as it had been defined, in opposition to the sublime, by Burke, Kant, and Schopenhauer — and a "Dionysiac" art inspired by the unconscious and indomitable will, shadowy, intoxicated and intoxicating, corresponding in great part to Schopenhauer's concept of the sublime. In his reference to the ancient world, Nietzsche's distinction between the Apollonian and the Dionysiac is related to the desire to deliver the critical interpretation and evaluation of antiquity from the classicism of Winckelmann to which Lessing and Kant, Schelling and Hegel, and Schopenhauer himself had remained substantially faithful. The philosophical problem, however, that appears in the concluding pages allows of extensive application, equivalent to an actual reestablishment of the concept of the sublime. In fact, Nietzsche sustains, in this early work, that existence and the world appear justified only as an esthetic phenomenon, in which the ugly and the discordant also play

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

their part. This affirmation, which legitimizes, on the esthetic level, those forms which do not correspond to the ideal of the beautiful is equivalent to a philosophical rehabilitation of that duality of the beautiful and the sublime which the Hegelian dialectic had practically eliminated from the esthetics of idealism.

The theory of Heinrich Wölfflin is, like that of Nietzsche, founded on an esthetic dualism intrinsic to the vision of the artist, derived from an analytical consideration of art and its history. In Wölfflin's dualism the beautiful and the sublime are not referred to, his categories applying to vision, not feeling; but in all its pairs (linear and pictorial; superficial and profound; closed forms and open; multiplicity and unity; absolute clarity and relative clarity), one of the two terms, the first, has connotations that allow its inclusion in the traditional category of the beautiful, while the second is usually to be placed in the category of the sublime. Also significant is the fact that the dualism of Wölfflin, before its theoretical and systematic development in his *Principles of Art History*, was slowly elaborated through a process of historical research, whose fundamental stages are marked by the essay *Renaissance und Barock* (1888) and by the study on Dürer (*Die Kunst Albrecht Dürers*, 1905). The old dichotomy of the beautiful and the sublime, founded on the psychology of feeling, becomes in Wölfflin — especially through the influence of the "pure visibility" theory — a dichotomy founded on the psychology of vision.

In a purely philosophical capacity, Benedetto Croce (1901), theorizing on the indivisible unity of the esthetic category and excluding all schematization going beyond the individuality of artistic expression, had meanwhile rigorously excluded any return to the dichotomy of the beautiful and the sublime, asserting that the sublime "is everything that is or will be so called by those who have employed or shall employ this word." Notwithstanding its sharp exclusion by Croce, however, the dualism of the esthetic category reappeared in the esthetic theories and in the art criticism of the first half of the 20th century because of the necessity of critically justifying those tendencies of modern art which are unacceptable from the point of view of the monistic esthetics that, in the last analysis, was founded on a classical conception of the beautiful (see EUROPEAN MODERN MOVEMENTS). Even though the term "sublime" has not returned to general circulation in the current language of esthetics and criticism — though it was used as a category of Byzantine art by P. A. Michelis (1946) — the concept has been implicit in more than a few theories and critical trends. Nor has there been any lack of speculative esthetic theories that have reinstated the old internal distinction of the esthetic category: among them should be mentioned those of Souriau (1929), Calogero (1947), and Dufrenne (1953).

A genuine theory of the sublime as distinct from the beautiful is found in the treatise on esthetics by the German philosopher Nicolai Hartmann (1953), who dedicated an entire section of his work to the sublime and the gracious. According to Hartmann, the sublime is to be found in all fields and not only in esthetics. The esthetic sublime occurs when admiration is accompanied by "distance," the calm contemplation of the object admired, without direct participation in its greatness. Since art is the creation of fictitious appearances, the sublime as found in the appearance created by the artist may be the esthetic sublime, when it is not the form of the work of art as such that is sublime but that which it represents; or it may be the artistic sublime, when the sublimity resides in the formal structure of the work. The artistic sublime occurs in all the arts, with the exception of those which are simply ornamental. In the structure of a work of art, sublimity resides in the more profound strata, whose external manifestation is only partial. For this reason the sublimity of works of art is characterized by the obscure, the undetermined, the mysterious, the deep and unexplored, the abysmal. The sublime thus conceived has, however, a relatively small place in painting, which, when it reaches true sublimity, ceases to be truly pictorial — painting, according to Hartmann, consisting in the palpable magic of color. In the frescoes of Michelangelo in the Sistine Chapel, he observes, the sublime is graphic-sculptural because "perhaps only in this way is it possible to capture the supernatural grandeur of man"; and in the later portraits of Rembrandt color is sacrificed to something more profound, which grasps the essence of man. In sculpture the sublime expresses itself as a great human ideal passing into the superhuman, a visionary intuition fixed in stone, as in the carriage of the head of the Olympian Apollo or in the head of Athena with the Corinthian helmet. In architecture, Hartmann considers that the sublime derives chiefly from monumentality: thus palaces, churches, the temples of antiquity, the towers and walls of cities, may be considered sublime, as well as interiors whose spatial configuration gives an effect of loftiness, such as Gothic cathedrals, with their overwhelming height and vastness. Weight can also be a source of the sublime in architecture, as, for example, in such early Romanesque architecture as the octagon of the Palatine Chapel in Aachen. A pure example of the architectural sublime is to be found, according to Hartmann, in the Doric temple, where the appearance of depth is given by the counterplay of the columns and the entablature. This esthetic definition of Hartmann, based on the formal structure of works of art as such, is the most recent theoretical formulation of the artistic sublime; it shows that the question of the twofold esthetic value of the beautiful and the sublime, far from being obsolete, still merits the attention of philosophical esthetics as well as of militant criticism.

SOURCES. Aristotle, Poetics, S. H. Butcher, trans., New York, 1961; C. Longinus (?), On the Sublime, D. A. Russell, trans., Oxford, 1964; N. Boileau-Despréaux, Réflexions critiques sur quelques passages de Longin, in Traité du sublime ou du merveilleux dans le discours, traduit de grec de Longin, Paris, 1694; J. Addison, The Spectator, nos. 409–21, June 19-July 3, 1712 (D. F. Bond, ed., Oxford, 1965); G. Berkeley, Three Dialogues between Hylas and Philonous, London, 1713 (A. D. Lindsay, ed., A New Theory of Vision and Other Writings, London, 1957); J. Baillie, An Essay on the Sublime, London, 1747 (S. H. Monk, ed., Los Angeles, 1953); E. Burke, A Philosophical Enquiry into the Origin of Our Ideas of the Sublime, and Beautiful, London, 1756 (J. T. Boulton, ed., London, New York, 1958); I. Kant, Beobachtungen über das Gefühl des Schönen und Erhabenen, Königsberg, 1764 (Eng. trans., T. Goldthwait, Observations on the Feeling of the Beautiful and Sublime, Berkeley, 1960); G. Lessing, Laokoon, Berlin, 1766 (Eng. trans., London, 1836); G. Lessing, Hamburgische Dramaturgie, 2 vols., 1767–69 (O. Mann, ed., Stuttgart, 1958); I. Kant, Kritik der Urteilskraft, Berlin, 1790 (Eng. trans., J. C. Meredith, Critique of Judgement Oxford, 1952); F. von Schiller, Vom Erhabenen, Neue Thalia, III, 1793 (Eng. trans., J. Elias, On Naive and Sentimental Poetry, and On the Sublime, New York, 1966); J. G. von Herder, Kalligone, Leipzig, 1800 (new ed., H. Begenau, ed., Weimar, 1955); F. W. J. von Schelling, Philosophie der Kunst, Jena, 1802–03 (new ed., M. Schröter, ed., Schellings Werke, Munich, 1958); A. Schopenhauer, Die Welt als Wille und Vorstellung, Leipzig, 1819, rev. ed. 1844 (Eng. trans., R. B. Haldane and J. Kemp, The World as Will and Idea, Garden City, 1961); J. Knowles, ed., The Life and Writings of Henry Fuseli, 3 vols., London, 1831; G. W. F. Hegel, Vorlesungen über die Aesthetik, Berlin, 1835 (Eng. trans., F. P. B. Osmaston, The Philosophy of Fine Art, London, 1920); F. Nietzsche, Die Geburt der Tragödie aus dem Geiste der Musik, Leipzig, 1872 (Eng. trans., F. Golffing, The Birth of Tragedy . . ., Garden City, 1956); B. Croce, Estetica come scienza dell'espressione e linguistica generale, Milan, 1901, 9th ed., Bari, 1950 (Eng. trans., D. Ainslie, Aesthetic as Science of Expression and General Linguistic, 8th ed., New York, 1960); J. K. Huysmans, Trois églises et trois primitifs, Paris, 1908; H. Wölfflin, Kunstgeschichtliche Grundbegriffe, Munich, 1915 (Eng. trans., M. D. Hottinger, Principles of Art History, London, 1932); E. Souriau, L'avenir de l'esthétique, Paris, 1929; G. Calogero, Estetica semantica istorica, Turin, 1947; M. Dufrenne, Phénoménologie de l'experience esthétique, 2 vols., Paris, 1953; N. Hartmann, Ästhetik, Berlin, 1953; P. Barocchi, ed., Trattati d'arte del Cinquecento, Bari, 1962.

BIBLIOG. A. Rostagni, Il "sublime" nella storia dell'estetica antica, Annali della R. Scuola Normale Superiore di Pisa, I, II, III, 1933, pp. 99–119, 175–202 (repr. A. Rostagni, Scritti minori, I, Turin, 1955); S. H. Monk, The Sublime: A Study of Critical Theories in 18th-century England, New York, 1935; M. Praz, Storia della letteratura inglese, Florence, 1937; P. A. Michelis, Aisthētikē theorēsē tēs byzantinēs technēs, Athens, 1946 (Eng. trans., H. Read, An Aesthetic Approach to Byzantine Art, London, 1955); E. F. Carritt, A Calendar of British Taste from 1600 to 1800, London, 1949; C. Antoni, Wölfflin, Dallo storicismo alla sociologia, Florence, 1951 (Eng. trans., H. V. White, From History to Sociology, Detroit, 1959); W. J. Hipple, The Beautiful, the Sublime, and the Picturesque in Eighteenth-century British Aesthetic Theory, Carbondale, 1957; R. Assunto, Preparazione e continuazione della critica del giudizio, Teoremi e problemi d'estetica contemporanea, Milan, 1960; R. Assunto, La critica d'arte nel pensiero medioevale, Milan, 1961; R. Assunto, Estetica dell'identità, Lettura della Filosofia dell'arte di Schelling, Urbino, 1962; N. Merker, Introduzione a G. W. F. Hegel, Lezioni sull'estetica, Milan, 1963; L. Salerno, Salvator Rosa, Milan, 1963; R. Assunto, Sullo schematismo estetico, in Giudizio estetico, critica e censura, Florence, 1964.

Rosario ASSUNTO

Illustrations: PLS. 181–188.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

TREATISES. Reflections on art, explicit written criticism, have taken the form of the theoretical or the practical esthetic or technical treatise or have combined these various aspects. Obviously there is a technical and theoretical content also in historical writings (see HISTORIOGRAPHY) and in critical expressions (see CRITICISM) that do not constitute treatises as such; and there is an implicit theoretical content in the work of art itself as well as in the activity of art patrons and collectors, that is, in the orientation of taste (see MUSEUMS AND COLLECTIONS; PATRONAGE). Accepting the fact, then, that treatises cannot be separated from historiography, esthetics, and art criticism, except for extraneous aspects, it is necessary to consider the art literature that took the form of the treatise in order to give it a history and a bibliography.

The treatise on art was predominantly the work of artists, especially during the Renaissance and in the mannerist period. It was only from the 17th century on that a theoretical and technical literature written by nonartists originated and spread, branching into various specialized areas. In the 19th century, with the development of modern criticism and historiography, the literary form of the treatise disappeared, with the exception of handbooks. Later, artists themselves began to explain their principles with a new freedom, sometimes in fragmentary form, sometimes in the form of manifestoes, no longer convinced that art could be confined within a system of teaching. Thus the very purpose of the traditional treatise ceased to exist.

SUMMARY. Antiquity (col. 277). The Byzantine world (col. 280). The Middle Ages (col. 281). The Renaissance and mannerism (col. 286): *The early Renaissance; The High Renaissance; Mannerism; Architectural treatises in the 16th century; The treatise outside Italy.* Artistic theory in the baroque period (col. 293). The 17th century in England, Spain, and the Low Countries (col. 295). The 18th century (col. 297): *England; France; Germany; Italy.* The 19th century (col. 300). Representative treatise writers, 15th–19th century (col. 302): *The Renaissance and mannerism; The 17th and 18th centuries: a) Italy; b) Spain; c) France; d) Low Countries; e) England; f) Germany; The 19th century.* The Eastern world (col. 311): *Islam; India; China.*

ANTIQUITY. Interest in the problems of artistic technique and curiosity about the life and work of the most illustrious artists in the fields of architecture, sculpture, and painting were aroused at a very early date in Greece, almost contemporaneously with the appearance of some of the most significant monuments. Such interest arose, as was logically to be expected, apropos of mathematical and geometrical problems and not from philosophical and esthetic considerations, since the first treatise writers had theoreticopractical and technicoprofessional intentions. Esthetic investigation followed a little later and began to develop in the sphere of dialectic. Unfortunately nothing has been preserved of the older treatises, except for references by later authors. It is a great loss to be no longer able to read them today, since the available information about them sometimes fades away into legend.

One of the oldest treatise writers was certainly that Agatharchos of Samos (5th cent. B.C.) who, according to Vitruvius (*De architectura*, VII, pref. 11), fashioned a stage set for one of the plays of Aeschylus and wrote a work on scenographic perspective that induced the philosophers Anaxagoras and Democritus to take up the theme in their own works, in which they taught that objects painted on a flat surface must be arranged in such a way that "*alia abscedentia, alia prominentia esse videantur*" ("some seem to recede, some to project"). However, this information does not agree with Aristotle (*Poetics*, 1449a, 16), who attributes the introduction of scene painting to Sophocles. With the facts presently available, it is difficult to solve the problem: perhaps Agatharchos prepared a monochromatic stage decoration, while Sophocles's painter, Apollodoros, fashioned a stage decoration in color, obtaining a greater scenographic illusion; and Agatharchos may have given only a commentary on the technique of the landscape or buildings drawn, while Democritus and Anaxagoras may have studied the mathematical principles of perspective. Writings on painting are also attributed to the painter Pamphilos of Amphipolis (Suidas, *Lexicon*, s.v.), master of Apelles and founder of a school of painting at Sikyon (ca. 360 B.C.), where mathematics and geometry were taught as propaedeutics of art (Pliny, *Naturalis historia*, XXXV, 76–77). There were treatise writers for architecture, too; the principal ones are listed by Vitruvius (op. cit., VIII, pref. 12): Silenos (?), on the proportions of the Doric order; Theodoros of Samos, on Polycrates's Temple of Hera at Samos — the same Theodoros who supposedly also contributed to the Artemision at Ephesus (Diogenes Laertius, *Lives*, II, 103) and discovered, with his father, the way to cast bronze statues (Pausanias, *Periegesis of Greece*, VIII, Ch. XIV, 8, X, Ch. XXXVIII, 6); Chersiphron of Knossos and his son Metagenes, on the Artemision at Ephesus (Pliny, op. cit., XXXVI, 95; Strabo, *Geography*, XIV, 640); Pytheos, on the Temple of Athena at Priene and, together with Satyros, on the Mausoleum at Halikarnassos; Iktinos (q.v.) and Karpion (or Kallikrates ?), on the Parthenon, which they conceived; Theodoros of Phokaia (Phocaea), on the tholos at Delphi; Philon of Eleusis, on the arsenal (*skeuotheke*) and the proportions of the temples at Piraeus; Hermogenes of Priene, on the Temple of Artemis Leukophryene at Magnesia ad Maeandrum and that of Dionysos at Teos; Arkesios (Argelios, Tarchesios), on "Corinthian" proportions and on the Temple of Asklepios at Tralles. As for sculpture and toreutics, apparently the first treatise writers were Polykleitos (q.v.) and Euphranor, both from Sikyon; the former is supposed to have sculptured the *Doryphoros*, according to a canon of proportions that he himself explained in a book aptly entitled *Canon* (Galen, *De placitis Hippocratis et Platonis*, V, 449; Pliny, op. cit., XXXIV, 55), the latter to have written several books on proportion and on colors (Pliny, op. cit., XXXV, 129). Other theoreticopractical treatises were written by Xenokrates of Athens (ca. 280 B.C.), on sculpture and painting (ibid., XXXIV, 83), and by Menaichmos, on toreutics (ibid., XXXIV, 80; Athenaeus, *The Deipnosophists*, II, 65b, XIV, 635b, 637f). More properly descriptive treatises, often with curious information, were written by Douris of Samos (q.v.; 4th cent. B.C.), on painters and toreutics (FGrHist, 76F 31); by Adaios of Mitylene, on statues and composition (in painting), and by Antigonos (of Karystos ?), on toreutics and painting, fragments of which have come down to the present through the quotation in the treatise of Polemon of Ilium (FHG, III, 132–34); by Kallixenos of Rhodes, who is remembered for an inventory of painters and sculptors (FGrHist, 627T 1); and by Hegesandros of Delphi, on sculptors (FHG, IV, 421, 45). From the late Alexandrian and the Roman period are the treatises on painting by Hypsikrates (Diogenes Laertius, op. cit., VIII, 188), Theophanes (of Mitylene ?; FHG, III, 316, 7), and Melanthius (FHG, IV, 445); those on painting and painters by Juba II (FGrHist, 275F 80–96), Pamphilos (FHG, IV, 466), and Artemon (FHG, IV, 343, 13); and many others of which only the titles and authors' names are known.

Next to the treatises descriptive of the individual arts may be placed the works of the periegetics, that is, of the travelers who loved to take notes on the monuments they visited. These artistic-antiquarian periegeses must be distinguished from the more geographical ones, such as the "circumnavigations," which are not of interest here. The first of the periegetics is Diodoros of Athens (4th cent. B.C.), who wrote a treatise on the (sepulchral ?) monuments of Athens (FGrHist, 372); from the 3d and 2d centuries B.C. are the description of Samos by Menodotos (FGrHist, 541), *The Periegesis of the World* by Polemon of Ilium (FHG, III, 108–26), a work on the Acropolis by Heliodoros of Athens (FGrHist, 373), and a treatise on the *anathemata* of the temples of Delphi by Alexandrides of Delphi (FHG, III, 106–07). Writers from the 2d and 1st centuries B.C. include Mnaseas of Patras, with a periegesis across Europe, Asia Minor, and Libya (FHG, III, 149–58); Alketas, with a description of the dedicatory offerings at Delphi (FGrHist, 405); Semos of Delos, with a description of his island (FGrHist, 396F 1–22); Demokritos, with a work on a temple at Ephesus (FGrHist, 267F 1); Sokrates of Argos, with a description of the Argolids (FGrHist, 310); Antigonos, with a periegesis of Macedonia (FGrHist, 775); Phlegon of Tralles, on Sicily (FGrHist, 257T 1); and others about whom little is known. Pausanias, the last and the best of the periegetics, was a Greek perhaps from Asia

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Minor; his work, the *Periegesis of Greece*, almost completely extant, was written under the Antonines, A.D. 143–61 and after 176. The historicotopographical descriptions of the Greek regions follow this order: I, Attica; II, Corinth; III, Laconia; IV, Messenia; V–VI, Elias (including Olympia); VII, Achaia; VIII, Arcadia; IX, Boeotia; X, Phocis. The last part, containing descriptions of the northern regions and the islands, has probably been lost, although it is possible that the work was left unfinished. The *Periegesis of Greece* is a sort of guide that describes in topographical order principally the Greek religious monuments of the various regions beginning with the provincial capitals, with various historical and folkloristic digressions. The work was considered by some 19th-century scholars to be based almost entirely on earlier sources, without direct knowledge of the places mentioned, but present-day opinion tends to evaluate it in a more balanced way, considering the information in it, whether gained from literary sources or from actual journeys, substantially reliable, since topographic studies and archaeological discoveries have sometimes confirmed it. Pausanias's work has serious inaccuracies and gaps, but his aims and the religious spirit that inspired him must be kept in mind. The *Imagines* of Philostratus the Elder and the Younger, modeled on older treatises of Adaios and Antigonos, are of a more ecphrastic type, containing descriptions of 65 paintings in a collection that existed at the time (3d cent. of our era) in a villa at Naples. The 14 *ekphraseis* of Kallistratos, describing statues and paintings, are similar. These are typical products of the Severan age, which were to find successors in the Byzantine era.

The Latins had no treatises that can be compared with those of the Greeks. According to Vitruvius (op. cit., VII, pref. 14), the only Romans who wrote about architecture were a certain Fufidius, otherwise unheard of; M. Terentius Varro, in his *De novem disciplinis*; and Publius Septimius, a contemporary of Varro. Their writings, together with those of the Greek treatise writers (Pytheos, Metrodoros, Hermodoros, Hermogenes, etc.), probably in Latin translations or summaries, were used by Vitruvius (q.v.) in his *De architectura*. An uneven work, "a confused stringing together of lists and notes of various periods and sources" (to quote S. Ferri's introduction to his 1960 translation of the work) in an unpolished and rather difficult Latin, it is composed of ten books: I, Architectural Principles; II, Use of Materials; III, Ionic Temples; IV, Doric and Corinthian Temples; V, Public Buildings: Theaters, Baths, Harbors; VI, Town and Country Houses; VII, Interior Decoration; VIII, Water Supply; IX, Dials and Clocks; X, Mechanical and Military Engineering. Apparently Vitruvius wrote the more homogeneous parts (I–VII) at the invitation of Octavian when the latter was dealing with the construction problems of Rome (Vitruvius, op. cit., I, pref. 2). The work, the fruit of the author's experience as an architect, is, according to S. Ferri's introduction to the 1960 translation, "a perfect theoretical system of measure and proportion, to act as a general guide to future architects."

No less a compilation, and no less confused, is Pliny the Elder's *Naturalis historia*, especially the part in which he discusses artists and works of art, analyzed from a techniconaturalistic point of view; but in fact, Pliny's interest is primarily directed toward the materials used by artists, and only occasionally does he reach the point of listing works and artists. Of interest to the history of art are the last books of the treatise: XXXIII, On gold and silver and their use by sculptors and goldsmiths; XXXIV, On the casting of metals and on bronze sculpture; XXXV, On earths and mineral colors, sculpture in clay, and painting; and XXXVI, On marble and hard stone, sculpture and carving. Pliny classified sculptors in stone, painters, and goldworkers in order of merit but dealt with sculptors in bronze in chronological order, often in groups of three or four. In this it is clear that Pliny was following two or more sources that classified differently. The problem of identifying the sources Pliny drew upon was much discussed in the 19th century; and this is related to other problems concerning his working method. Sometimes he directly transcribed the source at hand; sometimes he treated the data of the source from his point of view; and sometimes he used the source as a point of departure for a long discussion. Among the works he consulted there was certainly a chronological source, Apollodoros's *Chronica*; a technicoartistic one, Xenocrates (apparently through Antigonos, whose work had been previously used by Varro); an anecdotal one, Douris of Samos; and lastly, a periegetic one, Licinius Mucianus (the *Acta*, now lost). But besides these he had a great number of other works at hand — handbooks, encyclopedias, catalogues of artists, technical treatises, collections of *mirabilia* (perhaps that of Pasiteles), etc. — so that it is difficult today to attribute individual passages to the various sources. Contemporary critics agree that Pliny, in his evaluation, substantially followed Xenocrates's Sikyonian canon, tempered by Antigonos's Pergamene canon (see IV, cols. 120–121), and that he used a critical terminology that gains in perspicuity and clarity when read in Greek (introduction to S. Ferri's translation of Pliny the Elder, 1946, pp. 5–29). Quintilian's *Institutio oratoria* (XII, 10, 1–12) also contains a passage on the Pergamene canon (see X, col. 97).

The modern concept of art criticism — that is, an independent and constructive activity and a means of reading and "reconstructing" the artistic work — did not exist among the ancients; therefore there were no treatises on art criticism, as there were none on esthetics. However, in the writings of the philosophers (Plato, Aristotle, etc.) and the orators (Dionysios of Halikarnassos, Lucian, Callistratus Sophista, etc.) there are statements on art that, although inspired by the concepts of "type" and of "form and material" in which they believed and which formed the basis of their education, can be considered the critical code of antiquity. Basically, the ancients, too, studied the work of art, trying to break it up into its constituent elements and determine their scope, but they did so according to their almost naturalistic mentality. For a long time the ancients were unable to escape the spell of the Platonic-Aristotelian concept of mimesis (q.v.), even though conceived as the artist's idea of reality ("art is a rational quality, concerned with making, that reasons truly"; Aristotle, *Nichomachean Ethics*, VI, 4, 21). With the advent of Plotinian theories (see IV, col. 122; V, col. 36), however, which no longer considered the imagination as a mere memory of images on a sensory level but as a superior activity on a noetic level whose function is to represent intelligible beings by images, the concept of art changed, since the function of the imagination was no longer to reproduce reality mechanically but to borrow forms and colors in order to express the world of ideas, that is, the world of the artist. Such theories had a determining effect also on the use of light and color and on the suppression of geometrical and aerial perspective and the use of inverse perspective; and these theories should be considered the foundation of medieval esthetics.

THE BYZANTINE WORLD. The tradition of the ancient Greek and Greco-Roman treatises found a certain continuance in the Byzantine world, above all effecting a literature descriptive of towns, places, and works of art, sometimes in prose and sometimes in poetry, and all of it extensively permeated by rhetoric. Although conceived in the form of a panegyric, the *De aedificiis*, by Procopius of Caesarea, which contains (I, 1, 27–65) a description of Hagia Sophia, is one of the most important sources for art history from Anastasius I to Justinian I. Likewise the *Topographia christiana*, by the contemporaneous Cosmas Indicopleustes, gives information on Egypt, India, and Ethiopia; the anonymous *Patria Constantinoupoleos*, a compilation from the 12th century attributed to Codinus (Pseudo-Codinus ?), is rich in information on the Constantinople monuments. Also of some usefulness are the *De excidio Thessalonicensi*, by Ioannes Cammeniata (10th cent.), for its description of the city, and the *Descriptio Trapezuntii* and *Descriptio Corinthi* by the brothers Ioannes and Marcus Eugenicus (15th cent.). Adhering more to the ancient ecphrastic type are the descriptions of the statues of the Gymnasium of Zeuxippos by Christodoros (of Thebes; 5th cent.); of Hagia Sophia, of its ambo, and of the Pythian Baths in the writings of Paulus Silentiarius (6th cent.); of various monuments of Gaza in the rhetorical works of Procopius, Coricius, and Ioannes of Gaza (6th cent.); of the Church of

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

the Mother of God at Constantinople in a treatise by Photius (9th cent.); of the Church of the Holy Apostles in works by Constantine of Rhodes (10th cent.) and Nikolaos Mesarites (13th cent.); of the statues destroyed by the Latins during the conquest of Constantinople by Nicetas Choniates (12th–13th cent.); of the Augusteion by Georgios Pachymeres (14th cent.); of the imperial tombs in the Church of the Holy Apostles by an anonymous writer, perhaps of the 14th century; and of sacred icons, in the works of several poets, from Georgios of Pisidia (7th cent.) to Christophoros of Mitylene (11th cent.), and Emanuele File (14th cent.). But the most original work, which illustrates the Byzantine esthetic concept and pictorial technique, is a rather late treatise, the *Hermeneia* (*Painter's Manual of Mount Athos*), by Dionysios of Furna, a monk and painter from about the middle of the 18th century. This work, a complete treatise on Christian iconography, sums up and codifies the long Byzantine religious pictorial experience. According to the author's preface, the exemplars were the paintings of Manuel Panselinos, famous painter of frescoes (12th cent.) in several churches of Mount Athos, and the technicoartistic precepts of the treatise mirror the practice of a Mount Athos pictorial school of his time. The *Hermeneia* is not, therefore, an official compendium, a canon of Byzantine art, as was thought, but a handbook that sets forth the practical knowledge of the workshops. Perhaps the author kept in mind similar earlier works, but not earlier than the 16th century. The first part explains the various technical processes of the art (transfer of the drawing; preparation of the glue, of the layers of plaster, and of the gilding, colors, glazes, lacquers, etc.); the second part sets forth the various types of representation of Old and New Testament episodes and of the life of the Virgin, the saints, and the martyrs; and the third part deals with the proper distribution of sacred paintings in a church and with the inscriptions to be added to the paintings.

THE MIDDLE AGES. Certain medieval treatises are part of encyclopedias of knowledge; others have their origin in liturgical concerns; others again have a more marked technological character; and still others are real didactic instructions intended for apprentices of the various arts.

A characteristic common to all medieval treatises is in fact the preeminent position assigned by the treatise writers to the technical aspect and to the artist's purpose (functional and utilitarian). For medieval culture in general, art was not an autonomous spiritual activity, but a process that aimed, through certain materials and techniques, to produce objects intended to serve particular aspects of daily life or to be used in religious functions. This concern with the extrinsic purpose of artistic activity and preeminence of the technical aspect are the two elements found in the treatises of craftsmen, who theorized in order to train their apprentices better or to acquire greater mastery of their own trade; in the treatises of men of culture, concerned with giving all knowledge an organic and definitive arrangement; and in the treatises of churchmen, who dictated the norms according to which houses of worship and ecclesiastical furnishings were to be formed. Naturally, the internal structure of the different treatises varies according to the authors: in treatises by craftsmen the technical aspect has greater importance and the functional, utilitarian purpose remains at a secondary level or is unexpressed; likewise at a secondary level, though not entirely lacking, are statements of general concepts concerning the nature of art. These general concepts are the main concern of the more or less encyclopedic treatises written by men of culture, although they do not attain, except indirectly, the level of philosophical definitions, in that, since painting and sculpture (in part, also architecture) were considered mechanical and applied arts, the definition of their essence coincided with their operative process, understood always as a technique subordinate to extrinsic purpose. In the writings of churchmen the treatment of the functional and utilitarian purpose, considered as extrinsic to the artistic ideation as such, is primary and predominant. Art is always considered a technique serving an extrinsic purpose, and the beauty of a work of art is an aspect of its aptness to its intended purpose. The historical reconstruction of medieval treatises must therefore take into account the different origins and structures of the individual treatments.

The *artes mechanicae* (painting and sculpture) were different from the *artes liberales* of the trivium (grammar, rhetoric, and logic) and the quadrivium (music, geometry, arithmetic, and astronomy), which were more sciences than arts. Architecture was considered an applied science or a technique based on science; this explains the ambiguity of its classification, for some treatise writers placed it in the category of pure technique while others elevated it to the dignity of a science.

A reference to architecture is made in one of the oldest liturgical treatises, the *Constitutiones apostolicae* — attributed to Pope Clement I (90–99 ?) but in fact from the 4th century — which contains the first reference to the relation of ecclesiastical architecture to the Roman basilica: "And first, let the building be long, with its head to the east, with its vestries on both sides at the east end, and so it will be like a ship. In the middle let the bishop's throne be placed, and on each side of him let the presbytery sit down; and let the deacons stand near at hand, in close and small girt garments, for they are like the mariners and managers of the ship" (II, 7, 57, trans. A. Roberts and J. Donaldson, Edinburgh, 1870, p. 83). The allegorical comparison of the basilica to a ship was to be found again in later treatises concerning the architecture of the basilican type; and the allegorical interpretation of the architectural forms, which is constant in every treatise written by churchmen, is furnished with further subject matter by a sermon of St. Augustine, in which, with reference to a religious building, he says that Christians should build within themselves "the perfection one sees in stone and wood."

An early example of a treatise of the encyclopedic-scientific type concerning architecture and the architectural figural arts is the *Etymologiae* of Isidore of Seville, written between the 6th and the 7th century; architecture, painting, and sculpture (limited to ornamental stuccoes, since statuary as such was regarded with suspicion as an idolopoietic art in Isidore's time) are here considered to be manual arts, intended for producing objects necessary in man's everyday activity (see HANDICRAFTS). In the chapter *De navibus, aedificiis, et vestibus* Isidore deals with architecture as an art (in the sense of a productive technique) born of man's need of a roof for shelter, and with painting and sculpture as decorative elements added to a building to make it more beautiful. In dealing with architecture Isidore, following the concepts of Vitruvius, says that there are three fundamental elements in a building: *dispositio*, *constructio*, and *venustas* (beauty).

The part dealing with painting, sculpture, and architecture in Isidore's *Etymologiae* is perhaps the earliest example of the medieval treatise, although it is summary and included in a work of encyclopedic nature, just as the *Constitutiones apostolicae* is a very old treatise inserted into a work dealing with liturgy. In relation to painting, the *Capitulare de imaginibus*, contained in the *Libri Carolini*, written at Charlemagne's behest, is analogous to the *Constitutiones apostolicae*. Just as the latter, by recourse to allegory, justified theologically the borrowing of architectural forms and techniques from Roman antiquity, so the former, by defining painting as a technique in the service of religion, purposed to justify, against iconoclasm, the use of images in places of worship while at the same time limiting their scope. The function of painting is to recall the *res gestae*; and against idolatry, which attributes to the image a sacral quality in itself and through itself, the *Libri Carolini* stressed the human aspects of production and workmanship inherent in the images and consequently their ability to achieve a greater or lesser degree of beauty according to the personal qualities of the artisan. Images of better workmanship and more valuable material are to be admired because of their craftsmanship and the quality of the material, not because of devotion, which is due not to images as images but to God and the saints. From this limitation emerges a recognition of artistic quality (see IV, col. 124).

The compilation of the *Libri Carolini* dates from the last decade of the 8th century, and not until the 10th century is

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

there a treatise, rudimentary though it may be, that deals with the technical processes of the artisan and presumably springs from direct personal experience of those processes: the so-called "recipe book" of Heraclius, entitled *De coloribus et artibus Romanorum*. Nothing is known of its author, and the name Heraclius seems to be fictitious or borrowed from mythology. The content of the treatise is predominantly of a magicotechnological nature, not without admiration for Roman antiquity, conceived as a sort of *Paradise Lost* of man's knowledge and magic power. Of special interest is the part composed of numerous formulas and technical processes dealing mostly with illumination, glasswork, and goldwork.

About a century after the "recipe book" appeared the *Schedula diversarum artium*, written by a certain Theophilus and compiled toward the middle of the 11th century by the German monk Rogkerus (Rugerus) of Helmarshausen, who lived in the Ottonian artistic and cultural environment. The *Schedula*, which was first discussed in a 1774 article by G. E. Lessing (*Vom Alter der Ölmalerei aus dem Theophilus Presbyter*, in *Lessing Werke*, IX, Stuttgart, 1869), has a proem of a philosophical and theological nature and three books dealing with illumination and mural painting, the making and pictorial decoration of glass, and goldwork. The *Schedula* is of particular importance because the technical processes therein described from direct experience are accompanied by theoretical references indicating that the author was fully aware not only of the nature (in the ecclesiastical culture of the Ottonian empire) of the artistic function in the decoration of cult objects and buildings but also of the value added to these, in relation to their direct liturgical purpose, by the beauty of the decoration. The *Schedula diversarum artium* may thus be considered a rudimentary summary of the Ottonian-Romanesque esthetic ideas. These ideas, although they shared in the general medieval conception, were characterized by the particular importance attributed to the beauty of artistic objects as a fundamental coefficient of their aptness to their functional and utilitarian purposes. Therefore, according to the author of the *Schedula*, the pictorial decoration of walls and vaults, with its abundance of images and of colored ornamental elements, is responsible for the fact that the interior of the church — that is, of the environment intended for worship — came to be constituted as a space, which seems, because of its beauty, to be exceptional and set apart from everyday worldly experience: an anticipation of Paradise in this world. The restrictions of extrinsic purpose and the freedom of pure decoration are reconciled in the *Schedula*: images that are to be executed according to the strict prescriptions of iconography and with the intention of visually transmitting certain meanings have at the same time an ornamental function that increases the beauty of the object intended for liturgical use, while the other images, in which the inventive inspiration of the craftsman may be freely released, combine to make the object more beautiful; and the more beautiful it is, even from the simply ornamental point of view, the more it corresponds to its extraesthetic — that is, liturgical — purpose.

Chapter 12 of the *Apologia ad Gulielmum sancti Theodorici abbatem*, by Bernard of Clairvaux, contains material indirectly referable to treatises on art. This chapter, dealing with the relation between the form and decoration of places of worship and the mystical experience as it was conceived by the Cistercians, prescribes not what the monks ought to do to make their churches correspond to functional and utilitarian purposes but what they ought not do (see IV, col. 125); Bernard, in fact, denounced the abundant decoration whose principles and criteria Theophilus had laid down a hundred years before. In this respect Peter Abelard concurs with Bernard. Abelard, in his *Epistulae ad Heloisam* (in PL, vol. 178, Letter VIII, pp. 279–82), prescribed that the cloister oratory must not have precious ornaments but must be characterized by a stark severity. A completely different opinion was held by Abbot Rupertus (*De divinis officiis*), who advises the adornment of churches with as many gold and silver decorations as are compatible with the means of the faithful.

The tradition of interpreting ecclesiastical architectural forms in allegories, which goes back to the *Constitutiones apostolicae* and St. Augustine, continued uninterruptedly through the Middle Ages, providing material for a series of writings that, in whole or in part, fall within the scope of this article. In the early-12th-century *Gemma animae*, by the monk Honorius of Autun, the elements of the basilica are anthropomorphously interpreted. Besides this interpretation, in which the church structure, according to an analogy already formulated by St. Augustine, represented the body of the faithful purified by grace, Honorius formulated another allegory: the church as a building was the image of the Church as an institution. The transition from the anthropomorphous to the institutional allegory came about by way of the Song of Songs, which was also interpreted allegorically. On the basis of this complicated system of allegories that allegorized other allegories, Honorius of Autun described the ideal basilica.

Closer to architectural practice, although at the same time faithful to the tradition of allegory, was one of the most important treatises on ecclesiastical architecture of the Middle Ages, the first book (*De ecclesiae aedificatione, ornatu et utensilibus*) of the *Mitrale seu De officiis ecclesiasticis summa*, compiled by Sicardo (Siccardus), bishop of Cremona (d. 1215). The church, said Sicardo, after having begun this part with a verse from Tobit — "Lapidis pretiosi omnes muri tui et turres Hierusalem gemmis aedificabuntur," which permits him to connect his treatise with the allegorical theme that saw the Church as the New Jerusalem on earth and as a worldly prefiguration of the heavenly Jerusalem — should "rise on high, long and wide" and should contain "railings and pulpits, columns with bases and capitals"; while outside it should have "cemeteries, towers, and cloisters." The *Mitrale* of Sicardo also contains prescriptions regarding the utensils destined for liturgical use. Sicardo's work is thus one of the most exhaustive of the treatises produced by churchmen for liturgical ends, and it includes, as well, clear ideas regarding the spiritual purpose of art and the essential and intrinsic value of its beauty as a means to that end.

The *Libellus de consecratione ecclesiae sancti Dionysii* (1154) and the *Liber de rebus in administratione sua gestis* (1149), both by Suger, Abbot of St-Denis, preceded Sicardo's work by a few decades. The *Liber* contains a detailed report of the reconstruction of the basilica of St-Denis, planned and directed by Abbot Suger; the *Libellus* describes the previous state of the basilica, whose oldest parts dated from the Merovingian period, and the new basilica, which incorporated as much of the older structure as possible. From these descriptions and reports there emerges a clear picture of Suger's ideal ecclesiastical structure: it should have an abundance of pictures on the inside walls; coverings of precious materials and a profusion of gold, silver, and jewels; stained-glass windows executed by the best craftsmen from every country; and so on. The theologicophilosophical comments that accompany the historicodescriptive annotations are of particular importance. From them emerges the idea that the ecclesiastical building, through the beauty of the craftsmanship and the precious materials used, is a passage that leads man, through his senses, to direct contact with the supersensory truths of the mysteries celebrated there. While Sicardo's treatise, although later than the two historicoapologetic works of Suger, expounds the Romanesque ideal of the church conceived as a space closed in by walls that isolate it from the surrounding world, the writings of Suger give preeminence to light as a coefficient of beauty and of anagogical functionality, inseparable from each other, and expound the new Gothic concept of the ecclesiastical building as a transparent universe, material and abstract at the same time.

The fundamental *Livre de portraiture* by Villard de Honnecourt is based on the artistic act and the technical examination of it. Villard de Honnecourt was a 13th-century Picard architect who traveled widely in France and the rest of Europe. In his treatise interest is directed solely to artistic techniques — more precisely, to geometric design as the basis of architectural planning and construction. According to Villard de Honnecourt, geometry is basic not only to the structure of buildings but also to the ornamentation, which is as indispensable as structure to buildings — and to the furnishings, which he discusses, giving precise instructions on the making of a church

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

lectern. This inseparability of structure and ornament is a fundamental aspect of Gothic art, and at its base lies geometry, the essence not only of structure and ornamentation in man's creations but also of Creation itself. The mathematical essence of the cosmos is the mathematical essence of construction. Villard de Honnecourt's treatise presupposes the lifting of the operative processes of the architect and the maker of utensils to the level of a science, a mental activity; thus it represents an early assimilation into the liberal arts of an art that had been considered up to that time a constructional and mechanical activity: *iometrie*, that is, the art of design mathematically calculated as a function of the technique of construction, an application of geometry, the pure art of measuring spaces mathematically, which Martianus Capella and after him all of medieval culture had included among the liberal arts as the second art of the quadrivium.

Villard de Honnecourt's book may be considered the first organic treatise on medieval architecture; in it architecture is considered not for its possible allegorical meanings but in relation to the operative process of the architect. This process begins with an intellectual operation, a mathematically calculated design, and guides the work of the builders under the direction of the architect. The architect is thus the ideator, the planner, and the head of all the workers — an operator who participates directly in the manual work, the mechanics of the art of construction. Albertus Magnus (b. 1206/1207), in the first book of the *Metaphysics*, claims that architects are superior to purely mechanical craftsmen because they know the reasons for what they do. Villard de Honnecourt and Albertus Magnus, then, among the medieval treatise writers, may be considered the ones who most clearly anticipated — or perhaps combined to lay the ground for — the appreciation of the ideative and intellectual essence of all the arts that developed in 15th-century Florence and was to be the beginning of the modern view of art.

Vincent of Beauvais, a contemporary of Albertus Magnus, wrote the *Speculum maius*, a universal encyclopedia of knowledge based on updated versions of previous works of this type; his work is still an exemplar of the art treatise included in a philosophicoscientific encyclopedia. In the *Speculum naturale*, one of the three parts into which the *Speculum maius* is divided (the other two are the *Speculum doctrinale* and the *Speculum historiale*), Vincent metaphysically defines beauty as a quality of the whole universe, while in the *Speculum doctrinale* he provides theoretical definitions of paintings, sculpture, and architecture. In the definitions of paintings and sculpture he is close to Isidore of Seville, often repeating him textually; in the definition of architecture he sets out concepts that go directly back to Vitruvius's treatise, whose vitality had endured throughout the entire Middle Ages. The only novelty in the encyclopedia is furnished by the esthetic context resulting from the definition — corresponding perfectly to the spirit of Gothic architecture — of beauty as concordant multiplicity and variety, an indivisible union of function and ornament.

Villard de Honnecourt, Vincent of Beauvais, and Sicardo of Cremona are the three most significant treatise writers in the 13th century, respectively in the technicodidactic, ecclesiasticoliturgical, and scientificoencyclopedic fields. Among the ecclesiasticoliturgical writings may also be mentioned the occasional notes found in the oldest documents of the Franciscan order, especially in the work of St. Bonaventure of Bagnorea (Bagnoregio). Such notes are included, for instance, in the statutes of the *Constitutiones generales narbonenses* limiting figured ornamentation and lavish decoration in Franciscan churches and in a tract by St. Boneventure justifying the fact that the Franciscans built their convents and churches in the cities so as to spread devotion among the townsmen. These, however, are merely tangential notes and cannot be included among the true treatises. But the *Rationale divinorum officiorum* of Durand de Mende (d. 1296) is a systematic exposition of the liturgical significance of ecclesiastical architecture and furnishings. The work, with the usual anthropomorphic and anagogical allegorism, may be considered a sort of *summa* of medieval treatises from the liturgical point of view.

Recipe books on the preparation of the colors used in painting are numerous in the 13th and 14th centuries, texts in which usually some rudiments of chemistry are intermingled with directions concerning artistic technique. The *Libro dell'arte* of Cennino Cennini, a Florentine painter of the Giotto school, belongs in this category; but it surpasses all others for its organic quality and its thoughtful examination of the essence of painting. Just as the *Livre de portraiture* claims for architecture and for all forms of design the dignity of science based on *iometrie*, so the *Libro dell'arte* maintains that painting is the daughter of wisdom. Painting is in fact, according to Cennini, an application of science effected through the hands: "Painting . . . calls for imagination and skill of hand, in order to discover things not seen, hiding themselves under the shadow of natural objects, and to fix them with the hand, presenting to plain sight what does not actually exist" (C. Cennini, *Libro dell'arte*, in E. Holt, *Documentary History of Art*, New York, 1957, I, p. 137). The art of painting, according to Cennini, is no longer an *ars mechanica*, simply a manual technique; the technical aspect, which is analyzed carefully and explained with scientific and didactic precision, is the execution of an idea elaborated by the imagination under the stimulus of the noble spirit. In Cennini's insistence on the noble spirit as the principle of the vocation of painting and on the intrinsic morality of painting, which demands, love, respect, obedience, and perseverance, there is a vindication of the nobility of painting as an art embodying science and virtue, not simply a mechanical art. And Cennini affirms that the basis of painting is drawing, as an operation of the intellect, which "will take delight in drawing" (ibid., p. 138). Even though many of Cennini's definitions stem from the medieval tradition, the spirit in which he uses them, transcribing them in their proper context, is a new and different one, in which the intellectual basis of pictorial art has an importance that no previous author had ever dared to confer on it. What emerges from the *Libro dell'arte* is a concept of painting as an operative process which is born of sentiment (the love that decides the vocation of artists) and which arouses in the imagination the desire to present "what does not actually exist." This desire is the starting point for the pictorial process, by which, while observing a rock, the painter can draw a mountain. The phases of this process are drawing — an operation in which the intellect delights and therefore a mental operation translated into a material technique — and coloring, also not an exclusively manual operation because it draws on several sciences and demands nobility of mind and of spirit. Ideation and craft were thenceforth to be two phases of a single process. It is because of this concept that, after the *Libro dell'arte*, the medieval phase of the art treatise, which treated art either in its purely craft aspect or from the point of view of its ulterior purpose, came to an end.

Rosario Assunto

The Renaissance and mannerism. *The early Renaissance.* With the 15th century the concept of art changed radically and was presented in completely new terms. There emerged a concept of art as the imitation of nature (see MIMESIS), realized through scientific knowledge of natural laws. Art was identified with science and, even as early as the writings of Alberti (q.v.), tended to be expressed in terms of a true science of vision founded on Euclidean geometry. Such a recognition implied the redemption of art from the "mechanical" sphere and its elevation to the ranks of the liberal arts (see VII, cols. 270, 275), affirming the superiority of intellectual value over material and technical values and of theory over practice — or, better, the principle according to which practice must be guided by scientific law and be identified with that law. Painting, defined by Alberti as an intersection of the visual pyramid and a surface representation of depth, is based on optics (see OPTICAL CONCEPTS) and on perspective (see XI, cols. 204–206). In addition, Alberti, the true father of the Humanist theory of the figural arts, put forward with new evidence the concept of the beautiful as harmony, that is, as a concert of all the parts among themselves and with the whole (the "eurythmy" of Vitruvius). The natural law of symmetry that characterizes the human body and makes it a harmonious image is thus the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

basis of beauty; and because Renaissance philosophy places man at the center of the universe, a microcosm reflecting the macrocosm, the human figure, with its symmetrical and perfect proportions, seemed to reflect the symmetry and harmony of the universe and became the center and measure of all things. Since this harmony consisted in geometrical, mathematical, and proportional relationships, it followed that beauty lay in the perfection of numbers and of pure geometric forms such as the circle and the sphere.

Such a rigorous anthropocentric and mathematical concept, dominating all the arts of the Renaissance, caused the medieval concept of the beautiful as ornamentation added to form to be replaced by the concept of form beautiful in itself even if unadorned. The reaction against the flamboyant Gothic and the repudiation of pleasing materials, of polychromy, and of decorative details took place in the name of the new theoretical principles. Furthermore, the principle of the hierarchy of types, subsequently maintained up to the 19th century, derived from the same anthropocentric concept. The most noble type was certainly considered that which portrayed man and human action. Painting was essentially narrative, the painting of "history," that is to say, the representation of human actions (these being derived from mythology and from ancient and sacred history). If such was the scope of painting, it was not merely science but an art, a *poesis*: the Horatian principle of *ut pictura poesis* was revived by Alberti and remained a constant theme for more than four centuries, the true pillar of Humanistic esthetics (see HUMANISM, col. 723 ff.). Since in order to represent history the painter had to know it, he extended even more the radius of his own culture, which became encyclopedic, equal to that of the historian, the scholar, and the poet, and therefore aspired to win a similar social status. Naturally in the 15th century portraiture also had a historical justification and was considered a type as worthy as the historical one in the strict sense. It was only in the 16th century that other autonomous types were to appear — landscape, still life, scenes of everyday life — and a true hierarchy of subject matter was to become established in an explicit form (see below).

Another fundamental concept, which had already appeared in Alberti's work, was that of decorum, understood in two senses: as seemliness, morality, the repudiation of immodest and shameless subjects, and as fidelity to history and to the character of what was represented. In this sense it would have been an error of decorum to represent Mars as an ephebus or Apollo with the muscles of Mars. The artist was obliged to know the texts perfectly and to represent historical personages with their exact attributes.

The theoretical treatises of the early Renaissance, unlike those of the Middle Ages, were not aimed at the practitioners of art but at the Humanists. The three treatises of Alberti — *De pictura*, dedicated to Brunelleschi, the first theoretical writing of the new era; *De statua*; and *De re aedificatoria* — were written in Latin. Architecture is dealt with from Vitruvius's viewpoint, on the basis of the concepts of *firmitas*, *utilitas*, and *venustas*, and on the basis of his typology. In architecture, too, anthropocentrism is realized through the theory of proportion.

The new theoretical system was also developed in texts that cannot be called treatises and therefore are not included in this article (for these, see HISTORIOGRAPHY). Of this type, for example, and rich in theoretical content, is the *Commentarii* of Lorenzo Ghiberti (q.v.). Book III is a true theoretical treatise on art, which the author seeks to establish on the new scientific bases.

Schlosser has placed among the "romantics" Antonio Filarete (Averlino), a Tuscan architect and sculptor in bronze, active in Milan and Rome, who wrote his treatise (1451–64) in the form of a dialogue. The idea of the antique is very strong in Filarete, but it is accompanied by a romantic enthusiasm that colors antiquity with a fairy-tale quality, in the late Gothic manner. The foundation of an ideal city, Sforzinda, holds a preeminent position in the text; it translates for the first time into the field of town planning that rational spirit and ideal of regular beauty which was being realized in the construction of the city of Pienza, sponsored by Pope Pius II. Moreover, Filarete established architectural types, dealt with optics and perspective, and advanced a theory of color.

Dominant among the pure theorists were Francesco di Giorgio (q.v.), who wanted to be a modern Vitruvius and who published a quantity of drawings and measurements of ancient buildings; Piero della Francesca (q.v.), author of *De prospectiva pingendi*, based on Euclidean foundations; and Luca Pacioli, author of *De divina proportione* (see XI, col. 721). These three theorists were in touch with one another at the court of Urbino, where the geometrical ideal was formulated with extreme purity, later spreading out until it influenced every school of the Italian Renaissance.

The High Renaissance. The artistic theory of the 15th century culminates in the personality of Leonardo da Vinci, who, as is known, was more interested in research than in implementing the findings, more insatiable in investigation than prone to mull over the results (this is why so few of his works remain). But all the theoretical and scientific material that poured into the famous manuscript in sketches and drawings takes on the true value of artistic creation. This reduction of art to a science of vision illuminates the science itself with the genius of the artist. His thought was not bound by a fixed system: he was interested in proportion but studied it also in connection with psychic and physical movement; and he elaborated the concept of vision by accentuating the shifting values of light in shading off, that is, in the graduated passage from light to dark and in aerial perspective (see XI, cols. 209–210). The same desire to capture the most subtle and fleeting movement of the spirit appears in his studies of psychological expression and physiognomy.

It is important to emphasize that only a draft, a series of annotations and sketches, of Leonardo's treatise is extant. This explains the slight influence the treatise exerted in the 16th century, limited to Albrecht Dürer, Ambrogio Figino, and Giovanni Paolo Lomazzo. Leonardo was nevertheless the great anticipator of the century of Galileo and laid the basis of the experimental method and of the modern concept of science as investigation.

Leonardo sums up in his person the Renaissance ideal of universality. In his *Paragone* he deals with the preeminence of the arts and maintains the superiority of painting, undoubtedly a natural science through which one gains experience of the universe, the only experience that leads to knowledge. With such positivism, which opposed Platonic-Aristotelian natural and speculative philosophy and could have led Leonardo before the Inquisition, he anticipated by more than a century the revolutionary concept of science as investigation (see SCIENTIFIC AND MECHANICAL WORKS).

It should be pointed out that according to Leonardo the image is clearer and more determinative than the written word, and in this lies the cognitive value of vision and the superiority of painting to poetry. Sculpture, however, is considered inferior to painting because it demands a preponderantly manual procedure. But Leonardo's affirmation of the superiority of the ideal and cognitive values in respect to the practical and technical values of art is clear.

Antiquity and the style of the masters had but slight interest for Leonardo: nature is at the center of his theory. He defines art as an imitation of nature and declares that he who imitates other imitations is the grandson and not the son of nature. Leonardo lacks, consequently, an abstract concept of ideal beauty. The canon of perfect proportion is drawn from the direct study of reality and is not presented as an apriori design for perfection. Leonardo lastly discusses, with many subtle observations, the problems of relief, movement, color, proportion, and anatomy.

Other 16th-century treatises discussed the scientific qualification of art — for example, the lost work on anatomy by Il Rosso and the *De dissectione partium corporis humani* (Paris, 1545) by Charles Estienne — as well as perspective (J. Peckham, *Perspectiva communis*, Venice, 1593) and optics. Scientific interest lasted throughout the 16th century, and treatises often expounded on proportion, anatomy, perspective, and the like.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Discussion of the universality of the artist continued. In a didactic poem (*Trattato di pittura*, Rome, 1509) Francesco Lancillotti describes a vision: during a sea voyage, Painting appears to the author as a lady worthy of reverence and laments her exclusion from the liberal arts. Besides this thesis, set forth in the allegorical and symbolical terms characteristic of the century, Lancillotti discusses the concept of the *bella maniera*, *disegno*, color, composition, and invention, which were soon to be considered esthetic categories.

In the *Due lezioni sopra la pittura e la scultura*, published in 1546, Benedetto Varchi exalted the cult of Michelangelo, a typical mannerist attitude also evident in the *Disegno partito in più ragionamenti*, by Anton Francesco Doni (1549). While Varchi considered sculpture and painting to be equally noble arts, B. Cellini (letter to Varchi, in P. Barocchi, *Trattati d'arte del Cinquecento*, I, pp. 80–81) held that sculpture is superior to painting (see X, cols. 102–103). Although Michelangelo's thesis that favored sculpture was widespread, the technical and scientific sense of the definition of art was not obscured. The *De sculptura*, by Pomponius Gauricus (Gaurico), was written in the classical dialogue form; Gauricus, who was born in Salerno in 1482 and worked in Florence, Germany, and the Low Countries and who knew the works of Philostratus the Elder and the Younger and Pausanias, Pliny, and Vitruvius, not only reiterated the importance of the theories of proportion but also developed the theory of the "pregnant moment," i.e., the moment that is capable of synthesizing what has happened and what is about to happen and of suggesting the temporal development of the scene represented.

Paolo Pino, in his *Dialogo di pittura* . . . (Venice, 1548), exalted virtuosity and artifice is a new way representative of manneristic taste. Schlosser (p. 244) described Michelangelo Biondo's treatise (*Della nobilissima pittura*, Venice, 1549) as "medieval scholasticism gone mad." The treatise (*L'idea del teatro*, Florence, 1550) of the Friulian Giulio Camillo (Delminio) manifests a cabalistic and mythological erudition and opens a door on cosmic secrets. These treatises are examples of the manneristic orientation toward experimental research into new and secret laws, toward the curious, the wonderful, and the rare, which characterized the boldest points of the movement and which opposed classical and natural rules with the taste for the exceptional and the irregular, that is, a restless and anticlassical taste.

Mannerism. The mannerist concept of art remained, however, absolutely rationalistic; almost all the artists were theorists and almost all the treatises were written by artists, who claimed, in fact, to be the only ones competent to judge art, thus liberating themselves from subjection to patrons and buyers. Artistic academies were modeled on the literary ones — a triumph in the struggle to have the *arti del disegno* included in the liberal arts. Artists were differentiated from artisans, and the concept of *disegno* (the intellectual process in the creation of a work of art) affirmed the superiority of the "idea," the invention, or the *maniera* over the pure and simple technique of imitation. The theory of art as mimesis (*ars simia naturae*) was of course reiterated, and in architecture, too, imitation of natural models was spoken of; but the theory of art perfecting nature was beginning to appear. The "idea" and the *maniera* indicated the intention of the artist, and imitation was subordinated to this intention; although the influence of Aristotle and Castelvetro was still evident, there was a move toward the Platonic concept that the "idea" actually exists.

To sum up, it can be said that the mannerist treatise writers introduced all the theories and concepts that were to be influential in art for two hundred years; and in order to evaluate the tendencies of each writer it is therefore necessary to establish how these various theses and ideas were organized in his system and which ones predominated. One typical concept was that of the genius, the divine artist, the beautiful madness of inspiration, as well as the corollary that one cannot learn art but is born an artist. This thesis is in clear contrast to the contemporaneous concept of didacticism and of art as a product of rules, systems, and perfect models.

The Middle Ages had accepted the profane in allegories and moralities. With Savonarola there had been the most violent antipagan movement, which included all the arts considered hostile to Christian life. Against this background appeared the *delectando docere* theory. Art became an instrument for the diffusion of knowledge, in antithesis to the hedonistic concept characteristic of the era of Raphael, which was to be reaffirmed only in the baroque period. The old comparison culminated in the formula of *ut pictura poesis* (as with painting, so with poetry), affirmed in ancient times by Aristotle and Horace (*Ars Poetica*, 361). This theme, already put forward by Alberti, now became central and was to dominate until the middle of the 18th century. The Renaissance thesis of art as the representation of human action was developed to its extreme consequences.

The concept of decorum, understood in the two senses mentioned above, also goes back to antiquity. While the seemliness and moral aspect of decorum was developed by the moralists and by the treatise writers of the Counter Reformation, the aspect of fidelity to the subject represented and to historical reality became even more widespread and led to the establishment of iconographic and emblematic types. The moralists drew attention to the sins against decorum committed by Michelangelo, and they did so in the name of a theory that was the direct consequence of the preeminent position given to the historical and mythological content.

It may then be concluded that especially toward the end of the 16th century investigation was replaced by the codification of acquired knowledge, to the advantage of young artists. The treatise, then, assumed the value of a manual and an introduction, both theoretical and practical, to the profession.

The concept of beauty was not yet central, as it was to be in the baroque period, and the *bella maniera* rather than *arte bella* dominated. Thus arose the thesis of eclecticism as a synthesis that the artist must work in the styles of the masters and as a synthesis of nature and *maniera*. Beauty lay in the appearance of the idea. Vincenzo Danti (*Trattato delle perfette proporzioni*, Florence, 1567) placed beauty in relation to the aim: for example, anatomy would demonstrate the correct function of the limbs, which are in themselves beautiful since they are related to their function. Nature is imperfect due to its extensive accidental quality, which impedes the realization of forms; and art must emend such defects, restoring to the forms that perfection which was the intention of nature. On this subject the distinction Danti made between imitating and portraying is very clear.

Giorgio Vasari, the founder of art historiography, in the preface to the 1568 edition of the *Lives* defined painting, sculpture, and architecture as *arti del disegno*, making *disegno*, understood as a technique and as ideation, their common foundation. *Disegno* is "visual expression and declaration of a concept existing in the soul and what is imagined in the mind and constructed in the idea." The base of the three arts was *disegno* inasmuch as it was a technique of imitation, capable therefore of progress and improvement, a technique that reconciled the imitation of nature with invention and *maniera* (style). The most typical exponent of manneristic theory was Giovan Battista Armenini, who expressed even in the title of his treatise, *De' veri precetti della pittura* (The True Precepts of Painting), the tendency to establish theoretical and practical rules in order to have "a beautiful and learned style," offering a choice not only within nature but also among the examples afforded by the art of the great masters (see ECLECTICISM).

The last exponent of the century was Federico Zuccari (Zuccaro), crowning example of the cultured artist. He was a head of the Accademia di S. Luca in Rome, and his writings manifest the development the academies were to follow as centers of theoretical elaboration and of official control of taste and criticism. With sincere philosophical ambitions and with considerable ability in the use of scholastic language, he explained more clearly than others the theory of the *disegno interno* (inner design, or idea) and the *disegno esterno* (outer design, or technique). The same concept is found in the treatise by Giovanni Paolo Lomazzo (*Trattato dell'arte della pittura* . . .,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1584), the most important work to appear in northern Italy; ideal beauty is conceived in the neo-Platonic sense, as an image derived from God that exists in the mind of the artist, a concept in complete harmony with the spirit of the Counter Reformation. Lomazzo did not insist on the exemplary quality of the ancients; on the contrary, by defining painting as imitation in terms of perspective and by dealing at length with proportion, distinguishing between real proportion and optical illusory proportion, he assumed an anticlassical position. Leonardo's influence on Lomazzo is apparent in the latter's concern with emotions, or rather the passions or expressions, which are perfected by the study of mimicry and character (see CHARACTERIZATION: PSYCHOLOGICAL, PHYSIOGNOMICAL, AND ETHNIC), and in his attention to the phenomena of color and light.

The artistic culture of Venice, which expressed a world dominated by a lack of interest in theory and by a sensual and hedonistic sensitivity manifested in art through the use of color, is at the foundation of the writings of Pietro Aretino (*Lettere sull'arte*, 6 vols., 1537–57), Paolo Pino (op. cit.), and Lodovico Dolce (*Dialogo della Pittura . . .*, Venice, 1567). Aretino was an admirer of Titian and Tintoretto. Like him, Dolce was not an artist but a writer who supported the liberty of genius even while repeating that the artist must surpass nature and imitate reality not as it is but as it should be, and even while considering the ancient as exemplary. He did not believe in proportion because movement destroyed it, which means that he felt the irreconciliability of proportional and mathematical vision to sensual and naturalistic vision. However, he gave considerable importance to color and to the phenomena of light and shade, which are the basis of Venetian hedonism.

Some treatises were direct products of the Counter Reformation (see REFORMATION AND COUNTER REFORMATION), following the course indicated of the Council of Trent, which in 1545 began the struggle against the iconoclasm of the northern reformers and the paganizing hedonism that had animated the esthetic appreciation of images during the Renaissance.

In his *Due dialoghi . . . degli errori ed abusi de' pittori nei quadri storici* (1564), Giovanni Andrea Gilio, a churchman, dealt with "the errors and abuses by painters of historical scenes" and condemned the virtuosity that replaced iconographic fidelity to the subject represented. He took up the theory of decorum in order to lead the painter back to fidelity to the sacred texts and even went so far as to readmit to the artistic sphere the ugly and the horrible — necessary qualities in the representation of the martyrdom of the saints. He also dealt with decorum in the sense of seemliness and modesty; and throughout the late 16th century and after, in the treatise as in art history, examples abound of diatribes against nudity and the presumed lack of modesty.

Other Counter Reformation writers were Johannes Molanus (Jan Vermeulen; 1570) and Gabriele Paleotti (1582; see XI, col. 909). These were moralists, who wrote without being art connoisseurs. Their example was to be followed in the 17th century and later.

Architectural treatises in the 16th century. Vitruvius's text was rediscovered in 1414 at Montecassino, but, as mentioned previously, it had not been completely unknown during the Middle Ages. However, it was republished in 1486, then in 1496 and on up to the important edition of Fra Giovanni Giocondo (Venice, 1511, 1513), which contained woodcut illustrations. This classic edition was followed by a translation with commentary by Cesare Cesariano (Como, 1521), who was a student of Bramante and who developed the theories of *triangolatura* and *quadratura*. In 1556 in Venice Daniele Barbaro's translation was published, followed by Giovan Battista Bertano's commentary (1558). Vitruvius's text was soon translated in other European countries. The various 16th-century treatises on architecture revolve around Vitruvius, in particular those of Antonio Labacco (1552), Pietro Cataneo (1554, 1567), G. A. Rusconi (1590), and G. B. Montano (1608).

In 1542 Claudio Tolomei from Siena, Ferdinando Maffei, G. Philander, Giacomo da Vignola, and others met in Rome to found the Accademia della Virtù and to prepare an edition of Vitruvius. This program was carried out by the above-mentioned writers and by others throughout the course of two centuries.

Among the original treatises the first in chronological order and the most widely read and circulated was the *De partibus aedium*, by Francesco Mario Grapaldi (Grapaldus; 1494), many times republished and translated up to 1618. Architectural theory, which had been developed by artists during the 15th century (Brunelleschi had begun the studies on perspective and had applied his knowledge of proportion and the module to his buildings), now spread among the *signori*, i.e., the dilettantes and the patrons, who claimed for themselves the pleasure of planning. There is a clearly classical orientation in Giangiorgio Trissino's treatise, which has come down to the present day in fragments (*Frammento di un trattato di architettura*, Vicenza, 1878). The great architect Baldassare Peruzzi (q.v.) was an artist and theorist too, but his treatise has been lost; its contents are implicit in his drawings and notebooks, which are of great interest.

An admirer of Peruzzi was Sebastiano Serlio (q.v.), whose treatise was published in separate books beginning in 1537. Through him the Vitruvian classification of the five orders spread throughout Europe (Serlio lived and died in France). Among the illustrations there are numerous plans for Venetian palaces showing that the Tuscan style had penetrated into Venice. In Serlio's work is found the first treatment of the "painted façade," a type of decoration that had been widely spread by the school of Raphael. Furthermore, Serlio established the typological characters, as in the sets for tragedy, comedy, and satire. Vignola's treatise (1562) is more of a handbook; he set forth the rules and precepts more rigidly. Andrea Palladio (q.v.), in his *I quattro libri dell'architettura* (Venice, 1570), established the foundations of those architectural principles which were then to remain fixed and almost constant until the 19th century; he developed the theory of proportion with a puristic classical taste that was to give rise to the widespread phenomenon of Palladianism, so important in England and France.

With *Dell'idea dell'architettura universale* (Venice, 1615) Vincenzo Scamozzi (q.v.) opened the 17th century, adapting the theory of the "ideá" to architecture; his work, however, contains no innovations.

The treatise outside Italy. Italian theory spread slowly throughout Europe in various ways: through the presence in Italy of foreigners as invaders, pilgrims, tourists, or artists in search of work; through the activity of Italian artists abroad, called with increasing frequency to foreign courts; and through the dissemination of published treatises. The Renaissance style thus began spreading to countries still dominated by the Gothic taste, assuming new accents either through contact with traditions that were still medieval or through contamination by mannerist elements in Italy.

Once they discovered ancient and Italian art, the Germans, the French, and the Spanish sometimes became even more vigorous supporters of Italian art than the Italians themselves. The scientific spirit, considerably developed in northern Europe and especially in Germany, must have facilitated interest in a Humanistic concept of art. The first to spread to the north the art-science connection, by then consolidated in Italy, was Jean Pélerin le Viateur (Viator) with his *De artificiali perspectiva* (Toul, 1505). This was the first treatise to consider not the *perspectiva communis* — science, geometry, and optics — but the *perspectiva artificialis*, an artistic medium. It contains engravings of buildings, for the most part French, then extant.

The German yearning for the classical, so much the more acute because of the innate romantic and expressionistic spirit of the Germans, induced Albrecht Dürer (q.v.) not only to study Italian art and the ancient models but also to go deeply into theoretical research, studying proportion and perspective. He saw in beauty an almost unreachable ideal that man could approach through study, but above all through a divine gift (see IV, cols. 527–528). Dürer synthesized the Renaissance for his own country. He did not imitate the Italian artists but rath-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

er wanted to relive their art and that of the ancients within himself. Although Dürer did not consider his treatise on proportion (1528) a technical handbook, his followers used it as such. Because of the influence of Leonardo da Vinci and because of his own Germanic temperament, Dürer studied the typological and the ugly, whose phenomenology had been completely neglected by the Italian theorists and treatise writers.

In Germany the so-called "art books" directed to apprentices — not only to painters but to craftsmen in general — became popular at an early date. Walther Rivius (Ryff) published Vitruvius in German in 1543, the earliest edition outside Italy, and wrote a treatise (1547) dedicated to craftsmen, defined by Schlosser (p. 277) as "the true Bible of the late Renaissance in Germany." It is a real catalogue, based on Alberti and Serlio and illustrated with engravings derived from Italian models.

Other books or booklets were those of Erhard Schön (1538), Hieronymus Rodler (1531), Hans Sebald Beham (1528), Heinrich Lautensack (1564), and Jost Amman (1578), which constitute the beginnings of the practical treatise that was to flourish and reach its peak in the vast literature of the *libri di modelli* (model books).

In France, after the treatise on perspective by Jean Pélerin le Viateur, there appeared in 1543 the *Annotationes* of G. Philander, and in 1547 the first French Vitruvius, translated by Jean Martin and with engravings by Jean Goujon. Original treatises were those of Philibert Delorme (1561, 1567) and J. A. Ducerceau (1559, 1561).

In the Iberian Peninsula the first influence of the Italian Renaissance may be noticed in the *De pintura antiqua* (1548) by the Portuguese Francisco de Hollanda, who was in Rome in 1538 and was fascinated by the genius of Michelangelo. This treatise is composed of four dialogues in which Michelangelo himself interposes to explain his own theories (although they should not all be considered his). The author bases his work also on Vitruvius, Pliny, Gauricus, and Dürer.

Artistic theory in the baroque period. In the 17th century all the traditional theories were repeated monotonously in treatises that continually quoted previous works because of the insensibility to plagiarism, the spirit of erudition that dominated the culture, and the traditionalism that hindered all liberal attitudes to problems. However, the criticism of artists began to include that by *virtuosi*, amateurs, dilettantes, and littérateurs. Horace's theory of *ut pictura poesis* had evolved to the point where literature was considered the mistress of painting and the rules of dramatic theory, such as unity of place, time, and action, were applied to painting. This led the arts to the confused position against which Lessing was to react a century later.

The idea of the beautiful became central, and Vasari's definition of the *arti del disegno* gave way to that of *beaux arts*. First Giovanni Battista Agucchi and later Giovanni Pietro Bellori brought the concept of "idea" back from the neo-Platonic plane to the Aristotelian plane — the "idea" does not exist a priori, but derives from nature — which led to the *belle nature* theory developed by the French classicists. Technique was secondary to the idea, and this is mirrored in the art of the century, with the spread of sketches and plans whose execution was often left to others. (It is sufficient to consider Bernini, an entrepreneur and producer of ideas who availed himself of other artists to carry out his conceptions.) The hierarchy of types succeeded in establishing itself schematically in correspondence with the historical development both of the new forms of art and of the new content.

At the beginning of the century Giulio Mancini's treatise, written in 1630 but only recently published, was the first and the most comprehensive document of the new point of view. Mancini, a physician, began his treatise with a defense of criticism by nonartists, opening the way in this area to the dilettantes and littérateurs. Further, he gave considerable importance to the "idea," defined poetry as the mistress of painting, and attributed new values to the concept of decorum. He contrasted the logical and verisimilitude — nature idealized according to the principles of decorum — to pure naturalism and mannerism, which was by then obsolete. Decorum was central in the new literary concept of painting, since it was the instrument of fidelity in representations (thus in Nicolas Poussin or in Guido Reni even the colors are adapted to the subject represented, to the period, and to the characters of the personages). Furthermore, decorum justified the use of the ugly and of types, because "Vulcan must be depicted lame," and in such a type of representation a "beauty of deformity" was to be recognized, since caricature and realistic interest in art were opposed to the ideal study of the ancient. Mancini also proposed a hierarchy of types with greater clarity, establishing three types of landscape: simple, arboreal, and perfect. However, he gave more importance to historical representation, for which he demanded not only fidelity to the literary subject but also clarity of composition and perfect intelligibility.

Giovanni Battista Agucchi, a friend of artists and in close relations with Domenichino, formulated a theory in which his reaction to the *maniera* and to pure imitation in the name of the "idea" anticipated the thought of the most significant theorist of the century, Giovanni Pietro Bellori. The latter, in the introductory essay of his *Vite* (1672), more clearly condemned both the imitators of nature (Caravaggio) and those who broke away from nature (the mannerists). Nature, which during the Renaissance had been mistress of art, now came to be considered as source material over which art was mistress. That the artist rose above nature in his idea found support in the study of the ancients and of Raphael. It should be noted that by then the theories of proportion had lost all their value in determining the beautiful.

The portrait, too, was idealized, and invention, composition, and expression became the essential qualities of painting, which with new conviction was defined as mute poetry.

Except in minor treatises, such as those of Francesco Scannelli (1657) and Fra Francesco Bisagno (1642), the same theories appeared in the works of all the writers and historians of the century. What is more noteworthy is the moralistic attitude, which followed the paths laid down by the theorists of the Counter Reformation and which may be noticed in the *De pictura sacra* (1625) of Cardinal Federigo Borromeo, in the treatise published in Florence in 1652 by the Jesuit Giandomenico Ottonelli and Pietro da Cortona, and in the satires of Salvator Rosa (ca. 1664). Rosa, who violently attacked pure realism and the genre paintings of the *bamboccianti*, remained consistent in his art: he vested his landscapes and battles with an epic and philosophical value. That removed them from the ranks of genre.

Classical theory was codified in France, the country that had reacted most strongly against the Gothic tradition in accepting the Renaissance. The French aspiration toward the classical and toward rational clarity arrived at its first great expression in this century. In 1648 the Académie Royale was founded in Paris, and in 1666 the Académie de France in Rome. The real tutelary deity of the Académie Royale was Nicolas Poussin, who, although living in Rome, exercised a considerable influence in his native land. The academicians concentrated on theoretical activity, which culminated in lectures, later published, that constitute an important document of the period. The first theoretical writings were those of Hilaire Pader (1653, 1658), who translated Lomazzo and popularized Italian theory, and of Abraham Bosse (1645, 1649, 1667), who, like Mancini, reflected the problems inherent in art collecting. But the real theoretical synthesis came with the didactic poem by Charles Alphonse Dufresnoy, *De arte graphica*, often translated and widely circulated for its expository clarity. Of equal importance were the writings of A. Félibien, who rigorously defined the hierarchy of types and the theory of ideal beauty and went so far as to disavow practical knowledge and technique, even including proportion in this latter. The supremacy of literary content over pictorial form led to the rigorous applications of the three unities of tragedy. Drawing was considered superior to color. These theories were defended by Charles Lebrun (Le Brun; q.v.) for twenty years. A supporter of Poussin's ideal, he wrote a treatise (1698) on physiognomy, anticipating Johann Kaspar Lavater (*Physiognomische Fragmente zur Beförderung der Menschenkenntnis und Meschenliebe*, 1775–78) and establishing types

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

for the emotions; facial mimicry acquired the value of visual expression of the sentiments of the personages, who were portrayed like actors on a stage. Idealization led toward an abstract typology, from the particular to the general, from nature toward the ideal types. Attempts were made in every area to establish the definitive rules of true art, as was proposed in Henry Testelin's treatise, *Sentiments . . . mis en tables de précepts* (1680).

This atmosphere of rigorous domination by the Académie and of the unquestionable authority of the ancients led to the first open rebellion. These emerged in the two famous *querelles*: that of the ancients and moderns and that of the Poussinists and Rubenists. The reaction to the authority of the ancients in the name of modern progress and of freedom of taste, begun in England by Bacon, was upheld especially by the brothers Pierre, Claude, and Charles Perrault. Claude, in his treatise (1676), attacked the theories of proportion of ancient times; and he distinguished between things of absolute beauty and those of relative beauty, placing among these latter all the formal elements subject to the evolution of taste and fashion. Having thus shaken the authority of the ancients, he opened the way for the recognition of modern values.

The *querelle des anciens et des modernes* was involved with that between the Poussinists and the Rubenists. Since the 16th century the Tuscan and Roman school, based on drawing, had opposed the Venetian school, based on color. By that time drawing had been recognized as a fundamental part of the academic and classical concept, because since ancient times it had found scientific bases in perspective, anatomy, chiaroscuro, and proportion. Color, on the other hand, eluded rational and scientific definition. Drawing seemed rational and objective, color sensual and subjective. Moreover, drawing did not demand color, whereas color was inconceivable without drawing. On this point the classicists were assisted by the Cartesian principle: *Il y a de la répugnance que le plus parfait soit une suite et une dépendance du moins parfait.*

It was Roger de Piles who, in the notes to his edition of Dufresnoy (1673), took up the defense of color against Félibien. De Piles had a precedent in Lomazzo and Marco Boschini, who had maintained that drawing without color was a body without a soul. The argument was taken up in the Académie. Philippe de Champaigne upheld drawing, while Jacques Blanchard supported color. The latter declared that he who despised color was in fact imitating "sculpture rather than nature." Finally De Piles gave the most comprehensive theory of color in a study of the complementary colors, tone, etc. Moreover, he affirmed the thesis of genius and of taste, that is, of subjectivity, to which the concepts of the colorists naturally led.

THE 17TH CENTURY IN ENGLAND, SPAIN, AND THE LOW COUNTRIES. English 17th-century treatises lacked originality and importance and consisted of translations or writings that assimilated and reiterated Continental ideas; however, there were signs of an antiacademic and independent attitude, a contrast of contradictory elements that was to lead to the great innovating explosion of English thought on esthetics and the figural arts in the following century.

The only Humanistic concept with which English writers were concerned during the 16th century was the dignity of the arts as liberal arts. A translation of Baldassare Castiglione's *Il cortegiano* had so much success that it started a literary trend that exalted the "gentleman," adapting the Italian prototype to English taste and society. In 1563 John Shute's treatise on architecture introduced Vitruvius; in 1598 appeared Richard Haydock's translation of Lomazzo's treatise, and its influence can be noted in the treatise by the 17th-century miniaturist Nicholas Hilliard, *A Treatise Concerning the Art of Limning*, first published in 1911–12. Hilliard maintained, among other things, that the miniature was nobler than the fresco because it entailed less manual work. Thus the traditional comparison was adapted to the local artistic situation, in which only the miniature had gained importance. Inigo Jones (q.v.), the great architect who introduced the Palladian style to England, supported the concepts of "idea" and of invention and the need for a theoretical foundation for architecture. With Henry Peacham, the "gentleman" became the virtuoso, that is, the typical Englishman animated by curiosity about every branch of culture. It is interesting to note that Peacham translated and incorporated into his treatise (1606) a few of Vasari's biographies.

Franciscus Junius, a Dutchman, librarian to the Earl of Arundel, was the author of *De pictura veterum*, which appeared in Latin in 1637 and was translated into English in 1638. This treatise was a veritable encyclopedia of all that was known about ancient art at that time. The work therefore exerted great influence on the French treatise writers too; however, it should be noted that Junius maintained a more liberal point of view than that of the Académie: he accepted the theory of modern progress, realized that the ancients did not necessarily have to be considered exemplary, and gave great importance to the antirationalistic concept of genius. Paralleling Quintilian's five-part division of the art of oratory and the similar division of architecture by Vitruvius, Junius divided painting into five parts, a scheme later to be taken up by the French theorists. It is important to note, however, that the last part refers to grace, that indefinable beauty that escapes the rules.

In England, then, there was a keen awareness of the merit of the moderns. Bacon, as well as having been the first supporter of the superiority of the moderns over the ancients, had stated that there was no beauty without a certain unusualness of proportion and that beauty was not a product of the rules but of inspiration. This did not prevent the theory of proportion from being introduced and defended by Henry Wotton in *The Elements of Architecture* (1624), in which he worked out the neo-Platonic concept of the affinity between artistic creation and divine creation, in opposition to pure naturalism and mannerism.

Imagination, contrary to logic, continued to be considered the originating factor of art right up to Joseph Addison's *The Pleasures of the Imagination*, which manifested the following century's reaction to classicism.

One of the forces that led writers to the support of subjectivity was the taste characteristic of the amateur and of the collector, of which a precise reflection is found in the treatise (1658) by William Sanderson, who, however, still conceived landscape in the topographical sense and did not distinguish between the painter and the cartographer. After the Restoration (1660) numerous technical and theoretical treatises were published, all of them indicative of Lomazzo's mannerist influence in counteraction to French classicism, which was introduced to England by William Aglionby, whose text (1685) widely plagiarized Dufresnoy's treatise, and later by Anthony Ashley Cooper, Earl of Shaftesbury, who lived on into the 18th century and who anticipated Lessing in certain aspects. The classical movement found strong support in the literature of the day, in the works of Alexander Pope and John Dryden. The local pictorial tradition, however, created by Rubens and Van Dyck, and the influence of nearby Holland were to constitute the final and decisive bulwark against the triumph of classicism.

The Humanistic theory of architecture had penetrated into Spain in the 16th century, and the *Comentarios de la pintura* by Felipe de Guevara had anticipated the monumental work of Junius on ancient painting. In the 17th century, when the Spanish school of painting assumed European importance, texts were few but interesting. The first chronologically was that of a Florentine immigrant, Vincenzo Carducci (Vicente Carducho), entitled *Diálogos de la pintura* (1633), which, in opposition to Caravaggio, Velázquez, and Ribera, still supported the manneristic theses. Moralism, developing partly from treatises on mysticism, characterized the *Arte de la pintura* (1649) by Francisco Pacheco, Velázquez' father-in-law, which gave explicit details on the iconography of ecclesiastical painting. The *Discursos practicables . . .*, by Jusepe Martínez, and the *Pictor christianus . . .*, by Juan Interian de Ayala, which followed the same trend, should also be mentioned.

In the Low Countries Humanistic theory became established not only with Junius's treatise but also with the works by Samuel van Hoogstraten (1641), a student of Rembrandt, and by the Walloon Gérard de Lairesse (1707). Rubens and the Italianate artists were preeminent in the popularizing of the Italian concepts in the north.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

In Germany, besides the works (1675–79) of Joachim von Sandrart, there was a revival of the Counter Reformation theories in the *De inanibus picturis* (1678) by J. F. Jünger and in the *Pictor errans in historia sacra* (1679) by M. Philippus Rohr.

THE 18TH CENTURY. The 17th-century treatises had shown a substantial unity, in contrast to the variety of the artistic trends during the century, but had not produced a critique capable of interpreting the art of innovators such as Caravaggio, Rembrandt, and Salvator Rosa. In the 18th century such unity gave way, in critical as well as in theoretical treatises, to a proliferation of opposing and contrasting theories whose interrelations and differing nuances and emphases cannot be detailed here; it must suffice to indicate the continuing antithesis between the classical tradition, which culminated in neoclassicism, and the anticlassical attitudes that led to the romantic movement.

England. England assumed the preeminent position held by France in the preceding century. After 1660 a classical movement had formed in literature and thought with Dryden and Pope and in art with Palladianism, which, after Wren and Vanbrugh (qq.v.), found champions and theorists such as Robert Morris (*Lectures on Architecture*, London, 1734). The Earl of Shaftesbury renewed the Humanist approach at the beginning of the century in terms that were new only in a pantheistic love of nature and in a new rigorousness that, in identifying the beautiful with the Greek, anticipated Lessing. Beauty consisted of the presence of God in nature and therefore in the harmony of the universe. Nature was, then, the norm for beauty, which was one, objective, and absolute. Furthermore, this harmony, being based on proportion, had a rational character; the very faculty in man of perceiving beauty, his taste, was a rational faculty, universal and immutable, that could be educated through the study of rules.

Toward the middle of the century this point of view changed radically. Numerous writers, under the influence of empirical philosophy, transferred their attention from the object to the subject, to the phenomenology of perception, that is, to the psychological level. Frances Hutcheson, though continuing to believe in objective and proportional beauty, investigated that mental faculty which is capable of perceiving beauty with pleasure, i.e., taste (see XI, cols. 762–766). There followed many treatises on taste, a faculty of the soul for discerning with pleasure or displeasure the beautiful and the ugly. Such an investigation was bound to lead to rejection of objectivity and of the rational quality of beauty, opening the door to new types of beauty, to the multiplicity of beauty, and to the relativity of taste. In his *Essays on the Nature and Principles of Taste* (London, 1790) Archibald Alison rejected the idea of beauty resulting from proportion. In 1759, Alexander Gerard declared that taste and genius were subjective faculties, born of the imagination; and a year later, David Hume wrote: "Beauty is no quality in things themselves. It exists merely in the mind that contemplates them: and each mind perceives a different beauty. . . ." Thus in the treatises of Richard Payne Knight (1795), Edmund A. Burke (1756), and Joseph Addison taste and genius appeared as subjective faculties, imaginative and not rational.

Naturally theory was, as ever, urged on by art; Jonathan Richardson the Elder's treatise (1715), coming so fortunately at the beginning of the century, revealed how the assimilation of current theories was fostered by the "amateur taste," which was by then highly developed in English society. The main representative of English classical and official taste during the 18th century was Sir Joshua Reynolds (q.v.), who revealed in his *Discourses* (1769–91) a liking for the masters of color, Rembrandt, Titian, and Van Dyck. Reynolds not only rejected the supremacy of "rational" design in respect to "irrational and sensual" color but also shook the hierarchy of types to its foundations, maintaining that any subject may convey feelings of greatness. He ennobled the portrait, idealizing it and translating it into an allegorical and historical portrait; but he also discerned an ideal value and a value of greatness in a pure landscape.

An opponent of Reynolds in art as in writing was William Hogarth (q.v.), author of *The Analysis of Beauty* and of the essay on the comic. Hogarth rejected the theory of proportion and any idealization in the classical sense and maintained that form must serve function. He reiterated the thesis — attributed to Michelangelo and referred to by Lomazzo — that the "serpentine" and "waving" line was the most suitable for the representation of the human figure (this was a simple preference, characteristic of mannerism, for an abstract, formal motif). Hogarth declared that grace and variety, and therefore beauty, lay in the undulating line. This was a meaningful thesis for an epoch in which the rococo taste was developing the undulating, curved line to the point of arabesque, in repudiation of the straight line and regular forms.

The concept of grace, by no means new, became important. Dufresnoy and De Piles had described grace as an indefinable form of beauty which eluded the rules and which in fact was often based on irregularity. Anton Raphael Mengs, too, considered grace a higher form of beauty; but alongside this ideal — anticlassical because it was established on an irrational presupposition — he placed another one: the sublime. Burke adopted this concept, which Nicolas Boileau had revived in his edition of Longinus, and made it a type of superior beauty: the sublime, which appeared in the works of many other writers, including Shaftesbury, indicated a type of beauty that moved the imagination with scenes of grandeur, of truth, or of horror, leaving man breathless. The roots of this ideal, too, were to be found in Michelangelo's assessment, as well as in Salvator Rosa's taste for wild and terrifying landscapes.

On the subjective level, the beautiful, which was one and absolute, gave rise to yet more categories, such as the picturesque (q.v.), related to the taste for landscape architecture, which was the object of several treatises, among them that by Uvedale Price (1794). The picturesque, born of the irregular, was the informal, unrestrained garden, the *rocaille*, in contrast to the regular architectural garden of André Le Nôtre (q.v.).

Other ideals of beauty and even other rules were discovered in Gothic and Eastern art, in forms that classicism decidedly condemned. William Chambers, in his essays (1753) on Oriental gardens and Chinese architecture, as well as Horace Walpole (1762–71) and Batty Langley (1747), in their writings on the Gothic, reflected the new anticlassical orientation.

France. In France Roger de Piles, Pierre Jean Mariette (1768), and Anne Claude Philippe, Comte de Caylus (1755), championed the critique by the connoisseur. The first great critic of the *salons*, Denis Diderot, defended the relativity of taste; he exalted feeling in comparison with traditional rationalism, and he loved the ancients as "primitives." La Font de Sainte-Yenne, another *salon* critic, supported historical painting against modern art, while D'Argenville denied the hierarchy of types and accepted all schools and all tastes. The rococo found expression in the *Réflexions critiques* . . . by Jean Baptiste Dubos, who rejected the rules in favor of feeling, which was considered the free judge of art, whose purpose was to affect the emotions.

In the 17th century François Blondel (the Elder) had been the Boileau of architecture, supporter of the classical Palladian ideal against the encroaching baroque; Claude Perrault (q.v.), as has been mentioned, had fought the rules and the authority of the ancients in the name of freedom of taste. An effect of this break may be observed in the work of Louis Géraud de Cordemoy (1706), who criticized the authority of Vitruvius in the name of truth and naturalness. The stylistic rules were deduced from a consideration of the material and the technique and their relation to the aim; the rules had to correspond to the "natural" prototype of all architecture, the wood hut. All the forms that did not have a rational function — such as the baroque twisted columns — were rejected. The reaction against classical principles took place on the level of rationalism proper to the century of the Enlightenment and not in the name of the free expression of feeling. De Cordemoy exercised considerable influence, and his ideas were spread by Marc Antoine Laugier. Other French treatises worth mentioning were those of Charles Augustin Daviler (1691), Gabriel Germain Boffrand (1743), and Charles Etienne Briseux (1752).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Germany. Germany made a fundamental contribution to the development of art criticism: Alexander Baumgarten laid the foundations for modern esthetics and Johann Joachim Winckelmann for modern historiography. Furthermore, German treatise writers, divided between the classical ideal and rococo preromantic taste, sharpened the conflict that led to the two opposing movements of neoclassicism and romanticism.

The Italian masters were judged absolutely perfect — for example, by Nikolaus Goldmann (1643), a mathematician and supporter of classical theories in architecture. The great theoretical treatise in this field was that by Josef Furttenbach the Elder, which appeared in 1635. In Dresden, classicism was to dominate even up to the high rococo period. There, the court architect and teacher at the Academy of Architecture founded in 1673, Friedrich August Krubsacius, gathered together all the principles that were traditional and by now proper to the neoclassic taste. But sensitivity to the Gothic and to *chinoiserie* was apparent in the *Fürstlicher Baumeister* . . . (1711–16), by Paul Decker. A document of the taste of the period is the work of Karl Eusebius von Liechtenstein, *Werk von der Architektur*, which was a treatise intended for the use of this great patron's descendants and was published only in 1910.

Another German, Georg Wolfgang Krafft, active in Leningrad, where Western art had successfully penetrated, dealt with architecture (1750, 1758). Anton Raphael Mengs, a painter active in Spain, revived and publicized once more the myth of beauty and of classical perfection. He wished to be the Raphael and the Poussin of his time, following the myth of the *peintre-philosophe*, like his great French predecessor. A reflection of the new sensitivity may be noted, nevertheless, in Mengs's admiration for Correggio and in his ideal of grace as a superior form of beauty. He preferred the Greek to the Roman and identified ideal beauty with the physical beauty of the human body. A similar position was taken by Gotthold Ephraim Lessing in his famous *Laokoon oder über Grenzen der Malerei und Poesia* (1766), in which he reacted against allegory as a mistaken tendency to transform paintings into poetry. The *ut pictura poesis* had in fact brought confusion to the arts. In this reaction to "history" Lessing placed beauty, as did Mengs, not so much in "human action" as in the figure. He, too, maintained the superiority of Greek art.

Another fundamental work of German classicism was the *Allgemeine Theorie der schönen Künste* (1771–74), by Johann Georg Sulzer. The same idealistic philosophy that laid the foundations for the autonomy of art by recognizing its subjectivity was dominated by classicism; while Johann Gottfried Herder, like Giovanni Battista Vico in Italy, was upholding the primitive in literature, Sulzer was influenced by Lessing's theories.

The sphere of the amateur was championed by Christian Ludwig von Hagedorn, who loved Rubens and wrote on landscape painting (1762); his work is permeated by a naturalism that is free of the rigid thesis of the hierarchy of types. Henry Fuseli (Johann Heinrich Füssli; q.v.), active in England, was an admirer of Rembrandt, Salvator Rosa, and Michelangelo and gave a romantic interpretation to the classical, contrasting the ideal of physical beauty with the taste for the visionary, at which he arrived through the classical concept of the sublime. The thesis of the spontaneity of the imagination found its greatest advocate in Wilhelm Heinrich Wackenroder (1797), who contrasted rationalism and the myth of an absolute and objective beauty with divine inspiration and spontaneity, recognizing in art an intuitive and nonrational value and basing art on feeling.

Italy. The Italian treatises in the 18th century did not attain the importance of previous centuries and continued, with few exceptions, along traditional lines, reflecting also the influence of the French, the English, and the Germans, as in the works of Giovanni Maria Ciocchi (1725) and Giovanni Gaetano Bottari (1754). Bottari wrote the *Dialoghi sopra le tre arti del disegno*, in which he restated the principles of classicism that dominated until the neoclassical movement proper.

Evident in the writings of Francesco Algarotti (1753, 1762, 1763), Antonio Martinelli (*Quattro discorsi che possono servire di risposta a quanto scrisse, scrive e scriverà . . . Giosuè Reynolds . . .*, Venice, 1783), and Saverio Bettinelli (1793) is the English fashion, which was accentuated by the continual presence of British amateurs and collectors, especially in Venice and Rome. Algarotti was also the most typical exponent of that literature for the *salons* and the ladies, which, as such, had become established in France. He was a man of the world and of the court, who in his writings on architecture (1753) made use of the work of Carlo Lodoli (see below). The Venetian tradition of Marco Boschini was continued by Antonio Maria Zanetti.

In the architectural field, practical handbooks such as that by F. Galli Bibiena (1731 ff.) continued to appear. A remarkable work was the posthumous publication (1737), edited by Vittone, of *Architettura civile*, by Guarino Guarini, who dealt at length with the cupola and analyzed the differences between Roman and Gothic architecture, explaining how, in his own buildings, after having abandoned the classical models, he had not only derived constructional principles from the Gothic but also sought the spatial effects of the Gothic. Thus were combined the various trends proper to the century: rationalism, mathematical mysticism, and the Gothic taste.

The greatest exponent of the rationalistic tendency, characteristic of the Enlightenment, was Carlo Lodoli (1690–1751), who was preceded in his theories by the Frenchman De Cordemoy. Lodoli (whose theories were compiled by Andrea Memmo in 1786) was the first in Italy to consider the beauty of a building as the representation of its function. Essence, structure, and solidity, rather than ornamentation and imitation, were the basis of esthetic merit; the reaction against the "screen façades" of the baroque, the ornamentation that hid the structure, and the disguising of the materials marked the rebellion against the baroque and the rococo and heralded neoclassicism.

Among the theoretical exponents of neoclassicism in architecture the most important was Francesco Milizia, who wrote a great deal, both historical and theoretical, always in strong opposition to the baroque of Bernini, Borromini, and Pietro da Cortona (see II, cols. 258–259).

THE 19TH CENTURY. When referring to the 19th century one can no longer speak of treatises, although the traditional literature of practical handbooks has persisted into the 20th century. The most vigorous and revolutionary, the most meaningful and efficacious theories were elaborated in writings that, except in rare cases, no longer had the traditional form of the treatise, especially at the beginning of the 19th century; rather, they appeared in letters, artists' diaries, manifestoes, and the like. Criticism itself followed the paths suggested by Diderot: it was fragmentary in form, bound to contemporary art and to the understanding of its problems and its vicissitudes. Philosophers and historians, who aimed at more encompassing works based on scholarly research, used ever more complex methods, widening the views of research. In general, studies of art divided into various areas: esthetics, criticism, poetics, the science of art, and historiography. Although these areas were interconnected, each was distinct in its purposes and instruments.

Neoclassicism was no longer the continuation of a tradition but a conscious return to the ancient, in reaction against the excesses of rococo and baroque. The neoclassical movement became the antithesis of the modern and aimed at adapting the modern to the ancient rather than at giving a present-day interpretation of the past (see ROMANTICISM). The relation between the two antithetical movements was manifested in varied and complex forms. On the esthetic level German idealism (Schelling, Hegel; see V, cols. 46–47) maintained the romantic concept of art as creation and not imitation; but the taste of all, or almost all, of the movement's exponents was neoclassical. Only Friedrich von Schlegel understood the Middle Ages and the Gothic (see IV, col. 138). In France academic taste and theory found their champions in Victor Cousin (1858), Félicité de Lamennais (1836–37), Théodore Jouffroy (1843), Antoine Chrysostome Quatremère de Quincy (1823, 1837), Emeric David (*Le cabinet du roi*, 2 vols., Paris, 1817), François

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Guizot (1852), and Charles Blanc (1880). The treatise on perspective and landscape (1799–1800) by Pierre Henri de Valenciennes, although it reechoed traditional concepts on landscape, revealed a new naturalistic interest in its concern with light, shade, and color.

In Italy Leopoldo Cicognara, in his treatise *De bello* (1808), dealt with the beautiful and identified his own esthetic ideal in the art of his friend Antonio Canova. Romanticism found its first expression in the theories of the purists and Pre-Raphaelites. Antonio Bianchini's *Del purismo nelle arti* (1843) was supported by Pietro Estense Selvatico. Interest in things medieval, born of the conviction that belief and spontaneity were necessary in art, found its theorists and historians in Jacques Nicolas Paillot de Montabert (1829), Eugène Emmanuel Viollet-le-Duc (q.v.), and in England in William Young Ottley (*The Italian School of Design* . . ., London, 1823; *A Collection of Fac-similes* . . ., London, 1826), Augustus W. N. Pugin (q.v.; 1836), John Ruskin, and William Morris (q.v.). Ruskin's vast work (1903–12) is a monument to the taste and mentality of romanticism, exalting spontaneity, genius, love, and, on the stylistic level, color and light, in opposition to academic taste. William Morris (1901, 1947) offered a theoretical basis for the reevaluation of handicrafts, stressing the humbleness of the work and technique as a form of expression, in antithesis to industrial development and to art that was machine-produced for mass consumption.

Awareness of past art developed first of all among those artists who rejected tradition, repudiated the myth of the perfection of the ancients, and resolved to be men of their own times. Once more the artists led in contributing to the formation of this new historical and critical awareness. Realism (q.v.), already established in France by 1848, was founded upon the ideas of Gustave Courbet. In his *Journal* Eugène Delacroix (q.v.) praised the value of the imagination, color, and, in general, the essential points of the romantic movement; Jean Auguste Dominique Ingres, however, in his *Ecrits sur l'art* (1947), lauded the beautiful and drawing, as part of a new, refined classicism.

Beside the painters were poets, novelists, writers in general, and art dealers, who in opposition to the official criticism of the traditionalistic type gave life to art criticism in the true sense of the word — the so-called *salon* critics (Charles Baudelaire; Théophile Etienne Joseph Thoré, also known as W. Burger; Paul Mantz; Eugène Fromentin), whose writings were fragmentary but rich in new theoretical approaches and animated by new principles. Baudelaire (1868–92) identified Delacroix with romanticism and repudiated absolute principles and abstract postulates; he maintained that the critic, too, was obliged to be partial and prejudiced but must proceed from the point of view that opened the greatest number of horizons. Individuality and spontaneity became the only two postulates of art. Art freed itself completely from traditionally didactic foundations: it was not to be learned or taught.

Realism had laid the foundations for this repudiation of tradition and of the centuries-old principle of *ut pictura poesis* in favor of the present and of reality. Impressionism, in reducing reality to sensation, began the destructive process, transferring the stylistic values from object to subject — i.e., to the way of seeing things — thus opening the door to symbolism in art and to the "pure visibility" theory in historiography. "History," the chosen subject, the content, was immaterial; the real values were in line, form, and color, i.e., in the visual elements, symbols of the artist's temperament. Thus the painters were the first to seek theoretical justification for their way of feeling. Besides the writings of the impressionists (see IMPRESSIONISM) may be mentioned those of the Italian *macchiaioli* (q.v.) Adriano Cecioni (1932) and Diego Martelli (1953).

Science itself was overturning traditional principles. There is at least a parallel, if not a direct relation, between the reduction of space to time formulated by Bergson in 1889 and Cézanne's multiplying of station points in a succession of visual images.

Fauvism, cubism, futurism, and surrealism were based on precise theoretical convictions that were developed by the artists themselves and by their closest friends (see CUBISM AND FUTURISM; FAUVES; SURREALISM).

As already mentioned, among nonartist writers there was a precise distinction between the field of esthetics (to which the problem of the beautiful was left) and that of art science (concerned with the problem of artistic idiom and its schemes). As a reaction against realism the theory of art for art's sake appeared in France (Théophile Gautier, Mantz, Edmond and Jules de Goncourt, Fromentin) and opened the way to formalism, developed by Hans von Marées, Konrad Fiedler (1896), Adolf von Hildebrandt (1893), and Robert von Zimmermann (1858, 1865). Fiedler was the real founder of the science of art as distinct from esthetics — a science that concerned itself with the laws of vision, different from the laws of nature. Zimmerman left to psychology the study of the content of the imagination, retaining for esthetics that of its form. The province of esthetics was not knowledge (proper to logic), but the creation of criteria to be used as a basis for judgment — such as the material or tactile quality, or the pictorial perception or vision — criteria differing from the system proper to poetry. Attention was thus directed to symbols or visual systems. This was not a new approach, since De Piles had already stated that the parts of a picture implied the visual elements; the serpentine line of Michelangelo, for example, was a visual scheme. But while composition for many centuries (up to neoclassicism) had included "history," figures, emotions, and the like, now all these were rejected as extraneous, and composition was defined as the interrelation of line, form, and color. The theory of pure visibility culminated in the historical works of Alois Riegl (1893) and Heinrich Wölfflin (1915; see VII, cols. 526–527). The psychological theories of *Einfühlung* (empathy; see XI, col. 751), advanced by Wilhelm Worringer (1908), had their precedents in Lomazzo and in the 18th-century English treatises. The danger in this critical, historiographic, and methodological orientation was that it took a visual symbol as the yardstick for judgment, thereby creating abstract myths of form and color (e.g., the perfection of the "plastic"), and then traced the history of art as the progress of a stylistic element considered perfect at the moment of its maximum development. But this is the field of modern historiography, which identifies criticism and history, esthetics and history, and does not profess to teach artists.

Luigi SALERNO

REPRESENTATIVE TREATISE WRITERS, 15TH–19TH CENTURY. The bibliography relative to the following treatise writers is found at the end of the article. When pertinent, recent studies of particular interest were added to each separate entry in the list that follows.

The Renaissance and mannerism. Leon Battista Alberti: De re aedificatoria libri X, Florence, 1485; other eds.: Strasbourg, 1511, 1541; Paris, 1512, 1543 (trans.: It.: P. Lauro, Venice, 1543; C. Bartoli, 2d ed., Florence, 1565; Fr.: J. Martin, Paris, 1553; Eng.: London, 1739). De pictura, Basel, 1540 (It. trans. from the Lat.: L. Domenichi, Venice, 1547, Florence, 1568; C. Bartoli, in Opuscoli morali di Leon Battista Alberti, Florence, 1568); original It. text first published in H. Janitschek, L. B. Albertis kleinere kunsttheoretische Schriften, Eitelbergers Quellenschriften, XI, Vienna, 1877; other eds.: G. Papini, Lanciano, 1911; L. Mallé, Florence, 1950. De statua, original Lat. text first published in H. Janitschek, op. cit. (trans.: It.: C. Bartoli, op. cit.; Ger.: W. Rivius, Fürnembster Notwendigster angehend mathematische und mechanische Künste eigentlicher Bericht, Nürnberg, 1547). M. L. Gengaro, L. B. Alberti teorico e architetto del Rinascimento, Milan, 1939. See also ALBERTI, LEON BATTISTA. – *Romano Alberti*: Trattato della nobiltà della pittura, Rome, 1585. Origine e progresso dell'Accademia del disegno . . . in Roma, Rome, 1599, Pavia, 1604. – *Jost Amman*: Kunst- und Lehrbüchlein, Frankfurt am Main, 1578. – *Giovan Battista Armenini*: De' veri precetti della pittura libri III, Ravenna, 1587; other eds.: Venice, 1678; Milan, 1820; Pisa, 1823. L. Grassi, L'Arte, N.S., XVIII, 1948, pp. 45–54. – *Daniele Barbaro*: M. Vitruvii, De architectura libri decem, cum commentariis Danielis Barbaro, Venice, 1556. La pratica della prospettiva, Venice, 1569 ff. – *Martino Bassi*: Dispareri in materia d'architettura e prospettiva . . ., Brescia, 1572. – *Hans Sebald Beham*: Mass oder Proportion der Ross, Nürnberg 1528. – *Giovan Battista Bertano*: Gli oscuri e difficili passi dell'opera di Vitruvio, Mantua, 1558. – *Michelangelo Biondo*: Della nobilissima pittura, Venice, 1549. – *Francesco Bocchi*: Eccellenza della statua di S. Giorgio di Donatello, Florence, 1584. – *Giulio Camillo (Delminio)*: L'idea del teatro, Florence, 1550. – *Baldassare Castiglione*: Il corte-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

giano, Venice, 1527; other ed.: Florence, 1892. – *Pietro Cataneo*: I quattro primi libri d'Architettura, Venice, 1554; enlarged ed., L'Architettura alla quale . . . sonosi aggiunti di più il 5.6.7. ed 8. libro, Venice, 1567. – *Benvenuto Cellini*: Due trattati, uno intorno alle otto principali arti dell'oreficeria, l'altro in materia dell'arte della Scultura . . ., Florence, 1658; other eds.: Florence, 1731, Turin, 1795; C. Milanesi, Florence, 1857; A. Jahn Rusconi and A. Valeri (together with Cellini's autobiography), Rome, 1901 (trans.: Fr.: E. Piot, in Le Cabinet de l'amateur, II, Paris, 1842; Ger.: J. Brinckmann, Leipzig, 1867; Eng.: C. R. Ashbee, The Treatise of Benvenuto Cellini on Goldsmithing and Sculpture, London, 1898). See also CELLINI, BENVENUTO. – *Jacques Androuet Ducerceau*: Livre d'architecture, Paris, 1559. Seconde livre d'architecture, Paris, 1561. Leçons de perspective, Paris, 1576. – *Cesare Cesariano*: Commento a Vitruvio, Como, 1521. – *Gregorio Comanini*: Il Figino, Mantua, 1591. – *Jean Cousin*: Livre de perspective, Paris, 1560. – *Egnazio Danti*: La Prospettiva di Euclide . . ., Florence, 1573. Vita del Vignola (introd. to Vignola, Le due regole della prospettiva pratica), Rome, 1583. – *Vincenzo Danti*: Il primo libro del trattato delle perfette proporzioni di tutte le cose che imitare o ritrarre si possono con l'arte del disegno, Florence, 1567; other ed.: Perugia, 1830. – *Lodovico Dolce*: Dialogo della Pittura intitolate l'Aretino, Venice, 1557; other eds.: M. Nestenus, F. Mouche, and N. Vieughel (in It. and Fr.), Florence, 1735; Milan, 1863; Florence, 1910; Lanciano, 1913 (Eng. trans., London, 1770). Dialogo nel quale si ragiona della qualità, diversità e proprietà dei colori, Venice, 1565; other ed.: Lanciano, 1913. M. Pittaluga, L'Arte, XX, 1917, p. 240 ff. – *Anton Francesco Doni*: Disegno partito in più ragionamenti, Venice, 1549. – *Albrecht Dürer*: Underweysung der Messung mit dem Zirkel und Richtscheyt in Linien, Ebenen und gantzen Corporen, Nürnberg, 1525, enlarged ed., Nürnberg, 1533, 1538; other eds.: Arnhem, 1603, 1606; A. Peltzner, Munich, 1908 (Lat. trans.: Paris, 1532, 1534, 1535). Etliche Underricht von Befestigung der Stett, Schloss und Flecken, Nürnberg, 1527; other eds.: Vienna, 1529; Berlin, 1803, 1823 (Lat. trans., Paris, 1535). Hierin sind begriffen vier Bücher von menschlicher Proportion, Nürnberg, 1528, another ed., Arnhem, 1603; numerous other eds. and trans. into D., Lat., Fr., It., and Port. Complete ed. of the three treatises, Arnhem, 1604. Posthumous works, ed. K. Lange and F. Fuhse, Dürers schriftlicher Nachlass, Halle, 1903. See also DÜRER, ALBRECHT. – *Antonio Filarete* (*Averlino*): Trattato d'architettura, written for Francesco I Sforza ca. 1451–64, later dedicated to Piero de' Medici, exists in manuscript. M. Lazzaroni and A. Muñoz, Filarete, Rome, 1908. – *Francesco di Giorgio*, Trattato d'architettura civile e militare, after 1482; other ed.: C. Saluzzo (2 vols., with atlas), Turin, 1841. For mss. see R. Papini, Francesco di Giorgio architetto, Florence, 1946. – *Francisco de Hollanda*: De pintura antigua, 1548; complete ed. (with commentary by J. de Vasconcelles), Porto, 1818 (Eng. trans.: A. F. G. Bell, Four Dialogues on Painting, Oxford, 1928). C. Aru, L'Arte, XXXI, 1928, p. 171 ff. A. M. Bessone Aurelj, Il Vasari, III, 1930, p. 202. – *Pomponius Gauricus* (*Gaurico*): De sculptura, Florence, 1504; various later eds., including the one of H. Brockhaus (with Ger. trans.) Leipzig, 1886. – *Giovanni Andrea Gilio*: Due dialoghi . . . degli errori de' pittori . . ., Camerino, 1564. – *Francesco Mario Grapaldi* (*Grapaldus*): De partibus aedium libri duo, Parma, 1494; other eds.: Brescia, 1501, 1506, 1508, 1516. – *Wenzel Jamnitzer*: Perspective, n.p. [Nürnberg], 1568. – *Antonio Labacco*: Libro appartenente all'Architettura, Rome, 1552. – *Alessandro Lamo*: Discorso, Cremona, 1584. – *Francesco Lancillotti*: Trattato di pittura, Rome, 1509. – *Heinrich Lautensack*: Gründtliche Underweisung, Frankfurt am Main, 1564. – *Leonardo da Vinci*: the treatise on painting circulated in various mss. until published under the title Trattato della pittura di Leonardo da Vinci, novamente dato in luce con la vita dell'istesso autore scritta da Raff. du Fresne, Paris, 1651; other eds.: Naples, 1733; Bologna, 1786; Fontani (based on ms. in the Bib. Riccardiana), Florence, 1792; G. Manzi (based on Vatican Cod. Urb. lat. 1270), Rome, 1817; H. Ludwig, Lionardo da Vinci, Das Buch von der Malerei (based on Vatican Cod. Urb. lat. 1270, with Ger. trans.), 4 vols., Vienna, 1882; M. Tabarrini, with notes by G. Milanesi (based on Vatican Cod. Urb. lat. 1270), Rome, 1890; A. Borzelli (based on Vatican Cod. Urb. lat. 1270), Lanciano, 1914; J. P. Richter, in the Literary Works of Leonardo (with Eng. trans.), London, 1883, 2d ed., London, New York, 1939; C. Ravaisson-Mollien, Les manuscrits de Léonard de Vinci de la Bibliothèque de l'Institut de France (facsimile ed.), Paris, 1881–91. L. Venturi, La critica e l'arte di Leonardo da Vinci, Bologna, 1919. See also LEONARDO DA VINCI. – *Giovanni Paolo Lomazzo*: Trattato dell'arte della pittura, diviso in VII libri, nei quali si contiene tutta la teoria e la pratica di essa pittura, Milan, 1584, 1585; other ed.: Rome, 1844 (trans.: Eng.: R. Haydock, A Tracte containing the arts of curious Painting . . ., Oxford, 1598; Fr.: H. Pader, Jean Pol Lomazzo . . ., Traicté de la proportion . . ., Toulouse, 1649). Idea del Tempio della Pittura, Milan, 1590; Bologna, 1785. M. L. Gengaro, Archivio Storico Lombardo, LIX, 1932, pp. 541–50. A. Paris, Annali della Scuola Normale Superiore di Pisa, XXIII, 1954, pp. 187–96. – *Johannes Molanus* (*Jan Vermeulen*): De picturis et imaginibus sacris, Louvain, 1570. – *Giovanni Battista Montano*: Libro d'architettura, Rome, 1608. – *Luca Pacioli*: Summa arithmeticae (with catalogue of artists), Venice, 1494. De V corporibus regularibus, Venice, 1507; new ed.: F. Riva, De divina proportione, I corpi regolari . . ., Fontes ambrosiani, XXXI, Milan, 1956. De divina proportione, Venice, 1509; other ed.: C. Winterberg (with Ger. trans.), Eitelberger-Ilgs Quellenschriften, N.S., II, Vienna, 1889. – *Giovan Battista Paggi*: Diffinizione ossia divisione della Pittura, Genoa, 1607. – *Gabriele Paleotti*: Discorso intorno le immagini sacre e profane, Bologna, 1582. – *Andrea Palladio*: I quattro libri dell'architettura, Venice, 1570, 1581; many later eds. and trans. (Eng. trans.: G. Richards, London, 1676; G. Leoni, with text in It., Eng., and Fr., London, 1715–20). R. Wittkower, Architectural Principles in the Age of Humanism, 2d ed., London, 1952. R. Wittkower, Arte Veneta, VIII, 1954, pp. 310–16. See also PALLADIO, ANDREA. – *Jean Pélerin le Viateur* (*Viator*): De artificiali perspectiva, Toul, 1505. – *Cipriano Piccolpasso*: I tre libri dell'arte del vasaio (1548), Rome, 1857; other eds.: G. Vanzolini (with reproductions of the drawings), Pesaro, 1879; London, 1934 (Fr. trans., C. Popelin, Paris, 1861). – *Paolo Pino*: Dialogo di pittura di Messer P. P. nuovamente dato in luce, Venice, 1548; other eds.: Leipzig, 1872 (facsimile); with introd. and notes by R. and A. Pallucchini, Venice, 1946. – *Antonio Possevino* (*Possevinus*): Tractatio de Poësi et Pictura ethica, humana et fabulosa collata cum vera, honesta et sacra, Rome, 1593; other eds.: Lyons, 1594 [1595]; Venice, 1603. – *Walther Rivius* (*Ryff*): Baukunst, oder Architectura . . . Unterrichtung zu rechtem Verstandt der Lehr Vitruvii, Nürnberg, 1547. – *Hieronymus Rodler*: Kunst des Messens, Siemeren (Simmern), 1531. – *Giovanni Antonio Rusconi*: Dell'architettura secondo i precetti del Vitruvio, libri X, Venice, 1590; other ed.: Venice, 1660. – *Vincenzo Scamozzi*: Dell'idea dell'architettura universale, Venice, 1615; other eds.: Piazzola, 1687; Venice, 1694, 1697, 1714 (Eng. trans., Brown, London, 1690; W. Leyburn, Mirror of Architecture, London, 1708). F. Barbieri, V. Scamozzi, Vicenza, 1952. F. Barbieri, CrArte, VIII, 1949–50, pp. 222–30, 300–13. F. Barbieri, Palladio, N.S., IV, 1954, pp. 150–60, V, 1955, pp. 135–48. See also SCAMOZZI, VINCENZO. – *Erhard Schön*: Underweysung der Proportion, Nürnberg, 1538. – *Sebastiano Serlio*: most of the books of the treatise on architecture were originally issued separately: Regole generali di architettura . . . sopra le cinque maniere degli edifici, cioè Toscano, Dorico, Jonico, Corintio e Composito con gli esempi delle antichità, che per la maggior parte concordano con la dottrina di Vitruvio, libro IV, Venice, 1537; other eds.: Venice, 1540, 1544, 1551 (the last also includes Book V). Il Terzo libro . . . nel quale si figurano e discrivono le Antichità di Roma . . ., Venice, 1540, 1551, 1562. Il primo libro . . . insieme col secondo (with Fr. trans.), Paris, 1545; Venice, 1560 (It. only). Il Quinto libro dell'architettura . . . nel quale si tratta di diverse forme de' tempj sacri . . . (with Fr. trans.), Paris, 1547; other eds.: Venice, 1551, 1559. Della habitatione (Book VI) exists in mss. in the Staatsbibliothek, Munich, and at Columbia University, New York. Il Settimo libro . . . nel quale si tratta di molti accidenti che possono occorrere all'Architetto . . ., Frankfurt am Main, 1575; Venice, 1584, 1600. Edition of Books I–V, Venice, 1566. Edition of Books I–V and Book VII, Venice, 1584, 1600, 1618, 1619; for trans. see Schlosser, pp. 418–19. G. C. Argan, L'Arte, XXXV, 1932, p. 183 ff. P. du Colombier and P. d'Espezel, GBA, II, 1934, pp. 42–59. W. B. Dinsmoor, AB, XXIV, 1942, pp. 55–91. See also SERLIO, SEBASTIANO. – *Lorenzo Sirigatti*: La Pratica di prospettiva . . ., Venice, 1596. – *Cristoforo Sorte*: Osservationi nella pittura, Venice, 1580. – *Benedetto Varchi*: Due lezioni sopra la pittura e la scultura, Florence, 1546. – *Giorgio Vasari*: Ragionamenti, Florence, 1588 and later reprints including ed. issued as Trattato della pittura, Florence, 1619. – *Jacopo Barozzi da Vignola*: Regole delli cinque ordini d'architettura in 32 tavole, n.p., n.d. [1562]; 2d ed., n.p., n.d. [ca. 1570], many later eds. and trans. Le due regole della prospettiva pratica con commentarj del P. Egnatio Danti, Rome, 1583; other eds.: Rome, 1611, 1644. – *Hans Vredeman de Vries*: Artis perspectivae plurium generum elegantissimae formulae . . ., Antwerp, 1568; other ed.: The Hague, 1604. – *Federico Zuccari* (*Zuccaro*): L'idea de' scultori, pittori e architetti divisa in due libri, Turin, 1607; other ed.: G. Bottari, in Raccolta di lettere, VI, Rome, 1768, p. 33 ff. Il passaggio per l'Italia, Bologna, 1608. Scritti d'arte, ed. D. Heikamp, in Fonti per lo studio della storia dell'arte inedite o rare, I, Florence, 1961.

The 17th and 18th centuries. a) Italy. Pietro Accolti: Lo inganno degli occhi, prospettiva pratica, trattato in acconcio della pittura, Florence, 1625. – *Giovanni Battista Agucchi*: D. Mahon, Studies in Seicento Art and Theory, London, 1947, pp. 111–54, 231–75. – *Francesco Algarotti*: Saggio sopra l'architettura, Pisa, 1753. Saggio sopra la pittura, Bologna, 1762 (trans.: Eng.: London, 1764; Fr.: Paris, 1769; Ger.: Kassel, 1769). Saggi sopra l'accademia di Francia . .

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

in Roma, Leghorn, 1763. Opere, 8 vols., Leghorn, 1764–65; 10 vols., Cremona, 1778–84; 17 vols., Venice, 1791–94. A Gabrielli, CrArte, III, 1938, pp. 155–69, IV–V, 1939–40, pp. 24–31. C. L. Ragghianti, L'architettura in funzione e F. Algarotti, Commenti di critica d'arte, Bari, 1946. – *Costanzo Amichevoli*: Architettura civile ridotta a metodo facile e breve, Turin, 1675. – *Filippo Baldinucci*: Lettera al marchese Capponi nella quale risponde ad alcuni quesiti in materia di pittura, Florence, 1687. La Veglia o dialogo di Sincero Veri, in cui si disputano e sciolgono varie difficoltà pittoriche, 1690. Raccolta di alcuni opuscoli sopra varie materie di pittura, scultura e architettura, Florence, 1765. Lettere . . . intorno al modo di dar proporzione alle figure di pittura e scultura . . ., ed. Poggiali, Leghorn, 1802. Vocabolario toscano dell'arte del disegno . . ., Florence 1681; other eds.: Florence, 1806; Milan, 1809. – *Pietro Antonio Barca*: Avvertimenti e regole circa l'architettura civile, scultura, pittura, prospettiva e architettura militare, Milan, 1620. – *Giovanni Pietro Bellori*: L'idea della Pittura, Scultura ed Architettura (introduction to Le Vite), Rome, 1672; reprinted with commentary in E. Panofsky, Idea, Berlin, Leipzig, 1924, pp. 130–39, Italian ed., Florence, 1952, pp. 183–96. S. Bottari, La critica, figurativa e l'estetica moderna, Bari, 1935, pp. 85–96. K. Donahue, Marsyas, III, 1946, pp. 107–38. – *Saverio Bettinelli*: Lettere XX di una dama ad una sua amica sulle belle Arti, Venice, 1793. – *Fra Francesco Bisagno*: Trattato della Pittura fondato nell'autorità di molti eccellenti in questa professione, fatto a comune beneficio de' virtuosi, Venice, 1642. – *Cardinal Federigo Borromeo*: De pictura sacra libri duo, Milan, 1625 (It. trans.: Mons. Grasselli, Il museo del Cardinal Federigo Borromeo, Milan, 1909). – *Francesco Borromini*: Opus architectonicum equitis Francisci Borromini ex eiusdem exemplaribus petitum, Rome, 1735. – *Giovanni Gaetano Bottari*: Dialoghi sopra le tre arti del disegno, Lucca, 1754. – *Giovanni Branca*: Manuale d'architettura cioè breve e risoluta pratica in sei libri, Ascoli, 1629; other eds.: Rome, 1718 ff.; Modena, 1789. – *Alessandro Capra*: La nuova architettura familiare, Bologna, 1678. – *Fabricio Carini-Motta*: Trattato sopra la struttura de' teatri e scene che a' nostri giorni si costumano, Guastalla, 1676. – *Giovanni Maria Ciocchi*: La Pittura in Parnaso, Florence, 1725. – *Gaspare Colombina*: Discorso distinto in IV capitoli, nel I de' quali si discorre del Disegno . . .; nel II della pittura . . ., Padua, 1623. – *Antonio Franchi*: La teorica della pittura, ovvero trattato delle materie più necessarie per apprendere con fondamento quell'arte, Lucca, 1739. – *Teofilo Gallaccini*: Trattato sopra gli errori degli architetti, Venice, 1767. E. Battisti, B. del Centro di Studi per la Storia dell'Architettura, XIV, 1959, pp. 28–38. – *Ferdinando Galli Bibiena*: L'Architettura civile preparata sulla geometria e ridotta alle prospettive, considerazioni pratiche, Parma, 1711. Direzioni ai giovani studenti del disegno dell'architettura civile e delle prospettive teorica, Bologna, 1731 ff. – *Cornelio Gigli*: La pittura trionfante scritta in IV capitoli, Venice, 1615. – *Guarino Guarini*: Modo di misurar le fabbriche, Turin, 1674. Architettura civile, Turin, 1737. – *Carlo Lodoli*: see below, *Memmo*. – *Andrea Memmo*: Elementi d'architettura Lodoliana . . ., Rome, 1786, other eds.: Zara, 1834; Milan, 1834. M. L. Gengaro, L'Arte, XL, 1937, pp. 313–17. E. Kaufmann, J. of the American Soc. of Architectural Historians, IV, 1944, pp. 23–29. A. Gabrielli, Arti figurative, I, 1945, pp. 123–36. – *Giulio Mancini*: Considerazioni sulla pittura (ca. 1620), ed. A. Marucchi and L. Salerno, 2 vols., Rome, 1956–57. L. Salerno, Comm, II, 1951, pp. 26–39. – *Girolamo Masi*: Teoria e pratica di architettura civile . . ., Rome, 1788. – *Francesco Milizia*: Dell'Arte di vedere nelle belle arti del disegno secondo i principj di Sultzer e di Mengs, Venice, 1781, 1792; other eds.: G. Natalizi, Bassano, 1813; Venice, 1823. Principj d'architettura civile, 3 vols., Finale, 1781. Dizionario delle belle arti del disegno, 2 vols., Bassano, 1797. Opere complete, 9 vols., Bologna, 1826. G. Fontanesi, Francesco Milizia, scrittore e studioso d'arte, Bologna, 1932. F. Ulivi, Paragone, III, 1952, pp. 3–18. – *Ludovico Antonio Muratori*: Riflessioni sopra il buon, Cologne, 1721. – *Carlo Cesare Osio*: Architettura civile, Milan, 1641, 1661, 1686. – *Giandomenico Ottonelli, S. J., and Pietro da Cortona*: Trattato della pittura e scultura, uso ed abuso loro, composto da un theologo e da un pittore, per offrirlo ai Sigg. Accademici del Disegno di Firenze (published under the anagrammatic pseudonym Odomenigio Lelonotti da Fanano e Britio Prenettieri), Florence, 1652. – *Lione Pascoli*: E. Battisti, RendLine, Classe di scienze morali, storiche e filosofiche, ser. 8, VIII, 1953, pp. 122–50. E. Battisti, Lione Pascoli, Luigi Vanvitelli e l'urbanistica italiana del Settecento, Atti dell'VIII Convegno Naz. di Storia dell'Architettura, Caserta, 1963, pp. 50–64. – *Giovan Battista Passeri*: Opuscolo sull'architettura (in Ger.), in Zufriedenen, Nürnberg, 1783; Italian text in G. A. Lazzarini, Opere e dissertazioni in materia di belle arti, Pesaro, 1806. – *Andrea Pozzo*: Perspectiva pictorum et architectorum (in Lat. and It., and including the Breve istruzione per dipingere a fresco), 2 vols., Rome, 1693–1702; other eds.: Rome, 1700, 1717, 1723, 1737, 1764, 1798; Augsburg, 1706, 1719 (both in Lat. and Ger.); J. James, Rules and Examples of Perspective, London, 1707 (in Lat. and Eng.). See also POZZO, ANDREA. – *Salvator Rosa*: Satire, 1st ed. (falsely giving Amsterdam as place of publication; ca. 1664); other eds.: A. M. Salvini, London [actually Leghorn], 1770 ff.; G. Carducci, Florence, 1860. Poesie e lettere edite e inedite, ed. G. A. Cesareo, Naples, 1892; another ed.: U. Limentani, Poesie e lettere inedite di Salvator Rosa, Florence, 1950 (Bib. della Arch. Rom., ser. I, vol. 31). U. Limentani, La satira nel Seicento, Milan, Naples, 1961, pp. 113–244. L. Salerno, Salvator Rosa, Milan, 1963. – *Francesco Scannelli*: Il Microcosmo della Pittura . . ., Cesena, 1657. – *Pietro Testa* (*Il Lucchesino*): Trattato di pittura, ms. in Städtischen Kunstsammlungen, Düsseldorf. A. Marabottini, Comm, V, 1954, pp. 217–44. – *Giulio Troili da Spilamberto* (*Paradosso*): Paradossi per praticare la prospettiva senza saperla, Bologna, 1672. – *Giuseppe Viola Zanini*: Della architettura, Padua, 1629; other eds.: Padua, 1677, 1698. – *Antonio Visentini*: Osservazioni di Antonio Visentini architetto Veneto, che servono di continuazione al trattato del Gallaccini, Venice, 1772. – *Antonio Maria Zanetti*: M. Pittaluga, L'Arte, XXI, 1918, p. 6 ff. – *Giovanni Pietro Zanotti*: Avvertimenti per lo incamminamento di un giovane alla pittura, Bologna, 1756. *b*) *Spain. Nicolas de Arce y Cacho*: Conversaciones sobre la escultura . . ., Pamplona, 1786. – *Juan de Arfe y Villafañe*: De varia commensuración para la esculptura y architectura, Seville, 1585; other eds.: Madrid, 1675, 1736. – *Juan Interian de Ayala*: Pictor christianus eruditus sive de erroribus qui passim committuntur circa pingendas atque effigendas sacras imagines, Madrid, 1730 (Sp. trans., Duran y de Bastéro, 2 vols., Madrid, 1782). – *Juan de Butrón*: Discursos apologéticos en que se defiende la ingenuidad de la pintura y noble de ambos derechos, Madrid, 1626. – *Vincenzo Carducci* (*Vicente Carducho*): Diálogos de la pintura, Madrid, 1633; other ed.: C. Villaamil, Madrid, 1865. A. Fumagalli, Athenaeum, Studii periodici di letteratura e storia, II, 1914. – *Simón García*: Compendio de arquitectura y simetría de los templos [1681], 1st ed., J. Camón, Salamanca, 1941. – *José García el Hidalgo*: Principios para estudiar el arte de la pintura, Madrid, 1691. – *Felipe de Guevara*: Comentarios de la pintura (16th cent.), Madrid, 1788 (with notes by A. Ponz). J. Allende-Salazar, Archivio Esp. de arte y arqueol., I, 1925, pp. 1889–92. – *Jusepe Martínez*: Discursos practicables del nobilísimo arte de la pintura, sus rudimentos, medios y fines que enseña la experiencia con los ejemplares de obras insignes de artífices ilustres, Madrid, 1866 (ed. V. Carderera y Soleno). – *Gregorio Mayans y Siscar*: Arte de pintar [1776], Madrid, 1854. – *Filippe Nunes*: Arte poetica, e da pintura, e symmetria, com principios da perspectiva, Lisbon, 1615. Arte de pintura . . ., Lisbon, 1767. – *Francisco Pacheco*: Arte de la pintura, su antiguedad y grandezas . . ., Seville, 1649; other ed.: Madrid, 1866. – *Antonio Palomino de Castro y Velasco*: El museo pictórico y escala óptica, 3 vols., Madrid, 1715–24; other eds.: Madrid, 1795–97, 1947. – *Diego del Sagredo*: Medidas del Romano . . ., Toledo, 1526; other eds. and trans., including facsimile reprint of 1st ed., Madrid, 1946. – *Marqués de Vreña*: Reflexiones sobre la arquitectura, ornato y musica del templo contra los procedimientos arbitrarios sin consulta de la Escritura Santa, de la disciplina rigorosa y de la critica facultativa, Madrid, 1785. *c*) *France. Antoine Joseph Dézallier d'Argenville*: La théorie et la pratique du jardinage, Paris, 1709, 1728; (Eng. trans.: London, 1712; J. James, London, 1728). See also VII, col. 543. – *Charles Batteux*: Les Beaux-Arts réduits à un même principe, Paris, 1746. – *François Blondel* (*the Elder*): Cours d'architecture, 2 vols., Paris, 1675–83; other ed., Paris, 1698. – *Jacques François Blondel*: Cours d'architecture, 9 vols., Paris, 1771–77. – *Gabriel Germain Boffrand*: Description de ce qui a été pratiqué pour fondre en bronze d'un seul jet la figure équestre de Louis XIV . . ., Paris, 1743. Livre d'architecture, Paris, 1745 (in Lat. and Fr.). – *Abraham Bosse*: Traicté des manières de graver en taille-douce, Paris, 1645, 1664; enlarged ed., Paris, 1701, 1745, 1758. Sentiments sur la distinction des diverses manières de peinture . . ., Paris, 1649. La Peintre converti aux . . . règles de son art, Paris, 1667. L. Servolini, Abraham Bosse e il suo Trattato della Calcografia, Bologna, 1937. L. Servolini, Acd. e Bib. d'Italia, XIV, 1939, pp. 20–31. – *Julius Caesar Boulenger*: De pictura, plastica, statuaria, Lyons, 1627. – *Charles Etienne Briseux*: Traité du beau essentiel dans les arts appliqués . . ., Paris, 1752. – *Jean Bullant*: Règle générale d'architecture de cinq manières de colonnes, Rouen, 1674. – *Anne Claude Philippe, Comte de Caylus*: Nouveaux sujets de peinture et sculpture, Paris, 1755. – *Roland Fréart de Chambray*: Idée de la perfection de la peinture . . ., Mans, 1662 (Eng. trans., J. Evelyn, London, 1668). – *Louis Géraud de Cordemoy*: Nouveau traité de toute l'architecture, Paris, 1706. – *Antoine Coypel*: Discours prononcez dans les conférences de l'Académie Royale, Paris, 1721. – *Charles Antoine Coypel*: Discours sur la peinture, Paris, 1732. – *Charles Augustin Daviler*: Cours d'architecture, 2 vols., Paris, 1691 (2d vol. contains his Dictionnaire d'architecture); other eds.: Paris, 1693–96; annotated by P. J. Mariette, Paris, 1738, 1756, 1760 (Ger. trans., L. Sturm, Augsburg, 1725). – *Denis Diderot*: Essai sur la peinture, Paris, 1796. Les Salons, Paris, 1798 (in the Œuvres); ed. H. Adhémar and J. Seznec, 3 vols., Oxford, 1957–63. Œuvres, 15 vols., Paris, 1798. – *Jean Baptiste*

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Dubos: Réflexions critiques sur la poésie et la peinture, Paris, 1719 (Eng. trans., London, 1748). – *Jean Dubreuil*: Le perspective pratique, Paris, 1642–49 (Eng. trans., 1672). – *Charles Alphonse Dufresnoy*: De arte graphica, Paris, 1667; other eds.: with annotations and Dialogue sur le coloris (in Lat. and Fr.) by R. de Piles, Paris, 1673, 1684, 1688, 1751; with De Watelet's didactic poem L'Art de Peindre (see below, *De Watelet*), Paris, 1760 ff. (Eng. trans.: J. Dryden, London, 1695, 1716, 1750, 1769; W. Mason, annotated by J. Reynolds, York, 1783; for other eds. and trans. see Schlosser, p. 635). W. Folkierski, Rev. de littérature comparée, XXVII, 1953, pp. 385–402. – *Estève*: Dialogues sur les arts entre un artiste américain et un amateur français, Amsterdam, 1756. – *Etienne Maurice Falconet*: Réflexions sur la sculpture, Amsterdam, 1761. Les œuvres d'Etienne Falconet, statuaire, Lausanne, 1781. E. Hildebrandt, Leben, Werke und Schriften des Bildhauers Etienne Maurice Falconet, Strasbourg, 1908. H. Dieckmann and J. Seznec, Warburg, XV, 1952, pp. 198–228. – *André Félibien*: Des principes de l'architecture, de la sculpture, de la peinture et des autres arts, qui en dépendent, avec un dictionnaire des termes propres à chacun de ces arts, Paris 1676, 1690, 1697, 1699. Conférences de l'Académie Royale pendant l'année 1667, Paris, 1669, Amsterdam, 1706 (Eng. trans., London, 1740). Complete ed. of the works of Félibien, 6 vols., Trévoux, 1725. – *Amédée François Frézier*: Le théorie et la pratique de la coupe des pierres et des bois pour la construction des voûtes . . ., 3 vols., Strasbourg, Paris, 1737–39; 3 vols., Paris, 1754–69. – *C. F. Jouillain*: Réflexions sur la peinture et la gravure, Metz, 1786. – *La Font de Saint-Yenne*: Réflexions sur la peinture [Paris], 1746. Le Génie du Louvre aux Champs Elysées: Dialogue entre le Louvre, la ville de Paris, l'ombre de Colbert et Perrault [Paris], 1756. Examen d'un essai sur l'architecture, Paris, 1753. – *de La Fontaine*: Académie de la peinture, nouvellement mise au jour pour instruire le jeunesse à bien peintre en huile et en miniature . . ., Paris, 1679. – *Marc Antoine Laugier*: Essai sur l'architecture, Paris, 1753–55, The Hague, 1765 (Eng. trans., London, 1755, 1786). Observations sur l'architecture, The Hague, Paris, 1765. Manière de bien juger des ouvrages de peinture, Paris, 1771. – *Charles Lebrun* (*Le Brun*): Méthode pour apprendre à dessiner les passions, Paris, Amsterdam, 1698; other eds.: Amsterdam, 1702, 1713; Paris, 1718, 1727 (trans.: Ger.: Augsburg, 1704, 1732; Eng.: J. Williams, A Method to Learn to Design Passions, London, 1734; Bowles's Passions of the Soul, London, n.d.; It.: Verona, 1751, with Fr. text.). See also LEBRUN, CHARLES. – *Le Camus de Mézières*: Le génie de l'architecture ou l'analyse de cet art avec nos sensations, Paris, 1780. – *Sébastien Le Clerc*: Traité d'architecture, avec des remarques et des observations très-utiles pour les jeunes gens qui veulent s'appliquer à ce bel art, Paris, 1714 (Eng. trans., W. Chambers, London, 1732). – *Claude Nicolas Ledoux*: L'architecture considerée sous le rapport de l'art des moeurs et de la législation, Paris, 1804; facsimile ed., Paris, 1962. E. Kaufmann, Transactions of the Am. Philosophical Soc., N.S., XLII, 3, 1952, pp. 431–564. See also LEDOUX, CLAUDE NICOLAS. – *François Lemée*: Traité des statues, Paris, 1688. – *Jean Etienne Liotard*: Traité des principes et des règles de la peinture, Geneva, 1781; other ed., with pref. by P. Courthion, Geneva, 1945. – *Pierre Jean Mariette*: Description des travaux . . ., de la statue équestre de Louis XV . . ., Paris, 1768. – *Jean Baptiste Oudry*: Discours sur la pratique de la peinture et ses procédés principaux: ébaucher, peindre à fond et retoucher [18th cent.], in E. Piot, Le cabinet de l'amateur, 1861–62, pp. 107–17. – *Hilaire Pader*: La peinture parlante, Toulouse, 1653, 1657. Songe énigmatique sur la peinture universelle, Toulouse, 1658. – *Pierre Patte*: Discours sur l'architecture, Paris, 1754. Mémoires sur . . . l'architecture, Paris, 1769. Essai sur l'architecture théâtrale, Paris, 1782. – *Pelletier*: Remarques sur les erreurs des peintres . . ., in Mémoires de Trévoux, 1704–05 (Ger. trans., Kritische Anmerkung über die Fehler der Maler, Leipzig, 1772). – *Charles Perrault*: Parallèles des anciens et des modernes en ce qui regarde les arts et les sciences, Paris, 1688, 1692; Amsterdam, 1693. – *Claude Perrault*: Ordonnances des cinq espèces de colonnes selon la méthode des anciens, Paris, 1676, 1683, 1733 (Eng. trans., J. James, Treatise of the Five Orders, London, 1708). See also PERRAULT, CLAUDE. – *Roger de Piles*: Dialogue sur le coloris (see above, *Dufresnoy*), Paris, 1673, 1699 (Eng. trans., London, 1711). Les premiers éléments de la peinture pratique [publ. anon.], Paris, 1684; other ed.: Eléments de la peinture pratique, Amsterdam, Leipzig, 1776. L'idée du peintre parfait, together with Abrégé de la Vie des peintres, Paris, 1699 (trans.: Eng.: London, 1711; It.: Turin, 1769; Venice, 1771, 1772). Cours de peinture par principes, Paris, 1708, 1766, 1791 (trans.: Eng.: London, 1743; Ger.: Leipzig, 1760). Récueil de divers ouvrages sur la peinture et le coloris, Paris, 1755; Amsterdam, 1767, 1775. A. Pittaluga, L'Arte, XX, 1917, p. 337 ff. L. Mirot, Roger de Piles, Paris, 1924. J. Steegman, AW, XVII, 1954, pp. 255–61. – *Henry Testelin*: Sentiments des plus habiles peintres sur la pratique de la peinture et sculpture mis en tables de préceptes, Paris, 1680, 1696 (Ger. trans., J. Sandrart, Anmerkungen der fürtrefflichsten Mahler unserer Zeit . . ., Nürnberg, 1699). – *Louis Tocqué*: Réflexions sur la peinture et particulièrement sur le genre du portrait [1750], first published A. Doria, B. de la Soc. de l'histoire de l'Art française, 1929, pp. 259–92. – *Claude Henri de Watelet*: L'art de peindre, Poème avec des réflexions sur les différentes parties de la peinture, Paris, 1760 (see above, *Dufresnoy*), Amsterdam, 1761. Essai sur les jardins, Paris, 1772 (Ger. trans., Leipzig, 1776). Dictionnaire des arts de peinture, sculpture et gravure, 5 vols., Paris, 1792. *d) Low Countries*: *Petrus Camper*: Verhandeling over het natuurlijk verschil der wezenstrekken in menschen van onderscheiden landaart en ouderdom; over het schoon in antyke beelden en gesneedene steenen; eene nieuwe manier om hoofden . . . te tekenen . . ., Utrecht, 1791. Œuvres, Paris, 1803 (Eng. trans., The Works of the late Professor Camper . . ., London, 1794, 1821). – *Willem Goeree*: Inleyding tot de allgemeene Teykenkonst, Middelburg, 1668, 1670; Amsterdam, 1697, 1705. Inleyding tot de Praktyk der algemeene Schilderkonst, Middelburg, 1670; Amsterdam, 1697, 1704. Natuurlyk en Schilderkonstig Ontwerp der Menschkunde . . ., Amsterdam, 1682. – *Samuel van Hoogstraeten*: Inleyding tot de Hooge Schoole der Schilderkonst: anders de zichtbare Werelt, verdeelt in negen Leerwinkels yder bestiert door eene der zanggodinnen, Middelburg, 1641; Rotterdam, 1678. – *Franciscus Junius*: see below, *England*. – *Gérard de Lairesse*: Het Groot Schilderboek, Amsterdam, 1707, 1712, 1714, 1716; Haarlem, 1740 (trans.: Fr.: Paris, 1787; Ger.: Nürnberg, 1728). J. J. M. Timmers, Gérard Lairasse, Amsterdam, 1942. – *Peter Paul Rubens*: De imitatione antiquarum statuarum (included in R. de Piles, Cours de peinture par principes, Paris, 1708; see above, *De Piles*). Théorie de la figure humaine, considérée dans ses principes, soit en repos ou en mouvement, Ouvrage traduit du Latin de P. P. Rubens, Paris, 1773 [spurious work]. *e) England*: *William Aglionby*: Painting illustrated in Three Diallogues . . ., London, 1685, 1719. – *James Barry*: An Enquiry into the Real and Imaginary Obstructions to the Acquisition of the Arts in England, London, 1775. Lectures on Painting, in The Works of James Barry, 2 vols., London, 1809. – *Alexander Browne*: Ars pictoria, London, 1669, 1675. – *Edmund A. Burke*: A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful, London, 1756; other ed., J. T. Boulton, London, New York, 1958. – *William Chambers*: Designs of Chinese Buildings . . . to which is annexed a Description of Their Temples, Houses, Gardens, London, 1753, 1757 (Fr. trans., Paris, 1776). A Dissertation on Oriental Gardening, London, 1772, 1773 (Ger. trans., Gotha, 1775). Treatise on Civil Architecture, London, 1759, 1768. – *Anthony Ashley Cooper, Earl of Shaftesbury*: Plastics, or the Original Progress and Power of Designatory Art, in Second Characters, or the Language of Forms in Four Treatises, ed. B. Rand, Cambridge, 1914. E. Wind, Warburg, II, 1938–39, pp. 185–88. W. Wells, Leeds Art Calendar, III, 1950, pp. 23–28. – *Alexander Cozens*: A New Method of Assisting the Invention in Drawing Original Composition of Landscape, London, n.d. [ca. 1785]; repr. in A. P. Oppé, Alexander and John Robert Cozens, London, 1952. – *Edward Dayes*: The Works: containing . . . Essays on painting . . ., London, 1805 (Ger. trans., Über Malerei, Nürnberg, 1804). – *Albert Durer Revived or a Book of Drawing, Limning, Washing or Colouring of Maps and Prints, and the Art of Painting, with the Names and Mixture of Colours used by the Picture Drawers, with Directions, how to Lay and Paint Pictures upon Glass*, London, 1660, 1666, 1680. – *John Elsum*: The Art of Painting after the Italian Manner, with Practical Observations on the Principal Colours and Directions how to Know a Good Picture, London, 1703, 1704. – *John Evelyn*: Sculptura or the History and Art of Chalcography . . ., London, 1662; other ed., C. F. Bell, London, 1906. – *William Faithorne*: The Art of Graveing and Etching . . ., 1662; enlarged ed., 1702. – *Henry Fuseli* (*Johann Heinrich Füssli*): Lectures on Painting, delivered at the Royal Academy, 2 vols., London, 1801–20. Complete writings, The Life and Writings of H. Fuseli, 3 vols., London, 1831. Anthology of selected writings with an introduction by E. C. Mason, The Mind of H. Fusely, London, 1951. – *Alexander Gerard*: An Essay on Taste, London, 1759. – *William Gilpin*: An Essay upon Prints Containing Remarks upon the Principles of Picturesque Beauty, London, 1768, 1781. Three Essays: on Picturesque Beauty; on Picturesque Travel; and on Sketching Landscape, to which is Added a Poem on Landscape Painting, London, 1792, 1794. – *Nicholas Hilliard*: A Treatise Concerning the Art of Limning, ed. by P. Norman, Walpole Society, I, 1911–12, pp. 1–54. J. Pope-Hennessy, Warburg, VI, 1943, pp. 89–100. – *William Hogarth*: The Analysis of Beauty, London, 1753, 1772, 1810, 1812. J. Burke, Hogarth and Reynolds, A Contrast in English Art Theory, Oxford, 1943. – *David Hume*: Of the Standard of Taste, in Four Dissertations, London, 1757. – *Franciscus Junius*: De pictura veterum libri tres, Amsterdam, 1637; other ed., Rotterdam, 1694 (trans.: Eng.: The Painting of the Ancients in Three Books, London, 1638; D.: De Schilderkonst der Ouden, Middelburg, 1641). – *Richard Payne Knight*: An Analytical Enquiry into the Principles of Taste, London, 1795. N. Pevsner, AB, XXXI, 1949, pp. 293–320. – *Charles La*

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Motte: Essay upon Poetry and Painting . . ., London, 1730. – *Batty Langley*: New Principles of Gardening, London, 1728. The Builders Compleat Assistant, or a Library of Arts and Sciences Absolutely Necessary to be Understood by Builders and Workmen, London, 1738. Gothic Architecture Improved by Rules and Proportions to which is Added an Historical Dissertation on Gothic Architecture, London, 1747. – *William Mason*: The English Garden, London, 1772 (Ger. trans., Leipzig, 1773). – *Joseph Moxon*: Practical Perspective, London, 1670. – *J. H. Müntz*: Encaustic, or Count Caylus's Method of Painting in the Manner of the Ancients, London, 1760. – *Edward Norgate*: Miniatura, or the Art of Limning [1650], Oxford, 1919. – *Thomas Page*: The Art of Painting in its Rudiment, Progress and Perfection, Delivered Exactly as it is Put in Practise, London, 1720. – *Henry Peacham*: The Art of Drawing with Pen and Limning in Water Colours, London, 1606. – *Joseph Holden Pott*: An Essay on Landscape Painting, with Remarks, General and Critical, on the Different Schools and Masters, Ancient or Modern, London, 1782, 1793. – *Uvedale Price*: An Essay on the Picturesque as Compared with the Sublime and the Beautiful, and on the Use of Studying Pictures for the Purpose of Improving Real Landscape, London, 1794, 1796, 1798. A Dialogue on the Distinct Characters of the Picturesque and the Beautiful, Prefaced by an Introductory Essay on Beauty, with Remarks on the Ideas of Sir Joshua Reynolds and Mr. Burke, upon that Subject, Hereford, 1801. – *Sir Joshua Reynolds*: Discourses Delivered at the Royal Academy, issued separately, London, 1769–91; complete ed., 1800; other eds., 1884, 1901, 1924, 1959. Reynolds's complete works ed. by E. Malone, London, 1797, 1798. W. J. Hipple, J. of Aesthetics and Art Criticism, XI, 1952–53, pp. 231–47. See also REYNOLDS, SIR JOSHUA. – *Jonathan Richardson the Elder*: An Essay on the Theory of Painting, London, 1715, 1725. The Connoisseur: An Essay on the Whole Art of Criticism as it Relates to Painting and a Discourse on the Dignity, Certainty, Pleasure and Advantage of the Science of a Connoisseur, London, 1719. Works (together with those of Jonathan Richardson the Younger), London, 1772, 1792. – *John Russel*: Elements of Painting with Crayons, London, 1772; enlarged ed., London, 1777. – *William Salmon*: Polygraphice, or the Arts of Drawing, Engraving . . ., London, 1672. – *William Salmon*: Palladio Londinensis, or the London Art of Building, London, 1734. – *William Sanderson*: Graphice, The Use of the Pen and Pensill, or, the Most Excellent Art of Painting, London, 1658. F. Hard, Studies in Philology, XXXVI, 1939, pp. 227–34. – *John Shute*: The First and Chief Groundes of Architecture, London, 1563; facsimile ed., L. Weaver, London, 1912. – *Marshall Smith*: The Art of Painting . . ., 1692–93. – *Horace Walpole*: Anecdotes of Painting in England, with Some Account of the Principal Artists, and Incidental Notes on Other Arts, collected by the Late George Vertue . . ., 4 vols., with supplement, Strawberry Hill, 1762–71. See also WALPOLE, HORACE. – *Daniel Webb*: An Inquiry into the Beauties of Painting and into the Merits of the Most Celebrated Painters, Ancient and Modern, London, 1760, 1761, 1769, 1777. L. Salerno, English Miscellany, II, 1951, pp. 279–85. – *Henry Wotton*: The Elements of Architecture, London, 1624. *f) Germany*: *Georg Andreas Böckler*: Compendium architecturae civilis, Frankfurt am Main, 1648. – *Paul Decker*: Fürstlicher Baumeister oder Architectura civilis, wie grösser Fürsten und Herren Palläste . . . anzulegen und nach heutiger Art auszuzieren, 2 vols., Augsburg, 1711–16. Das königliche Schloss zu Berlin, wie es nach Schlüters Gedanken gebaut werden sollte (in collaboration with Jakob Wilhelm Heckenauer), Berlin, 1703. – *Carl Ludwig Fernow*: Römische Studien, 3 vols., Zurich, 1806–08. – *Johannes Georg Forster*: Ansichten vom Niederrhein, von Brabant, Flandern, Holland, England, und Frankreich in April, Mai und Junius 1790, 3 vols., Berlin, 1791 (Fr. trans., Paris, 1795). – *Josef Furttenbach the Elder*: Architectura universalis, Ulm, 1635. Architectura recreationis, Augsburg, 1640. Architectura privata, Augsburg, 1641. – *Henry Fuseli* (*Johann Heinrich Füssli*): See above, *England*. – *Salomon Gessner*: Brief über die Landschaftsmahlerey an Herrn Füesslin, Zurich, 1787. – *Nikolaus Goldmann*: Elementorum Architecturae Militaris, Leiden, 1643. Vollständige Anweisung zu der Civilbaukunst (expanded by L. C. Sturm), Wolfenbüttel, 1696; other eds.: Leipzig, 1708; Augsburg, 1721. – *Christian Ludwig von Hagedorn*: Betrachtungen über die Mahlerey, 2 vols., Leipzig, 1762 (Fr. trans., M. Huber, Leipzig, 1775). – *Johann Gottfried Herder*: Plastik, Einige Wahrnehmungen über Form und Gestalt aus Pygmalions bildendem Traume, Riga, 1778. Complete works, 45 vols., Tübingen, 1805–20; other ed., 33 vols., Berlin, 1877–1913. – *Christian von Hirschfeld*: Theorie der Gartenkunst, 5 vols., Leipzig, 1775–85 (Fr. trans., Leipzig, 1779–85). Von der moralischen Einwirkung der bildenden Künste, Frankfurt am Main, 1775. – *J. F. Jünger*: De inanibus picturis, Leipzig, 1678. – *C. L. Junker*: Grundsätze der Mahlerei für ihre Liebhaber, Zurich, 1775. Betrachtungen über Mahlerei, Tonund Bildhauerkunst, Basel, 1778. – *Georg Wolfgang Krafft*: Resolutiones problematum spectantium ad architecturam civilem, in Verhandlungen der St. Petersburger Akademie der Wissenschaften, IV, 1750. Specimen emendationis theoriae Ordinum Architectonicorum, ibid., XI, 1758. – *Friedrich August Krubsacius*: Betrachtungen über den Geschmack der Alten in der Baukunst, Leipzig, 1745 [Neuer Büchersaal der schönen Wissenschaften und freien Künste, IV]. Gedanken von dem Ursprung, Wachstum und Verfall der Verzierunge in den schönen Künsten, Leipzig, 1759. – *Gotthold Ephraim Lessing*: Laokoon oder über Grenzen der Malerei und Poesia, Berlin, 1766 (trans.: Fr.: Paris, 1802; It.: Milan, 1833; Eng.: London, 1836). – *Georg Christoph Lichtenberg*: Ausführliche Erklärungen der Hogarthischen Kupferstiche, Göttingen, 1794; other ed., H. Eggurt, Erfurt, 1949 (trans.: Fr.: Göttingen, 1797; Swed.: Gefle, 1840). – *Karl Eusebius von Liechtenstein*: Werk von der Architektur, in V. Fleischer, Fürst Karl Eusebius von Liechtenstein als Bauherr und Kunstsammler, Vienna, Leipzig, 1910. – *Anton Raphael Mengs*: Gedanken über die Schönheit und den Geschmack in der Mahlerey (pub. by C. Füssli without Mengs's name), Zurich, 1762, 1765; with Mengs's name, 1774, 1788 (It. trans., Augsburg [actually Perugia], 1784). Complete writings, Opere pubblicate da G. N. D'Azaro, 2 vols., Parma, 1780; other eds., Bassano, 1783; C. Fea, Rome, 1787 (trans.: Ger.: Halle, 1786; Bonn, 1843–44; Sp.: Madrid, 1780, 1797; Fr.: Amsterdam, 1781; Ratisbon, 1782; Paris, 1786; Eng.: London, 1796). – *K. Ph. Moritz*: Über die bildende Nachahmung des Schönen, Brunswick, 1788; repr. by B. Seuffert, Deutsche Literaturdenkmäler des 18. und 19. Jahrhunderts, fasc. 31, Stuttgart, 1888. – *Peter Mueller*: De Pictura sive praecognita pictura, de excellentia artis pictoriae, de privilegiis tam Picturae quam Pictorum, de abusu Picturae et poena Pictorum, Jena, 1692. – *Johannes Friedrich von Racknitz*: Briefe über die Kunst . . ., Dresden, 1792, 1794. Darstellung und Geschichte des Geschmacks der vorzüglichsten Völker, in Beziehung auf die innere Auszierung der Zimmer und auf die Baukunst, Leipzig, 1796. – *Friedrich Rambach*: Einige Gedanken über den Wert der Altertumskunde für die bildenden Künstler, Berlin, 1774. – *Wilhelm Basil von Ramdohr*: Charis oder über das Schöne und die Schönheit in den nachbildenden Künsten, 2 vols., Leipzig, 1793. – *Christian Rieger*: Universae architecturae civilis elementa, Vienna, 1756. Universae architecturae militaris elementa, Vienna, 1758. – *M. Philippus Rohr*: Pictor errans in historia sacra, Leipzig, 1679. – *Joachim von Sandrart* (see HISTORIOGRAPHY). – *Johannes Scheffer*: Graphice id est de arte pingendi Liber singularis, Nürnberg, 1660. – *Franz Christian Scheyb*: Köremons Natur und Kunst, 2 vols., Vienna, 1770. Orestrio von den drey Künsten der Zeichnung . . ., Vienna, 1774. – *Wilhelm Stettler*: Bericht von dem rechten Wege der Mahlerey, Bern, 1679. Der curiose Mahler, Dresden, 1679. – *Leonhard Christoph Sturm*: Predromus architecturae Goldmanniane, Augsburg, 1714; see above, *Goldmann*. – *Johann Georg Sulzer*: Allgemeine Theorie der schönen Künste, 2 vols., Leipzig, Berlin, 1771–74; enlarged ed., F. von Blackenburg, 4 vols., Leipzig, 1792–94. – *Wilhelm Heinrich Wackenroder*: Herzensergiessungen eines kunstliebenden Klosterbruders, Berlin, 1797. – *Johann Joachim Winckelmann*: Gedanken über die Nachahmung der griechischen Werke in der Malerei und Bildhauerkunst, Dresden, 1755 (Eng. trans., H. Fuseli, Reflections on the Painting and Sculpture of the Greeks, London, 1765; Glasgow, 1766). Abhandlung von der Fähigkeit der Empfindung des Schönen in der Kunst, Dresden, 1763. Versuch einer Allegorie besonders für die Kunst, Dresden, 1766. Complete works, 11 vols., Dresden, Berlin, 1808–25.

The 19th century. *Francesco Alberi*: Discorso sul disegno, Padua, 1810. – *Giovanni Antonio Antolini*: Idee elementari di architettura civile, Bologna, 1813. Osservazioni ed aggiunte ai principii di architettura civile di F. Milizia, Milan, 1817. – *Guillaume Apollinaire*: Peintres cubistes, Paris, 1913 (Eng. trans., The Cubist Painters: Aesthetic Meditations, New York, 1944). – *Alessandro Barca*: Saggio sopra il bello di proporzione in architettura, Bassano, 1806. – *Charles Baudelaire*: L'art romantique, Curiosités esthétiques, Varieté critiques, in Œuvres complètes, 7 vols., Paris, 1868–92. – *Antonio Bianchini*: Del purismo nelle arti, Rome, 1849. – *Charles Blanc*: Grammaire historique des arts du dessin, Paris, 1880. – *Umberto Boccioni*: Pittura, scultura futurista, Milan, 1914. Dinamismo plastico, Milan, 1916. Estetica e arte futurista, Milan, 1946. – *A. Cassagne*: Traité pratique de perspective, Paris, 1866. – *Jules Antoine Castagnary*: Salons 1857–1870, I, Paris, 1892. – *Adriano Cecioni*: Opere e scritti, Milan, 1932. – *Champfleury* (*Jules F. Husson*): Le réalisme, Paris, 1857. – *Michel Eugène Chevreul*: Loi du contraste simultané des couleurs, Paris, 1839. – *Leopoldo Cicognara*: Del bello, Florence, 1808. – *L. Cloquet*: Traité d'architecture, Paris, Liège, 1898–1900. – *Louis Courajod*: Leçons professées à l'école du Louvre, 3 vols., Paris, 1899–1903. – *Victor Cousin*: Du vrai, du beau et du bien, Paris, 1858. – *A. C. Dall'Acqua*: Sull'architettura, Imola, 1872. – *Eugène Delacroix*: Journal, with introduction by P. Flat and notes by P. Flat and R. Piot, Paris, 1893–95; other ed., A. Joubin, Paris, 1932 (Eng. trans., W. Pach, The Journal of Eugène Delacroix, 2d ed., New York, 1948). – *Konrad Fiedler*: Schriften über Kunst, Leipzig, 1896. – *Roger Fry*: Vision and Design, London, 1920. G. Price-Jones,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

L'Arte, XXXVIII, 1935, pp. 480–90. – *Nicolò Gallo*: La scienza dell'arte, Turin, 1885. – *Edward Lacy Garbett*: Rudimentary Treatise on the Principles of Design in Architecture, London, 1850. – *Théophile Gautier*: Les Beaux-Arts en Europe, 2 vols., Paris, 1855–56. L'Art moderne, Paris, 1856. – *Edmond and Jules de Goncourt*: Etudes d'art, Paris, 1893. – *J. Guadet*: Eléments et théorie de l'architecture, 4 vols., Paris, 1894–1915. – *François Guizot*: Etudes sur les Beaux-Arts, in Salon de 1801, Paris, 1852. – *Hermann L. F. von Helmholtz and E. W. Brücke*: Principes scientifiques des beaux-arts, Paris, 1878; 2d ed., 1881. – *Adolf von Hildebrandt*: Das Problem der Form in der bildenden Kunst, Strasbourg, 1893. – *Jean Auguste Dominique Ingres*: Notes, pensées, lettres, in H. Delaborde, Ingres, Paris, 1870. Ecrits sur l'art, Paris, 1947. De l'art et du beau, Milan, 1944. See also INGRES, JEAN AUGUSTE DOMINIQUE. – *Théodore Jouffroy*: Cours d'esthétique [1822], Paris, 1843. – *Félicité de Lamennais*: Œuvres complètes, Paris, 1836–37. – *Diego Martelli*: Scritti d'arte, Florence, 1953. – *Jacques Nicolas Paillot de Montabert*: Traité complet de la peinture, Paris, 1829. – *William Morris*: Art and its Producers, London, 1901. On Art and Socialism [Paulton (Somerset), London], 1947. – *Pierre Joseph Proudhon*: Du principe de l'art et de sa destination sociale, Paris, 1865. – *Augustus W. N. Pugin*: Designs for Gold- and Silversmiths, London, 1836. See also PUGIN, AUGUSTUS W. N. – *Antoine Chrysostome Quatremère de Quincy*: Essai sur la nature, le but et les moyens de l'imitation dans les Beaux-Arts, Paris, 1823. Dictionnaire historique d'architecture, Paris, 1832. Essai sur l'idéal, Paris, 1837. R. Schneider, L'esthétique classique chez Quatremère de Quincy, Paris, 1910. – *Alois Riegl*: Stilfragen, Berlin, 1893. – *John Ruskin*: Complete works, ed. E. T. Cook and A. Wedderburn, 39 vols., London, New York, 1903–12. – *Gottfried Semper*: Der Stil in den technischen und tektonischen Künsten, 2 vols., Frankfurt am Main, Munich, 1860–63. – *Théophile Silvestre*: Histoires des artistes vivants: Les artistes français, Etudes d'après nature, Paris, 1856; other eds., Paris, 1878; E. Faure, Paris, 1926 (both under the title Les artistes français). – *Hippolyte Taine*: Philosophie de l'art, Paris, 1865. – *Pierre Henri de Valenciennes*: Eléments de perspective pratique à l'usage des artistes, suivis de réflexions et conseils à un élève sur la peinture et particulièrement sur le genre du paysage, Paris, 1799–1800. – *Heinrich Wölfflin*: Kunstgeschichtliche Grundbegriffe, Munich, 1915. – *Wilhelm Worringer*: Abstraktion und Einfühlung, Berlin, 1908. – *Robert von Zimmermann*; Geschichte der Aesthetik als philosophische Wissenschaft, Vienna, 1858; Allgemeine Aesthetik als Formwissenschaft, Vienna, 1865. – *Emile Zola*; Mes haines; Causeries littéraires et artistiques: Mon selon [1866], Edouard Manet, étude biographique et critique [1867], new ed., Paris, 1880.

* *

THE EASTERN WORLD. *Islam*. The well-known Moslem diffidence, or even disapproval and prohibition, toward the figural arts is enough to explain the absence in Moslem culture of the treatises on art that might be expected to accompany the abundant historical, esthetic, and rhetorical writings on poetry. Even though the interest, taste, and perhaps passion for the plastic arts never completely disappeared, the theoretical treatments of those arts were generally limited to theological and juridical disquisitions on the lawfulness and the limits of such representations. In the periods and areas where the original severity gave way to a more enlightened and unprejudiced evaluation of artistic activity, which gained more and more dignity in life and in social esteem until it became an essential factor (especially, it would appear, in the Persian, Turkish, and Indian environments), interest was concentrated on the figures of the artists themselves, on their works and their schools, and rarely on the general principles and particular applications of art.

Sculpture, the most suspect among the major arts because it is closest to irreligious "competition" with the divine creative action, completely lacked any technical treatment. Painting (essentially that of miniatures) and architecture were dealt with only marginally and occasionally, in biographies and catalogues dedicated to the artists who worked in these fields; such works include the *Menāqib-i Hünerveran* (1587) by the Turk Muṣṭafā 'Alī (a primary source for calligraphers and miniaturists during the Ottoman period) and the *Tedkeret ul-Bunyān* by Muṣṭafā Sā'ī, on Sinān's great work. However, for a technical examination of materials and art rather than of the artists, it is necessary to turn to the minor arts, in many of which Moslem artistic genius excels: miniatures and calligraphy, the working of metals and precious stones, ceramics, artistic effects produced by the use of mechanics and hydraulics, and the like.

Metalworking for the production of arms — especially swords, the specialty and pride of the craftsmen of the Near East — was the subject of various technical writings, among which stand out the two *risale* on swords written by the philosopher and scientist al-Kindī (d. ca. 870); one has a descriptive and cultural character, whereas the other deals chiefly with the materials used in fabrication and tempering. A teacher called Murḍā ibn 'Alī al-Ṭarsūsī wrote a treatise (12th cent.) for Saladin; extracts have been published with a commentary by C. Cahen (1947–48). This work was not limited to swords, but embraced all branches of medieval classic armament (lances, shields, crossbows, armor, etc.). Whole sections were dedicated to single weapons in the vast Moslem technical and military literature. Even more numerous are the technical treatises on the working of metal and precious stones, often dealt with by the lapidaries, a type of naturalistic and cultural compilation especially widespread in the Islamic East. These range from the *Kitāb al-Jamāhir fī ma'rifat al-jawahir* by the illustrious scientist al-Bīrunī (10th–11th cent.), to the *Kitāb Azhar al-afkār* by al-Tīfāshī and the Persian *Tansūh Nāme* by Naṣīr al-Dīn al Ṭūsī (13th cent.), and to the Persian *Jawahir al-'arā'is*, compiled at Tabriz in 1301 by Abū'l-Qāsim 'Abd-Allāh of Kashan, one chapter of which is particularly important for its treatment of the techniques of ceramics, which at that time was at its apogee in Kashan.

Mention should be made of the literature regarding automata (q.v.) and hydraulic mechanics, which achieved considerable importance in Moslem culture as objects of figural representation. One treatise in particular, the *Kitāb fī ma' arifat alhandasīyya*, composed in 1205 by Badi' al-Zamān Ismā'el ibn-al-Razzan al-Jazarī, and drawing in part on classical tradition but even more on Moslem science and technique (see II, cols. 185–186), has been the subject of numerous technical and historico-artistic studies. Fragments of later copies of the original Istanbul manuscript have added to the iconographic material in this field and have complicated the problems.

India. The many texts from ancient and medieval India that deal explicitly with the technical aspects of painting, sculpture, and architecture are of considerable importance in understanding Indian art, its techniques, and its canons. Most of these specialized treatises were written in Sanskrit and are known as *śilpaśāstra*, or treatises (*śāstra*) on art or craft (*śilpa*; the word *śilpa* has a much more technical and circumscribed meaning than the modern Western term "art"). These texts, especially the most noteworthy and interesting of them, cannot be grouped according to subject matter, since they almost always deal with several arts; whenever a treatise deals with only one art, it is most often architecture, which was considered by the educated to be an *ars major*, whereas sculpture and painting merely adorned and increased the value of the work of architecture.

Painting and sculpture were almost always grouped together in the treatises, because in actuality they were often complementary — that is to say, they existed alongside each other in religious structures and palaces (the caves of Ajanta are an example of this) — and they had a common iconography, at least on the theoretical level. It is thought today, on the basis of references in the ancient texts, that iconography was reduced to a canon in very ancient times in order to ensure the exact execution of the sacred images. Such canons at first concerned only sculpture and were probably extended later from sculpture to painting, the latter dealing with more or less strictly religious subjects. Not only were painting and sculpture often connected, but, according to what may be read in many passages, there was a close interdependence among all the arts.

The most important treatises, besides the *Viṣṇudharmottara* (4th–7th cent. of our era), a sacred Hindu text (see I, col. 161), were the *Abhilasitārthachintāmaṇi*, or *Mānasollāsa*, attributed to King Someśvara III, who lived in the 12th century; the *Samarāṅgaṇasūtradhāra*, mainly on architecture; the *Śukranītisāra*; and the *Mānasāra*. In some of them, besides painting, iconography, iconometry, architecture, and the devotional acts that had to precede and accompany artistic creation, other arts are discussed, such as the dance (connected through its iconographic aspect to sculpture and painting), dramaturgy, and literature.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The references to sculpture in these texts did not concern its technical execution, which was in many aspects analogous to that of painting, but rather its iconography and iconometry. This arises from the fact that sculpture, long before painting, was considered the preferred means of representing the images intended for worship. These images had to correspond to given canons, and thus began that iconographic and iconometric tradition which was afterward applied to painting.

In the treatises architecture was, at least as much as and perhaps more than the figural arts, reduced to a series of rules, ordinances, and canons, concerned not so much with the techniques of construction as with the preliminaries (the materials with which the construction itself is effected, the dimensions and the characteristic elements that make up the building, such as columns, doors, windows). The treatises were true theoretical manuals, and any historical or individual reference was beyond their scope. The system of measurement was, for architecture as well as for sculpture, of fundamental importance; the treatises prescribed the measurements not only of every building but also of each of its architectural elements. The measurements differed according to the over-all size, the form, and the function of the building itself (see also XI, cols. 738–739).

Rita TATICCHI

China. The first treatises on art in China date from the Ming dynasty (1368–1644); it was under this dynasty, which succeeded to the Mongol rule of Genghis Khan (Yüan dynasty, 1280–1368), that Chinese art of previous ages was systematically evaluated. This does not mean, however, that the problems of art had not been discussed and that books on that subject had not been written even before the advent of the Mings; and some of these works constituted — partly, if not completely — treatises in which classifications were attempted and rules relative to the techniques of execution were laid down.

The first Chinese essays on art are those attributed to the painter Ku K'ai Chih: one concerning the method of executing transfer copies, another on certain elements of landscape painting. Unfortunately, only a few presumed fragments of these essays are known, and they are of doubtful authenticity. The *Ku-hua p'in-lu* (Old Records of the Classification of Painters), by Hsieh Ho (ca. A.D. 500), and the *Hsü-hua-p'in* (On the Classification of Paintings), by Yao Ts'ui (ca. 550), are not true treatises, since they include much information of a historical nature; their importance lies principally in their discussions of esthetics and their numerous allusions to technical questions. The same may be said for the *Li-tai ming-hua chi* (A Record of the Famous Painters of All the Dynasties), by Chang Yen-yüan, the work that remains the principal source on ancient Chinese art. Among other works that fall within the scope of this article only incidentally may be included the *Lo-yang ch'ieh-lan chi* (A Record of the Lo-yang Monasteries), by Yang Hsüan-chih (6th cent.), written to perpetuate the memory of the sacred Buddhist buildings which adorned the ancient capital of the Han dynasty (206 B.C.–A.D. 221) and which had been destroyed during the wars that devastated the north of China in those tumultuous years. The *Hua-hsüeh pi-chüeh* (Basics of the Technique of Painting), by Wang Wei (q.v.), and the *Hsieh-shan hsiu-chüeh*, by Huang Kung-wang (1269–1354), cannot be omitted, although both principally reflect the personal opinions of their authors.

The passion for antiques, one of the typical manifestations of Confucianism, led to the formation of great art collections, whose catalogues did not limit themselves merely to an enumeration of the pieces but included illustrations and explanations of decorative motifs and identifications of the works that had been in the possession of the great men of previous times, even reproducing the essential lines and particulars of the most valuable objects in collections being catalogued. Hence one cannot underestimate the importance of works such as the *K'ao ku t'u* (with a preface dated 1092), by Lü Ta-lin, and the *Hsüan-ho po ku t'u lu*, by Wang Fu, a work dating from about 1123; these two works are catalogues of antiques, especially of bronzes, which, particularly in the Sung period (960–1279), attracted the attention of the collectors. The corresponding work in the field of painting is the *Hsüan-ho hua p'u*, a catalogue of the Sung imperial collection, prepared by the emperor Hui-tsung.

Ceramics was dealt with in lengthy passages of the *Ch'a-ching* (The Classic on Tea), written in the 8th century by Lu Yü. In its present form the work has been extensively altered, but there are no doubts as to its direct derivation from the original of the T'ang era (618–906). As its title suggests, it is more a treatise on the preparation, use, and serving of the traditional Chinese beverage than a treatise on art. Of interest here is the part that deals with the form and use of the cups. Even with this limitation, the work contains a mass of useful information for the scholar of ancient Chinese ceramics.

It was during the Ming dynasty, as already mentioned, that Chinese treatises flourished, principally those on painting. The considerable diffusion of this form of artistic expression among the upper and cultured classes of Chinese society, particularly among the bureaucracy (to such an extent that Chinese officials, from the highest to the lowest rank, dedicated most of their free time to painting), caused an increase in books on the techniques of painting and on art in general. The inventive genius of Chinese art having, so to speak, exhausted itself, the attention of artists turned principally to technique, trying to substitute this for inspiration. This led to minute classifications of the various ways of painting according to the genre chosen by the artist, the artist chosen as a model, the various types of brush-strokes, and the arrangement of the various elements in the composition. This phenomenon was at its height during the 17th century and continued after the fall of the Ming dynasty (1644) under the Manchu dynasty (Ch'ing dynasty, 1644–1912).

Among works of a technical character, the best-known and most influential (both in China and Japan) were undoubtedly the *Shih-chu-chai shu-hua-p'u* (A Treatise on the Paintings and Writings of the Ten Bamboo Studio), published in 1633, and the *Chieh-tzŭ-yüan hua-chüan* (Mustard-seed Garden Manual of Painting), published between 1679 and 1701. These two works have remained deservedly famous, especially for the magnificent woodblock illustrations they contain, many of them in color.

During the Manchu reign the work begun under the Mings continued, and the field of the treatise spread to other domains of the artistic experience. In 1633 the *Yi lin hui k'ao* encyclopedia of Shên Tzŭ-an was published, containing a section on architecture that consists of a critical study based on more ancient works, many of which have been lost. For bronzes, the *Hsi-ch'ing ku-chien* was a catalogue of the imperial Manchu collection, analogous to the above-mentioned *Hsüan-ho po ku t'u lu* of the Sung era.

The 19th century marked, for all of China, the revival of the passion for antiques, a passion that was accompanied by the publication of learned treatises, principally on ceramics and jades. As early as 1774, Chu Yen had published his *T'ao-shuo* (A Description of Pottery), which was diffused also in the West among lovers of Chinese art owing to the translation by S. Bushell under the title *Description of Chinese Pottery and Porcelain* (Oxford, 1910). This work was followed by the *Ching-tê-chên t'ao-lu* (A Memoir on the Ceramics at Ching-tê-chên; at the time this work was written, the production of Chinese ceramics was entrusted almost exclusively to the imperial manufactories at Ching-tê-chên), by Lan P'u (1815). This work also became known in the West, through the incomplete translation edited by S. Julien (1856) and the complete one by G. R. Sayer (1951).

A work of fundamental importance on antique jade was the *Ku-yü t'u-k'ao* (An Illustrated Study of Antique Jade), by Wu T'a-ch'êng, published in 1889. The author based his critical and technical disquisitions on the pieces contained in his own rich collection.

These, in short, are the basic Chinese treatises; this brief exposition cannot list all the treatises in which Chinese artistic literature abounds but merely indicates the most important works and those which have had the greatest influence on the development of Chinese art and which have given greater impetus to modern criticism.

Piero CORRADINI

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

BIBLIOG. *General*: Schlosser; Venturi; A. Pellizzari, I trattati attorno le arti figurative in Italia e nella penisola iberica dall'antichità classica al secolo XIII, Naples, 1915; M. Borissavlievitch, Les théories de l'architecture, Paris, 1926; A. Prandi, Storia della teorie architettoniche, Rome, 1952.

Antiquity: (*a*) *Sources and criticism of sources*: FHG; FGrHIST; Overbeck, SQ; Löwy, IGB; L. Preller, Polemonis periegetae fragmenta, Leipzig, 1838; O. Benndorf, De Anthologiae graecae epigrammatis quae ad artes spectant, Leipzig, 1862; U. Wilamowitz-Moellendorff, Antigonus von Karystos, Berlin, 1881; A. Kalkmann, Pausanias als Perieget, Berlin, 1886; R. Heberdey, Die Reisen des Pausanias in Griechenland, Vienna, 1894; P. Vitry, Études sur les épigrammes de l'Anthologie Palatine qui contiennent la description d'un œuvre d'art, RA, I, 1894, pp. 315–67; H. S. Jones, Select Passages from Ancient Writers Illustrative of Greek Sculpture, London, 1895; F. Muenzer, Zur Kunstgeschichte des Plinius, Hermes, XXX, 1895, p. 499 f.; K. Jex-Blake and E. Sellers, The Elder Pliny's Chapters on the History of Art, London, 1896; Pausaniae Graeciae descriptio, eds. H. Hitzig and H. Bluemner, 3 vols., Leipzig, 1896–1910; C. Plini secundi Naturalis historia, V, 31–37, ed. C. Mayhoff, Leipzig, 1897; F. Muenzer, Beiträge zur Quellenkritik der Naturgeschichte des Plinius, Berlin, 1897; J. A. Bernard, Schriftquellen zur antiken Kunstgeschichte, Dresden, Berlin, 1898; A. Kalkmann, Die Quellen der Kunstgeschichte des Plinius, Berlin, 1898; Pausanias' Description of Greece, trans. and commentary by J. G. Fraser, 6 vols., Cambridge, 1898, New York, 1913; D. Detlefsen, Untersuchungen über die Zusammensetzung der Naturgeschichte des Plinius, Berlin, 1899; A. Klotz, Die Arbeitsweise des älteren Plinius, Hermes, XLII, 1907, p. 323 f.; C. Robert, Pausanias als Schriftsteller, Berlin, 1909; Vitruvii de architectura libri decem, ed. F. Krohn, Leipzig, 1912; G. Pasquali, Die Schriftstellerische Form des Pausanias, Hermes, XLVIII, 1913, p. 161 f.; F. Pellati, Vitruvio e la fortuna del suo trattato nel mondo antico, R. di Filologia e Istruzione Classica, XLIX, 1921, p. 305 f.; A. Reinach, Textes grecs et latins relatifs à l'histoire de la peinture ancienne, Recueil Milliet, Paris, 1921; J. G. Frazer, Sur les traces de Pausanias, à travers la Grèce ancienne, 2d ed., Paris, 1927; Vitruvius, On Architecture, ed. F. Granger, London, New York, 1931–45; B. Schweitzer, Xenocrates von Athen, Königsberg, 1932; G. Bendinelli, Dottrina dell'archeologia e della storia dell'arte, Milan, 1938, pp. 51–71; F. Pellati, Vitruvio, Rome, 1938; E. Pernice, Die literarischen Zeugnisse, HA, I, Munich, 1939, pp. 239–328; F. W. Schlikker, Hellenistische Vorstellungen von der Schönheit des Bauwerks nach Vitruv, Berlin, 1940; S. Ferri, Nuovi contributi esegetici al canone della scultura greca, RIASA, VII, 1940, p. 117 f.; S. Ferri, Problemi di estetica vitruviana, CrArte, VI, 1941, p. 97 f.; S. Ferri, Note esegetiche ai giudizi d'arte di Plinio, Annali Scuola Sup. Pisa, 1942, p. 69 f.; A. Birnbaum, Vitruvius und die griechische Architecture, Denkschr. der Ö. Ak. der Wissenschaften, Vienna, LVII, 1944; Plinio il Vecchio, Storia delle arti antiche, text, trans., and notes by S. Ferri, Rome, 1946; B. Pace, Introduzione allo studio dell'archeologia, Milan, 1947, pp. 21–31; P. Lavedan, Histoire de l'art, I, L'antiquité, Paris, 1949; G. Becatti, Arte e gusto negli scrittori latini, Florence, 1951, p. 121 f.; H. Kock, Vom Nachleben des Vitruvius, Baden-Baden, 1951; S. Ferri, Note archeologico-critiche al testo di Vitruvio, La parola del passato, XXX, 1953, p. 214 f.; A. Diller, The Authors Named Pausanias, Tr. of the Am. Philological Assoc., LXXXVI, 1955, p. 268; W. Peek, Griechische Vers-Inschriften, I, Grab-Epigramme, Berlin, 1955; A. Diller, Pausanias in the Middle Ages, Tr. of the Am. Philological Assoc., LXXXVII, 1956, p. 84 f.; A. Diller, The Manuscripts of Pausanias, Tr. of the Am. Philological Assoc., LXXXVIII, 1957, p. 169 f.; R. E. Wycherley, Pausanias in the Agora of Athens, Greek, Roman and Byzantine S., II, 1959, p. 21 f.; Vitruvio, Dai libri I–VII, recens., trans. and notes by S. Ferri, Rome, 1960; L. A. Ciapponi, Il De architectura di Vitruvio nel primo Umanesimo, Italia medievale e umanistica, III, X, 1960, p. 59 f.; F. Chamoux, Pausanias le Périégète, Inf. littéraire, XII, 1960, p. 163 f. (*b*) *Art criticism*: E. Benning, Die Lehre vom Schönen bei Plotin im Zusammenhange seines Systems dargestellt, Göttingen, 1864; H. F. Mueller, Plotin und Schiller über die Schönheit, Philosophische Monatshefte, XII, 1876, p. 385 f.; J. Walter, Die Geschichte der Aesthetik im Altertum, ihrer begrifflichen Entwicklung nach dargestellt, Leipzig, 1893; S. Ferri, Plotino, e l'arte del secolo, CrArte, I, 1935–36, p. 166 f.; S. Ferri, Utilizzazione della critica d'arte antica nel quadro delle moderne esigenze, Mem. Acc. d'Italia, Classe scienze morali e storiche, ser. VII, IV, 1, 1943; A. Grabar, Plotin et les origines de l'ésthétique médiévale, CahA, I, 1945, p. 15 f.; M. Cagiano de Azevedo, L'eredità dell'antico nell'alto Medioevo, Settimana di S. del Centro It. di S. per l'Alto Medioevo, IX, Il passaggio dall'antichità al medioevo in Occidente, Spoleto, 1962, p. 466.

Byzantine period: (*a*) *Sources and criticism of sources*: Iohannis Pachymeris descriptio Augusteonis, ed. Bandurius, Imperium orientale, I, Paris, 1711, p. 98 f.; Joannis Eugenici descriptio Trapezuntii, ed. L. F. Tafel, Frankfurt, 1832; Marci Eugenici descriptio Corinthi, ed. L. Kayser, Heidelberg, 1840; John Eugenicus, Imbros, ed. J. F. Boissonade, Anecdota Nova, Paris, 1844; Cosmae Topographia, PG, vol. 88, cols. 51–470; Photii descriptio ecclesiae S. Mariae Matris Domini, PG, vol. 102, cols. 563–74; F. W. Hunger, Quellen der byzantinischen Kunstgeschichte, I, Vienna, 1878; C. Bayet, Recherches pour servir à l'histoire de la peinture et de la sculpture chrétiennes en Orient avant la querelle des iconoclastes, Paris, 1879; Petrinae, ed. K. Nestorides, *Δελτιον*, 4, 1892–95, p. 627 f.; Constantini Rhodii descriptio ecclesiae SS. Apostolorum, ed. E. Legrand, REG, 1896, p. 32 f.; K. Krumbacher, Geschichte der byzantinischen Literatur, Munich, 1897; J. P. Richter, Quellen der byzantinischen Kunstgeschichte, ausgewälte Texte über die Kirchen, Klöster, Paläste, Staatsgebäude und andere Bauten von Konstantinopel, Vienna, 1897; Patria, in Scriptores Originum Constantinopolitanarum, ed. T. Preger, I–II, Leipzig, 1901–07; A. Muñoz, Alcune fonti letterarie per la storia dell'arte bizantina, NBACr, X, 1904, p. 221 f.; Nicolae Mesaritae descriptio ecclesiae SS. Apostolorum, ed. A. Heisenberg, Grabeskirche und Apostelkirche, Zwei Basiliken Konstantins, II, Leipzig, 1908, p. 9 f.; Cosmae Topographia, ed. E. O. Winstedt, Cambridge, 1909; Pauli Silentarii descriptio S. Sophiae . . ., ed. P. Friedländer, Johannes von Gaza und Paulus Silentarius, Leipzig, 1912; Procopii Caesariensis . . . de aedificiis, ed. I. Haury, Leipzig, 1913; A. Veniero, Paulo Silenziario, Catania, 1916; H. Diels, Über die von Prokop beschriebene Kunsttühr von Gaza, AbhPreussAk, Philologische-historische Klasse, 1917; Le ecfraseis nella letteratura bizantina e i loro rapporti con l'arte figurata, Recueil . . . N. P. Kondakov, Prague, 1925, p. 139 f.; N. Malickij, Remarques sur la date des mosaiques de l'église des Saints-Apôtres à Constantinople décrites par Mésarites, Byzantion, III, 1926, p. 123 f.; Cristodori Coptiti, Descriptio statuarum, Anthologia Palatina, III, ed. P. Waltz, Anthologie Grecque, I, Paris, 1928, p. 51 f.; Choricii opera, ed. R. Foerster, Leipzig, 1929; R. W. Hamilton, Two Churches at Gaza, as described by Choricius of Gaza, PEQ, 1930, p. 178 f.; F. M. Abel, Gaza au VIe siècle d'après le rhéteur Chorikios, RBib, XXXVIII, 1931, p. 5 f.; Iohannis Cameniatae de capta Thessalonica, ed. I. Bekker, Bonn, 1938; G. Downey, John of Gaza and the Mosaics of Ge and Karpoi, Antioch-on-the-Orontes, II, The Excavations 1933–36, Princeton, 1938, p. 205 f.; P. Friedländer, Prokop von Gaza-Spätantiker Gemäldezyklus in Gaza, Vatican City, 1939; R. Janin, Constantinople byzantine, Paris, 1950; R. Janin, La géographie ecclésiastique de l'empire byzantin, I, Le siège de Constantinople et le patriarcat œcuménique, III, Les églises et les monastères, Paris, 1953; A. Grabar, L'iconoclasme byzantin, Dossier archéologique, Paris, 1957; G. Moravcsik, Byzantinoturcica, I, Berlin, 1958; H. G. Beck, Kirche und theologische Literatur im byzantinischen Reich, Munich, 1959; W. Wolska, La topographie chrétienne de Cosmas Indicopleustès, Paris, 1963. (*b*) *Manuals of painting*: M. Didron, Manuel d'iconographie chrétienne grecque et latine . . ., Paris, 1845; A. Konstantinides, *Ἑρμηνεία τῶν ζωγράφων* (Guide to the Painters), 2d ed., Athens, 1885; A. Papadopoulos-Kerameus, Denys de Phourna, Manuel d'iconographie chrétienne accompagné de ses sources principales inédites et publié avec préface pour la première fois en entier d'après son texte original, St. Petersburg, 1909; C. Diehl, Manuel d'art byzantin, II, Paris, 1926, pp. 854–55; A. Premerstein, Griechisch-heidnische Weise als Verkünder christlicher Lehre in Handschriften und Kirchenmalerei, Festschr. der Nationalbibliothek, Vienna, 1926; V. Grecu, Byzantinische Handbücher der Kirchenmalerei, Byzantion, IX, 1934, p. 675 f.; J. R. Partington, Chemical Arts in the Mount Athos Manual of Christian Iconography, Isis, XXII, 1934, p. 136 f.; K. T. Demaras, *Θεοφανοῦς τοῦ ἐξ Ἀγράφων βίος Διονυσίου τοῦ εκ Φουρνᾶ* (Theophanes the Greek and Dennis of Phourna), *Ἑλληνικά* 1939, p. 273 f.; S. Bettini, Per un'edizione critica del manuale del monte Athos di Dionisio, da Furna, Atti R. Ist. Veneto di Sc. Lett. e Arti, C, 2, 1941, p. 179 f.; L. Brehier, La légende des sages païens à Byzance, Mél.; L. Halphen, Paris, 1951, p. 61 f.

Medieval West: Vincentii Praesulis Bellovacensis Bibliotheca Mundi, seu Speculum Maius, Douai, 1624; Theophilus, De artium schedula, London, 1847; Chronica Episcoporum Merseburgensium, Monumenta Germaniae Historica, vol. X, Scriptorum, Hannover, 1852; St. Augustine, Sermones, PL, vol. 38, col. 1190 f., vol. 39, col. 2439 f.; Isidore of Seville, Etymologiae, PL, vol. 82; Libri Carlini, Capitulare de imaginibus, PL, vol. 98; Vita Sancti Guillelmi abbatis Divionensis, PL, vol. 141, col. 836 f.; Jotsaldi monachi Sancti Odilonis cluniacinsis abbatis V vita, PL, vol. 142, col. 898; Rupertus, De divinis officiis, PL, vol. 170; Honorius of Autun, Gemma Animae, PL, vol. 172; Bernard of Clairvaux, Apologia ad Guillelmum Sancti Theodorici abbatem, PL, vol. 182; Siccardus Mitrale seu de officiis ecclesiasticiissumma, PL, vol. 213, col. 9 f.; P. Merimée, Album de Villard de Honnecourt, Paris, 1858; Pope Clement I, Constitutiones apostolicae, PG; Guglielmo Durando, Rationale divinorum officiorum, Naples, 1866; P. Merimée, Études sur les arts au Moyen Age, Paris, 1875; Albert the Great, Metaphysicorum, Opera Omnia, ed. Borgnet, VI, Paris, 1890; St. Bonaventure, Constitutiones Generales Narbonenses, Opera Omnia, VIII, Quaracchi, 1898; St. Bonaventure, Cur fratres frequentius maneant in civitatibus et in oppidis, Opera omnia, VIII, Quaracchi, 1898; A. Pellizzari, I trattati attorno le arti figurative in Italia e nella Penisola Iberica dell'antichità classica al secolo XIII, Naples, 1915; Martianus Capella, De nuptiis Philologiae et Mercurii, ed. Teubner, Leipzig, 1925; Villard de Honnecourt, Livre de Portraiture, ed. Hahnloser, Vienna, 1935; Cennino Cennini, Il libro dell'arte, trans. D. V. Thompson. New Haven, 1937; Libellus de consecratione ecclesiae Sancti Dionysii, ed. E. Panofsky, Princeton, 1946; H. Sedlmayr, Die Entstehung der Kathedrale, Zurich 1950; E. Panofsky, Meaning in the Visual Arts, New York, 1955; O. von Simpson, The Gothic Cathedral, London, 1956; H. Hahn, Die frühe Kirchenbaukunst der Zisterzensier, Berlin, 1957; T. Bowie, Villard de Honnecourt, the Sketchbook, Indiana, 1959; R. Assunto, La critica d'arte del pensiero medioevale, Milan, 1960. See also the bibliogs. for CHRISTIANITY; CRITICISM; GOTHIC ART; ROMANTICISM.

Modern period: I. Merrifield, Original Treatises Dating from the XIIIth to the XVIIIth Centuries on the Arts of Painting, London, 1848; P. Petroz, L'art et la critique en France depuis 1822, Paris, 1875; C. Chmelarz, Katalog der Bibliothek des Österreichischen Museums für Kunst und Industrie, Vienna, 1883, p. 120 f.; A. Fontaine, Les doctrines d'art en France de Poussin à Diderot, Paris, 1909; K. Birch-Hirschfeld, Die Lehre von der Malerei in Cinquecento, Rome, 1912; H. C. Levis, A Descriptive Bibliography of the Most Important Books in the English Language Relating to the Art and History of Engraving, London, 1912; A. Pellizzari, I trattati intorno alle arti figurative in Italia, Naples, 1912; K. Borinski, Die Antike in Poetik und Kunsttheorie, Leipzig, 1914; A. Dresdner, Die Kunstkritik, Ihre Geschichte und Theorie, Munich, 1915; K. A. Esdaile, The Small House and Its Amenities in the Architectural Hand-books of 1749–1827, Tr. of the Bibliographical Soc., XV, 1917–19, pp. 115–32; M. Pittaluga, E. Fromentin e le origini della moderna critica d'arte, L'Arte, XX, 1917, pp. 1–9, 115–40, 240–58; L. Venturi, La critica d'arte in Italia durante i secoli XIV–XV, L'Arte, XX, 1917, pp. 305–26; O. Kutschera-Woborsky, Ein Kunsttheoretisches Thesenblatt Carlo Marattas uns seine ästhetischen Anschauungen, Mitt. der Gesellschaft f. vervielfältigende K., XLII, 1919 (2–3); G. Vesco, L. B. Alberti e la critica d'arte, L'Arte, XXII, 1919, pp. 95–104, 136–48; W. Waetzold, Deutsche Kunsthistoriker, Leipzig, 1921; S. Ortolani, Le origini della critica d'arte a

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Venezia, L'Arte, XXVI, 1923, pp. 1–17; F. Y. Sánchez-Cantón, Fuentes literarias para la historia del arte español, Madrid, 1923; E. Kaufmann, Die Architekturtheorie der französischen Klassik und des Klassizismus, RepfKw, XLIV, 1924, p. 197 f.; E. Panofsky, Idea — ein Beitrag zur begriffsgeschichte der alteren Kunsttheorie, Leipzig, Berlin, 1924; L. Venturi, La critica d'arte alla fine del Trecento, L'Arte, XXVIII, 1925, pp. 233–44; W. Folkierski, Entre le classicisme et le romantisme, Paris, 1925; N. Borissavlievitch, Les théories de l'architecture, Paris, 1926; L. Venturi, Il gusto dei primitivi, Bologna, 1926; L. Venturi, Pretesti di critica, Milan, 1929, p. 212 f.; M. B. Jessen, Katalog der Ornamentisch-Sammlung des Kunstgewerbmuseums, 2d ed., Berlin, 1931; J. W. Draper, Eighteenth Century Aesthetics: A Bibliography, Heidelberg, 1931; G. Fontanesi, Francesco Milizia scrittore e studioso d'arte, Bologna, 1932; R. Bradbury, The Romantic Theories of Architecture of the Nineteenth Century in Germany, England and France, London, 1934; A. Tositti, Marco Boschini, critico dell'arte veneta, Convivium, 1934; B. Croce, La critica e la storia delle arti figurative, Bari, 1934; S. Bottari, La critica figurativa e l'estetica moderna, Bari, 1935; R. Janssens, Les maîtres de la critique d'art, Paris, 1935; K. L. F. Thielke, Literatur und Kunstkritik in ihren Wechselbeziehungen, Ein Beitrag, zur englischen Ästetik des 18 Jahrhunderts, Halle, 1935; L. Vitali, Lettere de Macchiaioli, Turin, 1935; S. Bottari, I miti della critica figurativa, Messina, 1936; A. M. Gabrielli, L'Algarotti e la critica d'arte in Italia nel Settecento, CrArte, II, 1938, p. 155 f., III, 1939, p. 24 f.; L. Venturi, Les archives de l'Impressionisme, Paris, 1938; J. P. Richter, The Literary Works of Leonardo da Vinci, 2d ed., Oxford, 1939; A. Blunt, Artistic Theory in Italy, Oxford, 1940; R. W. Lee, Ut Pictura Poesis: the Humanistic Theory of Painting, AB, XXII, 1940, pp. 197–269; M. Menéndez y Pelayo, Historia de las ideas estéticas en España, 5 vols., 3d ed., Madrid, 1940; M. L. Gengaro, Orientamenti della critica d'arte nel Rinascimento cinquecentesco, Milan, Messina, 1941; S. Samek Lodovici, Storici, teorici e critici delle arti figurative (1800–1940), Rome, 1942; R. Palluchini, La critica d'arte a Venezia nel Cinquecento, Venice, 1943; L. Venturi, La critica neoclassica in Francia, Arti figurative, I, 1945; C. L. Ragghianti, Commenti di critica d'arte, Bari, 1946; D. Mahon, Studies in Seicento Art and Theory, London, 1947; E. G. Holt, Literary Sources of Art History: An Anthology of Texts from Theophilus to Goethe, Princeton, 1947 (rev. ed. in 2 vols., New York, 1957); H. V. S. Ogden and M. S. Ogden, A Bibliography of Seventeenth Century Writings on the Pictorial Arts in English, AB, XXIX, 1947, pp. 196–201; M. Pittaluga, La critica dei Salons, Florence, 1948; C. L. Ragghianti, Miscellanea minore di critica d'arte, Bari, 1948; R. Salvini, La critica d'arte moderna (la pura visibilità), Florence, 1949; R. Wittkower, Architectural Principles in the Age of Humanism, London, 1949; R. S. Crane, Critics and Criticism Ancient and Modern, Chicago, 1950; L. Grassi, Genesi a paternità della critica d'arte, Rome, 1951; P. O. Kristeller, The Modern System of the Arts: A Study in the History of Aesthetics, J. of the Hist. of Ideas, XII, 1951, pp. 496–527, XIII, 1952, pp. 17–46; C. L. Ragghianti, L'arte e la critica, Florence, 1951; L. Salerno, Seventeenth-century English Literature on Painting, Warburg, XIV, 3–4, 1951, pp. 234–59; S. Ortolani, Su il 'Riposo' di Raffaele Borghini, RArte, XXVII, 1952; A. Prandi, Storia delle teorie architettoniche, Rome, 1952; D. Mahon, Art Theory and Artistic Practice in the Early Seicento: Some Clarifications, AB, XXXV, 1953, pp. 226–32; O. Morisani, Art Historians and Art Critics, III, Cristoforo Landino, BM, XCV, 1953, pp. 267–72; F. Ulivi, Galleria di scrittori d'arte, Florence, 1953; P. Castex, La critique d'art en France au XIX siècle, Paris, 1958; O. Morisani, Letteratura artistica a Napoli tra il 400 e il 600, Naples, 1958; P. Barocchi, Trattati d'arte del Cinquecento fra manierismo e Controriforma, I, Varchi, Pino, Dolce, Danti, Sorte, II, Gilio, Borromeo, III, Alberti, Bari, 1960.

Islam: (*a*) *Treatises*: al-Jazarī, Kitāb fī ma' arifat alhandasiyya, ms., Istanbul, Topkapı Saray-Ahmet III 3472 (another ms., New York, Met. Mus.); al-Tīfāshī, Azhār al-afkār fī ǧawāhir al-aḥǧar, ed. with It. trans. A. R. Biscia, Florence, 1818; A. R. Coomaraswamy, The Treatise of al-Jazarī on Automata, Boston, 1924; H. Ritter, J. Ruska, F. Sarre, and R. Winderlich, Orientalische Steinbücher und persische Fayencetechnik, Istanbul, 1935; al-Bīrunī, Kitāb al-Jamāhir fī ma'rifat al-jawahir, ed. Krenkow, Hyderabad, 1936; Murḍā ibn 'Alī al-Ṭarsūsī, Tabsirat arbāb al-albād . . ., ed. with partial trans. C. Cahen, Un traité d'armurerie composé pour Saladin, Bulletin d'études orientales, XII, 1947–48, pp. 103–63; Risālā fī'l-suyūf, in Majalla Kulliyat alādāb of the University of Cairo, XIV, 1952; Risālā fī' amal al-suyūf, ed. Faisal Dabdūb, Baghdad, 1962. *b. General*: C. Huart, Les calligraphes et les miniaturistes de l'Orient musulman, Paris, 1908; H. Ritter, La parure des cavaliers und die Literatur über die ritterlichen Kunst, Der Islam, XVII, 1929, pp. 116–54; I. Stchoukine, Un manuscrit du traité d'al-Gazari sur les automates du VIIe siècle, GBA, CXI, 1934, pp. 134–40; H. Ritter, Orientalische Steinbücher und persische Fayencetechnik, pp. 1–15, Istanbul, 1935 (Istanbuler Mitt., 3); A. Zeki Velidi, Die Schwerter der Germanen, ZMG, XC, 1936, pp. 19–37; C. Brockelmann, Geschichte der arabischen Literatur, Supplementband I, Leiden, 1937, p. 903; R. Ettinghausen, Arab Painting, Geneva, 1962, pp. 92–95.

India: (*a*) *Treatises*: The Mārcandeyapurāṇa, ed. K. M. Banerjea, Calcutta, 1861; Varāhamihira, Bṛhatsamhitā, Calcutta, 1863 (Eng. trans. H. Kern, JRAS, N.S., IV, 1870, pp. 430–79, V, 1871, pp. 45–90, 231–88, VI, 1873, pp. 36–91, 279–338, VII, 1875, pp. 81–134); Remandrī, Caturvargacintāmaṇi, Calcutta, 1879; Brhannaradīyapurāṇa, Calcutta, 1891; Visnudharmottarapurana, Khanda III, Bombay, 1912; Citralakṣaṇa, trans. B. Laufer, Leipzig, 1913; W. S. Hadaway, Some Hindu Śilpa Śāstras and Their Relation to South Indian Sculpture, OAZ, 1914; Sukrācārya, Śukranītisāra, trans. B. K. Sarkar, Allahabad, 1914; Taluqdar di Audh, The Matsyapurāṇa, Allahabad, 1916; Śrī Kumāra, Śilparatna, Trivandrum, 1922; A. Tagore, Sadanga, Paris, 1922; K. P. Jayaswal, Hindu Texts on Painting, J. of Bihar and Orissa Research Soc., IX, 1923; S. Kramrisch, The Viṣṇudharmottaram, Calcutta, 1924; Iśānaśivagurudevamiśra, Iśānaśivagurudevapaddhati, Trivandrum, 1925; Raja Bhoja, Samarāṃgamasūtradhāra, II, Baroda, 1925; Someśvara Deva, Abhilaṣitārthacintāmaṇi, Maisūr, 1926; Kāśyapaśilpa, ed. Vināyaka Gaṇeśa Apte, 1926; A. K. Coomaraswamy, Citralakṣaṇa, Sir Asutosh Mookherij Memorial Vol., Patna, 1926–28; Rāja Bāsava, Śivatattvaratnākara, Madras, 1927; Sudhālepavidhāna, Indian Historical Q., III, 1927; V. Raghavan, Some Sanskrit Texts on Paintings, Indian Historical Q., IX, 1933; V. Raghavan, Two Chapters on Painting in the Nārada Śilpa Śāstra, J. of the Indian Soc. of Oriental Art, III, 1, 1935; S. Kramrisch, Iśānaśivagurudevapaddhati, Kriyāpāda, Chapters XXVI–XXVII, J. of the Indian Soc. of Oriental Art, IX, 1941, pp. 151–93; Viṣṇudharmottarapurāṇa, Khaṇḍa, III, trans. P. Shah, Baroda, 1958; P. K. Acharya, Architecture of Mānasāra, 2 vols., Allahabad, n.d.; P. K. Acharya, Mānasāra, Sanskrit Text with Critical Notes, Oxford, n.d. (*b*) *Studies*: A. Foucher, Étude sur l'iconographie bouddhique de l'Inde, 2 vols., Paris, 1900–05; E. B. Havell, Symbolism in Indian Sculpture and Painting, London, 1911; A. K. Coomaraswamy, Viśvakarma, London, 1914; T. A. Rao, Elements of Hindu Iconography, 4 vols., Madras, 1914, 1916; T. A. Rao, Tālamāna or Iconometry, Mem. of the Archaeol. Survey of India, III, Calcutta, 1920; B. Bhattacharya, Indian Images, I, The Brahmanical Iconography, Calcutta, Simla, 1921; A. K. Maitra, Aims and Methods of Painting in Ancient India, Rupam, XII–XIV, 1923; B. Bhattacharya, Indian Buddhist Iconography, London, 1924; P. N. Bose, Principles of Indian Śilpasāstra, Lahore, 1926; J. P. Vogel, Indian Serpent Lore, or The Nāgas in Hindu Legend and Art, London, 1926; E. B. Havell, Mathematical Basis of Indian Iconography, Rupam, XXX, 1927; V. V. Sarma Sastri, Method of Plastering Walls for Painting, Indian History Q., III, 1927, pp. 53–59; I. Stchoutkine, La peinture de l'Inde antique d'après les témoignagnes littéraires, RAA, IV, 1927, pp. 146–52; S. V. Venkateswara, Symbolism in Indian Art, Rupam, XXX, 1927, pp. 38–47; A. K. Coomaraswamy, Indian Architectural Terms, JAOS, XLVIII, 1928, pp. 250–75; A. K. Coomaraswamy, Yakṣas, I–II, Washington, 1928–31; P. L. Couchoud, Mythologie asiatique illustrée, Paris, 1928; N. K. Bhattasali, Iconography of the Buddhist and Brahmanical Sculptures in the Dacca Museum, Dacca, 1929; G. Combaz, La loi de la frontalité dans la sculpture indienne, RAA, VII, 1931–32, pp. 105–11; A. K. Coomaraswamy, Aesthetic of the Śukranītsāra, Études d'orientalisme publiées par le Musée Guimet à la mémoire de Raymonde Linossier, Paris, 1932, I, pp. 165–68; A. K. Coomaraswamy, The Painter's Art in Ancient India, JISOA, I, 1933; A. K. Coomaraswamy, The Technique and Theory of Indian Painting, Technical S., III, 2, 1934; A. Foucher, On the Iconography of the Buddha's Nativity, Delhi, 1934; S. Kramrisch, The Emblems of the Universal Being, JISOA, III, 2, 1935; J. N. Banarjea, Vidyādharas, JISOA, IV, 1936, I, pp. 53–56; A. K. Coomaraswamy, Elements, of the Buddhist Iconography, Cambridge, Mass., 1936; S. Kramrisch, Temple Door, Throne, JISOA, X, 1942, pp. 210–52; P. R. Majmudar, Iconography of Vāyu and Vāyu-worship in Gujarāt, JISOA, XI, 1943, pp. 108–14; J. N. Banerjea, Hindu Iconography, JISOA, XIII, 1945, I, pp. 55–129; J. N. Banerjea, Hindu Iconography, JISOA, XIV, 1946, II, pp. 1–74; G. H. Khafa, Elements of Hindu Iconography and Its sources, B. C. Law Vol., II, Poona, 1946, pp. 140–45; M. Chandra, The Techniques of Mughal Painting, Lucknow, 1949; J. N. Banerjea, Myths Explaining Some Alien Traits of the North-Indian Sun-Icons, Indian Hist. Q., XXVIII, 1952, I, pp. 1–6; P. Shah, Explication des signes et symboles de diverses divinités, JA, CCXLI, 1953, pp. 192–213; P. Rambach, V. de N. Golish, L'Inde: images divines, Paris, 1954; M. T. de Mallman, Notes d'iconographie tantrique, Arts Asiatiques, II, 1955, pp. 35–46; J. N. Banerjea, A Visnudharmottara Passage and the "So-called Trimūrti" of Elephanta, Arts Asiatiques, III, 1956, pp. 130–33; J. N. Banerjea, The Development of Hindu Iconography, 2d ed., Calcutta, 1956; R. D. K. Bosch, Remarques sur les influences réciproques de l'iconographie et de la mythologie indiennes, Arts Asiatiques, III, 1956, pp. 22–47; A. K. Coomaraswamy, The Dance of Siva, Bombay, 1956; M. T. de Mallmann, Notes d'iconographie hindoue, AAs, XIX, 1956, pp. 328–34; S. Gunasinghe, La technique de la peinture indienne d'après les textes du Śilpa, Paris, 1957; M. T. de Mallmann, Notules d'iconographie, Arts Asiatiques, V, 1958, pp. 299–302; M. T. de Mallmann, Les enseignements iconographiques de l'Agni-Purāṇa, Paris, 1963.

China: S. Julien, Histoire et fabrication de la porcelaine chinoise, Ouvrage traduit du chinois, Paris, 1856; F. Hirth, Scraps from a Collector's Note-book, Leiden, 1905; A. Waley, On the Criticism, Collection, Purchase and Handling of Pictures, Hirth Anniversary Vol., London, n.d. (1921), pp. 417–20; W. P. Yetts, A Chinese Treatise on Architecture, BSOAS, IV, 1926–28, pp. 473–92; S. Élisséev, La révélation de la peinture par Wang Wei, RAA, IV, 1927, pp. 212–15; J. Hefter, Abhandlung über die Landschaftsmalerei von Wang Wei, OAZ, XVII (N.S. VII), 1931, pp. 103–05; V. Contag, Tung Ch'i-ch'ang's Hua ch'an shih sui pi (Notizien aus der Meditationszelle über Malerei) und das Hua shuo des Mo Shih lung, OAZ, XIX (N.S. IX), 1933, pp. 83–97, 174–84; O. Sirén, The Chinese on the Art of Painting, Peiping, 1936; O. Sirén, An important Treatise on Painting from the Beginning of the XVIIIth Century, TP, XXXIV, 1938–39, pp. 153–64; O. Sirén, Shih-t'ao, Painter, Poet and Theoretician, BMFEA, XXI, 1949, pp. 31–62; H. Franke, Two Yüan Treatises on the Technique of Portrait Painting, Oriental Art, III, 1950–51, pp. 27–32; A. K. Ch'iu, The Chieh Tzü Yüan Hua Chuan, Arch. of the Chinese Art Soc. of America, V, 1951, pp. 55–69; R. T. Paine, Jr., The Ten Bamboo Studio, Arch. of the Chinese Art Soc. of America, V, 1951, pp. 39–54; G. R. Sayer, Ching-tê-chên Taolu, or the Potteries of China, London, 1951; W. R. B. Acker, Some T'ang and Pre-T'ang Texts on Chinese Painting, Leiden, 1954; Sze Mai-mai, The Tao of Painting, A Study of the Ritual Disposition of Chinese Painting, with a Translation of the Chieh tzü yüan hua chuan, or Mustard Seed Garden Manual of Painting (1697–1701), 2 vols., New York, 1956; O. Sirén, Chinese Painting, Leading Masters and Principles, I–VII, London, New York, 1956–58; R. H. Van Gulik, Scrapbook for Chinese Collectors, A Chinese Treatise on Scrolls and Forgers: Shu-hua-shuo-ling, tr. with an introduction and notes, Beirut, 1958; J. F. Cahill, The Six Laws and How To Read Them, Ars Orientalis, IV, 1961, pp. 372–81.

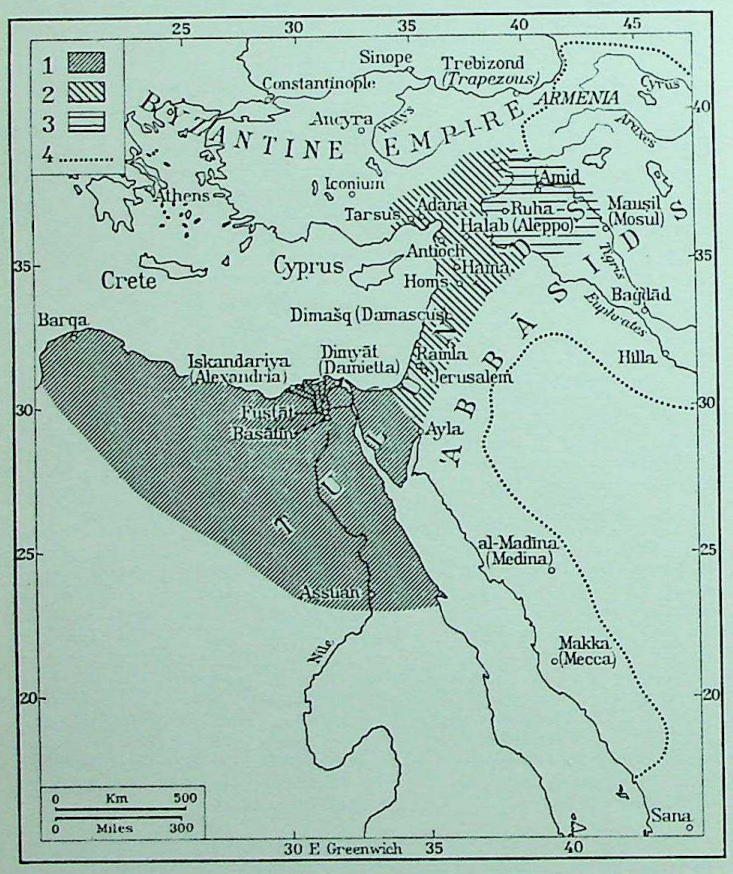
• •

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

TULUNID ART. By Tulunid art is meant the artistic production that was developed in Egypt under Aḥmad ibn-Ṭūlūn and his descendants (A.H. 254–92; A.D. 868–905). Although it derived its characteristics in the first place from the style of Samarra (see ABBASSIDE ART; ISLAM), Tulunid art was nevertheless rich in original elements and constitutes one of the most conspicuous achievements left by the first westward expansion of the art of the Abbasside caliphate.

SUMMARY. Historical background (col. 319). The mosque (col. 320). The minaret (col. 322). Architectural origins (col. 324). A Tulunid house (col. 325). Minor arts (col. 325).

HISTORICAL BACKGROUND. The Tulunid period was an important turning point in the history of architecture and art in Egypt. Hellenistic and Coptic influences had previously predominated (see COPTIC ART; LATE-ANTIQUE AND EARLY CHRISTIAN ART), as may be observed in the remains of woodwork, carved



Principal centers of historic and artistic interest of the Tulunid domain. *Key*: (1) Tulunid territory until 877; (2) territories conquered by Ibn-Ṭūlūn in 878; (3) extension of the Tulunid sphere of influence under Khumārawayh (889–96); (4) boundary of the Abbasside caliphate.

with acanthus and vine ornament, that have survived in the Mosque of 'Amr at Fostat (Old Cairo); these date from A.H. 212 (A.D. 827), in which year the mosque was enlarged by 'Abd-Allāh ibn-Ṭāhir.

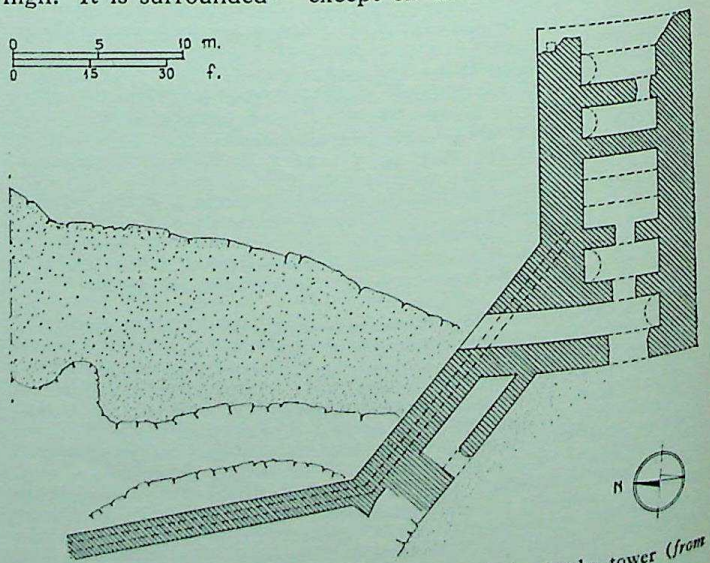
Until the Tulunid period Egypt had been ruled by a series of governors appointed by the caliph, scarcely any of whom had held office for more than three years. Aḥmad, who was born at Samarra in 835, was the son of Ṭūlūn, a Turki slave who had been sent by the governor of Bukhara to the caliph al-Ma'mūn in 815. Aḥmad received an education quite exceptional for one in his position. In 868 he was sent to Egypt as deputy governor of Fostat and a year later was given authority over the whole country.

At first he resided in the Dār al-Imāra of Fostat, but in 870 he proceeded to form a new suburb corresponding roughly to the area at present bounded on the east by the Citadel, on the north by the Shāri' aṣ-Ṣalība, which runs from the Citadel to Sayyida Zaynab, on the west by the Qal'at al-Kabsh, and on the south by a line drawn from east to west a little to the north of the Great Aqueduct. On the east side of this suburb, which was known as al-Qaṭā'i', and at the foot of the rock later occupied by the Citadel, he built himself a palace known as al-Maydān. It had nine gates, and in front of it was a great open space (maidan; Ar. *maydān*) extending as far as the mosque that he built a few years later. On the southeast side of the mosque was the Dār al-Imāra, which had a door (which still exists to the west of the pulpit) opening into the mosque. This enabled Ibn-Ṭūlūn to pass directly into the *maqṣura*, as was the rule in early Islam (e.g., at Damascus, Basra, Wasit, Merv, and Baghdad). He also built a hospital (*māristān*) in 872, intended solely for civilians, and an aqueduct with its intake tower (FIG. 320) at Basatin, a village about 4 miles south of the Citadel.

THE MOSQUE. The people having complained to Ibn-Ṭūlūn that on account of the number of his troops there was not enough room in the Mosque of 'Amr on Fridays, he decided to build a new mosque on an outcrop of rock called Gebel Yashkur. The mosque was built with brick piers instead of columns; this was such a novelty that two explanations were current, one (by Ibn-Duqmāq and Maqrīzī) that brick piers were adopted because marble columns cannot withstand fire, the other (by al-Balawī) that Ibn-Ṭūlūn did not wish to pillage churches for the 300 columns that would have been required. This story has all the appearance of a legend invented to explain the use of piers, which were an innovation in Egypt, whereas their use is perfectly well explained by the fact that Ibn-Ṭūlūn came from Samarra, where only a few years previously two immense mosques had been built with their roofs supported on piers.

Ibn-Ṭūlūn's mosque impresses one by its great size and by the noble simplicity of its plan. One mounts first a slope to reach its doors, then a few steps to enter the *ziyāda* (outer court), and from the *ziyāda*, by a semicircular flight of steps, one reaches the mosque proper. On entering one is struck by its air of peace and serenity, completely cut off as it is from the noise of the street, by its chaste ornament, and by its devotional atmosphere. The window grilles, which, in the shadow of the porticoes, stand out against the sky like delicate lacework, add greatly to the charm.

The scheme of the mosque can be seen from the plan (FIG. 321; VIII, FIG. 341) and the transverse section (FIG. 321). It consists of a *ṣaḥn* (rectangular court) about 302 ft. square surrounded by *riwāqs* (porticoes), five aisles deep on the *qibla* side and two aisles only on the other sides. *Ṣaḥn* and *riwāqs* constitute the mosque proper, which forms a rectangle measuring 401 ft. in width and 460 in depth with walls about 50 ft. high. It is surrounded — except on the southeast side, which



Basatin, Aqueduct of Aḥmad ibn-Ṭūlūn, plan of the intake tower (*from Creswell, 1932–40, II, fig. 244*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

was occupied by the Dār al-Imāra — by a great outer court (*ziyāda*) roughly 62 ft. broad. The whole forms a great rectangle almost exactly square (531 × 532 $^1/_2$ ft.). These *ziyādas* must be regarded as corresponding to the outer temenos (sacred enclosure) of a Semitic sanctuary, such as the Arab invaders met with when they captured Damascus. The building material consists of excellent red bricks measuring 7–7 $^1/_2$ × 3–3 $^1/_4$ × 1 $^1/_2$ – 1 $^3/_4$ in., with joints about 1 in. thick, the whole being coated with a fine and very hard white stucco in which the ornament is cut.

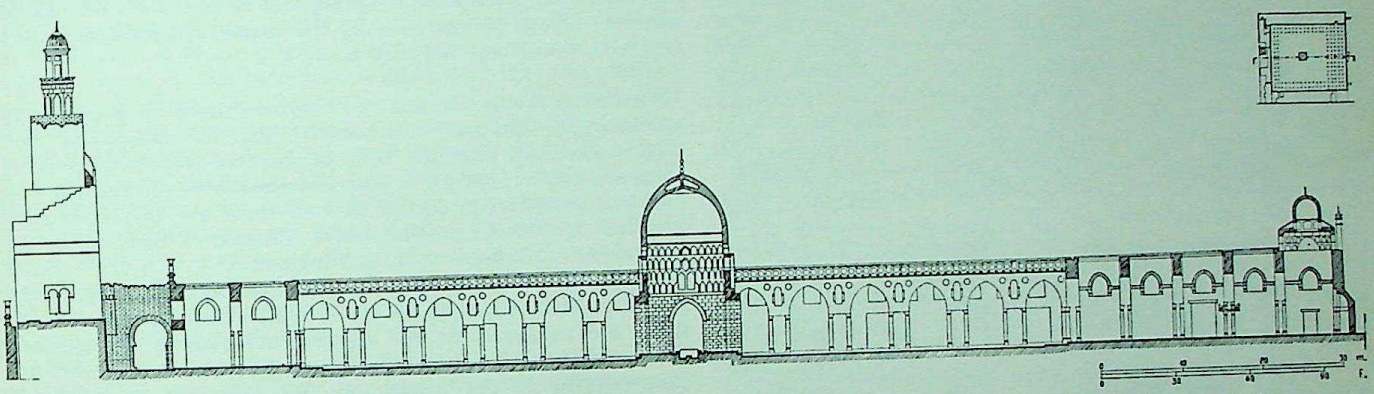
The unit of measurement employed in setting out the mosque must have been the Nilometric cubit of just over 21 $^1/_4$ in., for all the main measurements are multiples of it, with minute differences: the northeast wall externally measures 300 Nilometric cubits with a difference of 5 in.; the *ṣaḥn*, northeast side, measures 170 cubits less $^1/_2$ in.; the thickness of the wall of the mosque proper is 3 cubits less 0.4 in., etc. Why was the "black cubit" of Iraq not used? Possibly because Ibn-Ṭūlūn was more impressed and attracted by the cubit of the Nilometer, with which he must have been well acquainted, for he had restored it only twelve years previously.

The outer doorways are merely rectangular openings in the wall (monumental entrances had not yet been evolved), and the walls are absolutely plain except for a couple of fillets surmounted by a row of circles in squares and a curious cresting. The façade of the mosque proper on the northeast (PL. 189) seems to have been divided horizontally into two nearly equal parts. The lower part is perfectly plain except for one small and six large doors, all flush with the wall. In the upper half is a row of 31 windows with pointed arches and 7 slightly smaller recesses of the same shape, with their sills about 19 ft. above the floor of the mosque. Their arches rest on stumpy engaged columns without capitals, and the spandrels between the windows are occupied by small niches with fluted hoods. The top of the wall is capped by a row of circles in squares and a curious openwork cresting, exactly as the outer walls. The doorways of the mosque proper are perfectly plain like those of the outer wall. There are seven in the northeast and southwest sides and five in the northwest, making nineteen in all, so placed that each (except the small ones at either end of the rear aisle of the sanctuary) corresponds to a door in the outer wall. Each of these doorways is spanned by a row of palm trunks sawn down the center and laid with the round side uppermost. They have been boxed in by planking, plain at the sides but with carved ornament underneath. Four of these carved soffits have been preserved (PL. 192). Above this composite lintel is a brick relieving arch, as at Samarra. Besides the doors mentioned above, there are four more in the *qibla* wall.

The interior consists of a *ṣaḥn*, roughly 302 ft. square, with 13 pointed arches on each side. The sanctuary (PLS. 190, 191) is formed by five arcades of 17 arches each, the other *riwāqs* comprising only two arcades. The arches rest on piers 8 ft. in width and 4 $^1/_2$ ft. deep; those of the sanctuary are a little over 14 $^1/_2$ ft. in height, but the rest are about 1 $^1/_2$ ft. less. The rise of the pointed arches, which have a slight return, is 12 ft. The arches, including those of the windows, are surrounded by a continuous band of ornament, which turns at a right angle at the springing, runs across the top of the pier, and then turns at a right angle again to run around the next arch. The wall above each pier is lightened by a small pointed arch. At the summit of the arcades is a broad frieze of leaf-shaped motifs in stucco, and above it is the famous Kufic inscription on wood, over 1 $^1/_4$ miles in length, which runs along about 12 in. below the ceiling.

The soffits of the arches are decorated with bands of ornament, of which ten fairly well-preserved strips exist on the outer arches of the southwest *riwāq* and a few others elsewhere. Each band consists of a very broad central strip enclosed between narrow borders. The main strip in nearly every case consists of a geometric framework, the interstices of which are filled with various elements belonging to style B of Samarra (I, col. 8), which suffices to prove that this decoration dates from the foundation of the mosque. This framework, in arches S.W.4 and S.W.5, consists of two quite different designs, both set out on a network of squares placed at an angle of 45 degrees (FIG. 323, nos. 1, 3). Arches S.W.8, S.W.9, and S.W.10 show entirely different designs, all set out on a network of equilateral triangles (FIG. 323, nos. 2, 4, 5). The variety of designs, some composed of straight lines, some of interlacing circles, that can be set out on the same network is extraordinary. One may speak of two large groups of 45-degree and 60-degree patterns.

The windows form one of the most beautiful features of the mosque. There are 128 in all, and they average 6 ft. in width and 7 $^1/_2$ ft. in height. The author has shown elsewhere (Creswell, 1932) that only three, or at most four, of the grilles are original. These stand out, absolutely distinct from the rest by the fact that they are mainly composed of compass work, i.e., interlacing circles and segments of circles (PL. 192; FIG. 323, nos. 6–8).



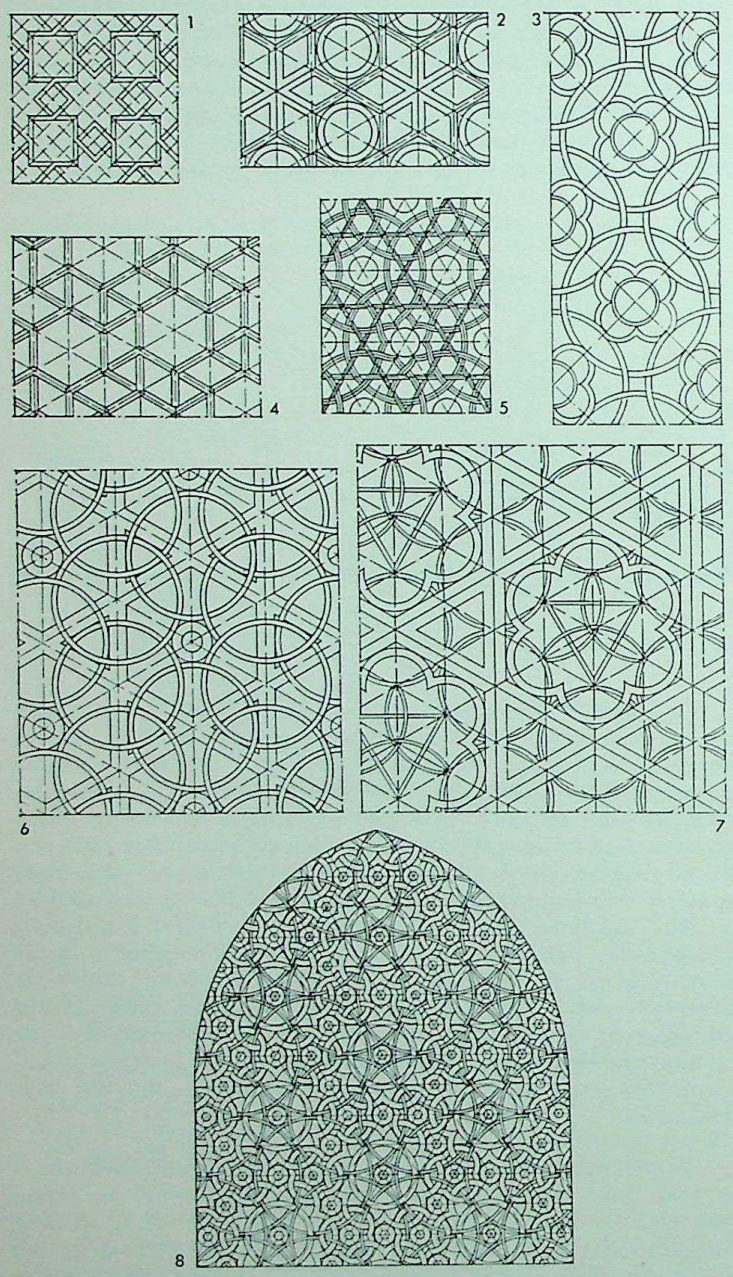
Cairo, Mosque of Aḥmad ibn-Ṭūlūn: transverse section; *above right*, schematic plan (*from Creswell, 1932–40, II, figs. 247, 257*).

THE MINARET. The minaret, well described by Corbet (1891) as "the most remarkable and enigmatic feature in the whole building," is built of blocks of hard limestone. It is divided into four stories, of which the lowest is approximately square in plan and 69 $^1/_2$ ft. high; it has a staircase on the outside, which makes one complete turn in a counterclockwise direction. Above this is another story, 28 $^1/_2$ ft. high and circular in plan, also with a staircase on the outside, which makes a little more than half a turn round it. Above this is a little octagonal kiosk of two stories, 16 $^1/_2$ and 18 $^1/_2$ ft. high respectively, the finial being 133 ft. above the ground. The second landing of the staircase is connected with the roof of the mosque by a stone bridge, carried on two parallel horseshoe arches 13 $^1/_4$ ft. in span that support a barrel vault. This bridge abuts against the mosque in an absolutely inorganic manner, its width extending from the middle of the twelfth to the middle of the thirteenth window, counting from left to right. The four faces of the lower story are each decorated at the same level with a blind window divided by a column, which serves as a central support for a pair of round horseshoe arches set in a rectangular frame molded

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in plaster. High up in the southeastern face is another blind window, similar but not set in a frame.

This minaret has provoked more discussion than any other Moslem monument in Egypt. Al-Muqaddasī, writing in 985, says that "its minaret of stone is small and its staircase is on the outside," and al-Quḍā'ī, writing in the following century, says that it was copied from the minaret of Samarra (I, PL. 11). Moreover, Ibn-Duqmāq and Maqrīzī repeat a little fable to the effect that Ibn-Ṭūlūn, toying one day with a piece of paper and rolling it round his finger, produced a spiral and then



Cairo, architectural decorations of the Mosque of Aḥmad ibn-Ṭūlūn, analysis of geometric designs in stucco. (1–5) Soffits of the arches; (6–8) window grilles (*from Creswell, 1932–40, II, figs. 249, 253–55*).

ordered his architect to take it as a model for his minaret. Now, this does not fit Ibn-Ṭūlūn's minaret *in its present form*, so the question arises: has this minaret undergone alterations? It is obvious that the two horseshoe arches that join it to the mosque must be of more recent date. Can it date from the period of Sultan Lājīn (r. 1296–99)? Two distinctive features at once present themselves as a basis for argument, viz., the two horseshoe arches of the bridge and the five pairs of blind horseshoe arches set in the faces of the minaret. Such arches appear in Egypt for the first time in the Madrasah-Mausoleum of Sultan Qalā'ūn (1284/1285; IX, PL. 270), so it can be assumed that extensive alterations to the minaret formed part of the restoration carried out by Lājīn in 1296. Was the second story part of an original helicoidal minaret copied from the minaret of Samarra and running right down to the ground, the lower part of which had become ruinous and been given a casing by Lājīn, the bridge being built at the same time?

In 1920 A. Patricolo, the chief architect to the Comité de Conservation des Monuments de l'Art Arabe, decided to test this. He began work at the back of the recess on the southwestern side and cut a horizontal shaft in the masonry about 6 ft. wide, 3 ft. high, and $7^1/_2$ ft. deep. The masonry proved to be coursed; no sign of a junction circular in plan was found, nor indeed any break in the masonry, although a point was reached not only well within the curve above which the outer edge of the spiral staircase would have passed, had it descended to the ground, but at least 18 in. within the outline of the round core embraced by the staircase of the present upper story. This discovery is of fundamental importance; it shows that the lower part is not merely a casing but is one with the whole minaret, which, on account of the features discussed above, can have been built only by Lājīn.

ARCHITECTURAL ORIGINS. The statement of al-Quḍā'ī, preserved in Ibn-Duqmāq and Maqrīzī, that the mosque of Ibn-Ṭūlūn was built after the style of the mosque of Samarra, is certainly not correct, for it does not resemble either of the two mosques at Samarra, except that all three are surrounded by *ziyādas*. It differs from the Great Mosque of Samarra in the number of its aisles — 5, 2, 2, 2 instead of 9, 4, 4, 3 — and in the fact that its roof rests on arcades instead of directly on the piers. Its piers alone recall those of Samarra, but whereas the latter are square and have engaged columns at the corners, those of Ibn-Ṭūlūn are oblong and the corner columns are counterfeited in the brickwork. Its plan, instead of being oblong as at Samarra, is square, as were the great mosques of Basra, Kufa, Wasit, and Baghdad. Neither does the façade recall Samarra, for there are no half-round bastions, nor do the windows, for those of Samarra are treated like arrow slits externally and have lobed arches internally, whereas those of Ibn-Ṭūlūn resemble the windows of the Mosque of 'Amr of 827, minus the transverse beam and wooden centering.

It is universally agreed that the ornament is derived from Samarra, but whereas at Samarra the three styles — A, B, and C — occur separately, in the mosque of Ibn-Ṭūlūn they are combined and mixed, and only the vine leaf with sculptured middle rib is found, not the type with sharply cut concentric ridges. It is principally in respect of its ornament and its piers that this mosque may be regarded as a foreign Iraqi building planted on the soil of Egypt, and a large number of Iraqi craftsmen must have been employed for its ornament in wood and stucco. This is not surprising, for Ibn-Ṭūlūn had come from Samarra and thousands of Iraqis doubtless followed him when they heard that he had risen to power. But many were there already, for Ibn-ad-Daya (*al-Mukafa'a*, p. 362; Creswell, 1932, p. 356) relates that about 861 a refugee from Iraq found so many people of Baghdad in Fostat that he was afraid of being recognized. The ornament of the Mosque of Ibn-Ṭūlūn and that of the Dayr as-Suryānī (Deir el-Suryani; ca. 914) in Wadi Natrun, west of the Nile Delta, are the two most westerly examples of the art of the Abbasside empire of the period — an art that prevailed over an immense area, from Nishapūr and Afrasiyab (Samarkand) to Bahrein in the south and to Rusafa in the northwest, where a band of stucco ornament in style B has been applied to the apse of the great basilica.

In the arcades of the sanctuary, the small arches above the piers are intended to economize masonry and at the same time to reduce the weight on the piers; such arches were employed for the same purpose in Roman bridges, e.g., the Pons Mulvius and the Pons Aemilius in Rome, both of the 2d century B.C. The system first appears in the East when Shāpur I captured the Roman emperor Valerian and his army in A.D. 260. Al-Ṭabarī says that the Roman prisoners built the great weir at Shushtar, which is 1693 ft. long and has 41 arches, with a small arched tunnel above each pier. At Dizful, only 10 miles away,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

is a bridge of the same type, which is attributed by Mustaufī to Ardashir I (r. ca. 226–41), but as Ibn-Sarābīyūn calls it the Roman Bridge (al-Qanṭarat ar-Rūmīya), it was presumably built by Roman prisoners also.

A TULUNID HOUSE. Precise dating of the houses excavated at Fostat presented great difficulties, because none had been found with its stucco decoration preserved. However, excavations carried out in 1932 a little to the north of Fostat, between the Mosque of Abū's-Su'ūd and the Great Aqueduct, brought to light a house built of red bricks, with fine panels ornamented in style C.

This house stands on the site of al-Qaṭā'i', which was destroyed by the Abbassides on the fall of the Tulunid dynasty in 905; this gives one limit for the date. The part uncovered consists of three parallel rooms in communication with one another, the largest of which measures only 17 × 13 ft. The side rooms open on the portico by doors only, but the central one is open for its entire width. In front is an isolated pier, which must once have belonged to a triple-arched portico, about $8^1/_2$ ft. in depth and 37 ft. in length. This grouping of rooms is frequently found in the houses of Fostat, and even the curious feature of a passage leading out of one of the side rooms into the back of the central one occurs in two of the houses excavated by Ali Bahgat Bey. A similar passage occurs in Cairo, in the house of Jamāl ad-Dīn adh-Dhahabī, dated A.H. 1046 (A.D. 1636), where the *maq'ad* is served by a similar passage. It is clear that this passage, which leads from a little vestibule where there is a marble arcade on dwarf columns supporting a shelf on which to make coffee, is a service passage by which servants bringing refreshments could enter. It can therefore be concluded that the passage in the house under discussion was also a service passage, corresponding to the passages in the residential quarters at Ukhayḍir (Iraq) that led to transverse kitchens behind the triple liwans. A few feet from the surviving pier of the portico were the remains of a basin, about 12 ft. square, with a sunken octagonal part in the center.

The plan comes, like the ornament, from Iran and Iraq, for there are similar liwan groups at Qaṣr-i-Shīrīn (Kurdistan), built by Khusrau II (r. 590–628), and at Ukhayḍir (ca. 778). This type, which consists of three barrel-vaulted liwans set side by side and generally preceded by a triple-arched portico, was adopted at Samarra, which was the Abbasside capital from 836 to between 884 and 891. The surviving pier suffices to show that the three parallel rooms of the Tulunid house were preceded by a portico, and on the analogy of Ukhayḍir one must suppose that the surviving part was duplicated on the opposite side of the courtyard with the fountain. The appearance of this type of house on the site of al-Qaṭā'i' must be attributed to Ibn-Ṭūlūn and the great number of Iraqis who must have followed him to Egypt.

MINOR ARTS. In the minor arts the main achievement of the Tulunid period was in wood carving, nearly all pieces being in the *Schrägschnitt* (diagonal cut) style. The objects that have survived are almost all either door panels or the sides of cenotaphs, all of which give an impression of extraordinary vigor and virility. Those which are preserved in Cairo have been published by Pauty (1931).

SOURCES. Yūsuf ibn-Muḥammad Abū'l-Hajjāj al-Balawī al-Shaykh (1132–1207), Sīrat Aḥmad ibn-Ṭūlūn (The life of Ahmad, son of Tulun), ed. Kurd 'Alī, Cairo, 1939; Ibrāhīm ibn-Muḥammad ibn-Dūqmāq Ṣārim ad-Dīn al-Miṣrī (d. 1407), Kitāb al-Intiṣār li-wāsiṭat 'iqd al-amṣār, cf. K. Vollers, Description de l'Egypte par Ibn Doukmak, publiée d'après le manuscrit autographe conservé à la Bibliothèque Khédiviale, Cairo, 1893; Abū'l-'Abbās Aḥmad ibn-'Ali al-Maqrīzī (1364–1442), Kitāb al-Mawā'iẓ wa'l-i'tihār fī ḏikr al-khiṭaṭ wa'l-'Āṯār (Notices and reflections on areas of the city and its monuments), Bulaq, A.H. 1270 (A.D. 1853/1854).

BIBLIOG. E. F. Jomard, Description de l'Egypte, état moderne, II, Paris, 1822, pp. 666–67; P. Coste, Architecture arabe ou Monuments du Kaire, Paris, 1837–39, pp. 31–33; A. C. T. E. Prisse d'Avennes, L'Art arabe, Paris, 1877, pp. 94–95, 246–47, 263–64; S. Lane-Poole, The Art of the Saracens in Egypt, London, 1886, pp. 53–64; M. van Berchem, Notes d'archéologie arabe, JA, s. VIII, vol. 17, 1891, pp. 411–95 (487–88), vol. 19, 1892, pp. 378–87, 394; E. K. Corbet, The Life and Works of Ahmad ibn Ṭūlūn, JRAS, 1891, pp. 527–66; H. Saladin, Manuel d'art musulman, Paris, 1907, I, pp. 89–93; E. Herzfeld, Die Genesis der islamischen Kunst und das Mshatta Problem, Der Islam, I, 1910, pp. 27–63 (36–49, 58–59); S. Flury, Samarra und die Ornamentik der Moschee des Ibn Tulun, Der Islam, IV, 1913, pp. 421–32; G. T. Rivoira, Architettura musulmana, sua origine e suo sviluppo, Milan, 1914, pp. 140–55; M. S. Briggs, Saracenic Architecture in Egypt and Palestine, The Architect, CIV, 1920, pp. 391–92; Aly Bahgat Bey and A. Gabriel, Fouilles d'Al Foustat, Musée de l'Art Arabe du Caire, Paris, 1921; E. Pauty, Les bois sculptés du musée arabe du Caire, jusqu'à l'époque ayyoubide (cat.), Cairo, 1931; K. A. C. Creswell, Early Muslim Architecture, 2 vols., Oxford, 1932–40; L. Hautecoeur and G. Wiet, Les mosquées du Caire, Paris, 1932, pp. 21, 130, 158, 208–16; Zākī Muḥammad Ḥasan, Les Toulounides, étude de l'Egypte musulman à la fin du IXe siècle, 868–905, Paris, 1933, pp. 298–308.

Keppel Archibald Cameron CRESWELL

Illustrations: PLS. 189–192; 4 figs. in text.

TUNG CH'I-CH'ANG. Chinese calligrapher and painter of the late Ming period (14th–17th cent.). As was typical of the *wên-jên*, or literati, painters, Tung Ch'i-ch'ang was also a high government official, a serious art critic, and an ardent collector. A large number of his important paintings are in a good state of preservation, as well as colophons on major pieces of ancient calligraphy and painting, which have been treasured for his learned opinion and handsome script.

Born in 1555 to a poor but scholarly family of Shanghai, then a small town, Tung left home as a youth to seek his future in the neighboring large city of Sung-chiang (Sung-kiang), and history was to remember him as the great master of the Sung-chiang school of painting. He first attended the prefectural school there and later served as tutor in a prominent family. While presumably studying and teaching the Confucian classics in preparation for the civil examinations, Tung took up the art of calligraphy and painting as proper gentlemanly self-cultivation. He quickly distinguished himself in both. The great collector Hsiang Yüan-pien (1525–90), of Kashing (Chia-hsing), taught Tung the traditional connoisseurship; and a local painter, Ku Chêng-i, also Tung's senior, perhaps gave him some beginning painting lessons.

The sophisticated literary society that encouraged the arts at that time was, on the one hand, frustrated by the deteriorating political situation and, on the other, fascinated by the developments in late Ming thought, particularly that of the new K'uang Ch'an school, led by Ho Hsin-yin (1517–79) and Li Chih (1527–1602), whose new departure from Ch'an (Jap., Zen) Buddhism was violent, iconoclastic, and full of action. K'uang (meaning "violent") Ch'an Buddhism was a refreshing change in the stagnant intellectual atmosphere; it had a significant effect on art, and Tung Ch'i-ch'ang soon found himself caught up in the vortex of this artistic and intellectual movement. Following the direction already set by an older friend of his, Mo Shih-lung (d. 1582/1588), who had identified the new attitude in art with a Ch'an term, calling it the "Southern School of Sudden Realization," as opposed to the "Northern School of Gradual Accumulation," Tung later became the standard-bearer of the new movement and established the course of the late *wên-jên* painting tradition.

In the meantime, young Tung Ch'i-ch'ang could not concentrate on the government examinations, failing them repeatedly. His father, indignant at his dallying in the gentlemanly pastimes of painting and calligraphy and neglecting his studies, would seize and destroy the paper and silk that admirers requesting his work had offered the young artist. Nevertheless, for 15 years he continued to meet with leading figures of both the northern and the southern school, discussing and pondering philosophical and artistic problems. Finally, in 1589, already in his mid-thirties, he passed the examinations, this time brilliantly, having been greatly helped, according to his own account, in his search for himself by the philosophy of Ch'an. He received his *chin-shih* ("Bachelor of Arts") degree and was appointed Compiler of History in Han-lin Academy, thus making a promising start in a government career.

The currents in artistic and intellectual movements at that time were turbulent, and the danger in political strife was grave. Although he held a number of high offices and served the government in many capacities (including that of tutor to Crown

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Prince Chu Ch'ang-lo, who later became emperor under the temple name of Kuang-tsung), Tung's political experience was a sequence of frustrations. Repeatedly he would leave Peking and return to his home in the south to live in prolonged self-styled "retirements," one of which lasted 15 years (1605–20). He devoted much time to developing his art, particularly his calligraphy. With time and wealth, Tung's long-nourished interest in art and art collecting advanced rapidly. However, in those days there was frequent rioting against the rich, and in 1616 a riot was directed against Tung. For three days the rampage went on; many buildings of the Tung estate were burned to the ground and a large part of his art collection was destroyed or lost. His political ambition in the uneasy years that followed found expression only in his writings and in the comments appended to his compilations of historical documents. About 1625 Tung became president of the Board of Rites at Nanking, and in 1631 he was named head of the Supervisorate of Instruction of the Heir Apparent. He retired officially at the age of eighty; two years later, in 1636, he died of natural causes and was posthumously given the title of Grand Tutor of the Heir Apparent.

His important work, *Shên-miao liu-chung tsou-shu hui-yao* (A Summary of the Memoranda Not Set Down in the Reign of Emperor Wan-li), which mirrored so well the difficult times, remained in manuscript form for more than 300 years, until 1937, when it was published in 14 volumes. A collection of his writings, *Jung-t'ai chi* (Collection of the Office of Ceremonies), which had several editions between 1630 and 1635, was banned by the Manchus in the Ch'ing dynasty and is now a rare item. Many anthologies of his short pieces, mostly on calligraphy and painting, such as the *Hua-yen* (The Eyes of Painting) and *Hua-chih* (Meaning of Painting), were unauthorized and posthumous publications; although they are frequently quoted, they contain many unauthentic entries.

In frustration and disillusionment, art took on additional meaning to Tung Ch'i-ch'ang. He turned again and again to painting for self-expression. His campaign for the "Southern School of Sudden Realization" was imaginative and bold. From his experience of the age-honored practice of copying the ancient masters he arrived at the conviction, which he worded with Ch'an flavor, that the crucial issue is the importance of "unlearning." Freedom from the cluttered and refined atmosphere of the mid-16th century was the direction first sketched out by his friend Mo Shih-lung; and Tung's "unlearning" took the curse of eclecticism off his search for inspiration among the masterpieces. The result was an almost abstract appreciation of form, with particular attention to brushwork and to rich ink gradations. When color was used — more often for its interesting hue than for descriptive purposes — it was naïve and strong. His painting, without any historical or literary narrative theme, rarely had human figures, and the landscape acquired a stark severity. The forms of trees, rocks, and the like yielded to the movement of the brush and the over-all logic of light and dark areas (PLS. 193, 194; III, PL. 284). Thus lines describing the trunk of a tree, the ridge of a roof, or the contour of a rock or a hill would cross one another and the staccato of black and white areas would travel rhythmically along a composition, if necessary without regard to the shaded and lighted areas of the terrain. Tung's calligraphy, too, seemed to express the same interest in the distribution of heavily and lightly inked strokes (PL. 194). It is this separation of formal organization from visual truth that gives his landscapes a pictorial reality of their own; the space in his landscapes thus gains conviction almost by default. In his representation of mountains and water, obvious elegance is avoided and deliberate "awkwardness" is a studied taste. His work was often camouflaged under such declarations as "in the style" or "spirit" of such masters as Li Ch'eng, Tung Yüan, Chü-jan, Kuo Chung-shu, Yen Wên-kuei, and Fan K'uan, of the late 10th and early 11th centuries, and Chao Mêng-fu, Wang Mêng, Ni Tsan (qq.v.), and Huang Kung-wang, of the Yüan dynasty; but Tung painted with a distinctly personal touch in his search for self-identification in the old tradition. While keeping his fighting spirit and inventiveness to the end, he toned down the iconoclastic overtones of his painting in his later days, in the interest of arriving at a more monumental and lasting form, which became his concern as he sensed the success and the importance of his work. He contained all exaggerated tendencies, mellowing into a new richness of interwoven forms at once stable and dynamic.

His work pointed to a new possibility for the reconstruction of landscape, almost as an atonement for his spearheading of the iconoclastic movement in his earlier years. His influence is evident in the expressive and eccentric works of Shih-t'ao (also known as Tao-chi) and Pa-ta-shan-jên (q.v.), on the one hand, and in the seemingly conservative but vital and monumental compositions of Wang Yüan-ch'i (1642–1715), on the other, thus permeating the late 17th and early 18th centuries.

SOURCES. Tung Ch'i-ch'ang, Jung-t'ai chi (Collection of the Office of Ceremonies), 1630; Mo Shih-lung, Hua Shuo (Discourse on Painting), Mei-shu ts'ung-shu (Art Studies), XVI, 1947 (4th ed.), pp. 303–10.

BIBLIOG. ThB, s.v.; A. W. Hummel, Eminent Chinese of the Ch'ing Period (1644–1912), II, Washington, 1943–44, pp. 787–89; O. Sirén, Chinese Painting: Leading Masters and Principles, London, New York, 1956–58, V, pp. 1–10, VII, pp. 246–49; Wu Ying-ming, Tung Ch'i-ch'ang yen-chiu (Study on Tung Ch'i-ch'ang), Hsin-ya Shu-yüan Hsüeh-shu Nien-k'an (Annual of the New Asia Academy Library), Hong Kong, 1959; N. I. Wu, Tung Ch'i-ch'ang (1555–1636): Apathy in Government and Fervor in Art, in A. F. Wright and D. Twitchett, ed., Confucian Personalities, Stanford, 1962, pp. 260–93.

Nelson I. Wu

Illustrations: PLS. 193–194.

TUN-HUANG. The art center of Tun-huang (probably the Θροάνα of Ptolemy's *Geography*) in the territory of the People's Republic of China (see CHINA, *Kansu*) is the most important of Central Asia (see ASIA, CENTRAL), for both the quantity and the quality of the works that have been found there. On the east it closes the circle begun with Khotan (see KHOTANESE ART) and continued with Kucha and Turfan (qq.v.). Although stylistic elements of Indian and Hellenistic-Roman derivation are present (see GANDHARA), they tend to diminish gradually because of the prevalence of Chinese elements from the T'ang period (see III, col. 510).

SUMMARY. Introduction (col. 328). Architecture (col. 330). Iconography (col. 331). Sculpture (col. 331). Wall painting (col. 332): *Northern Wei period; Sui period; T'ang period to 777; Late T'ang and later periods.* Other painting (col. 335).

INTRODUCTION. The Buddhist complex of Tun-huang is located at the western end of the province of Kansu (northwestern China), about 13 mi. southeast of the town of Tun-huang. For nearly a thousand years (4th–14th cent.) numerous sanctuaries were cut out in an alluvial hill overlooking a river that comes down from the mountains of the Astin Tagh. The oasis of Tun-huang owed its importance to its geographical position, on the borders of China and of the Central Asian regions through which contacts took place with the area called by the Chinese "the western countries," a generic term that included Iran, the eastern Mediterranean, and even western India. In the Han period (206 B.C.–A.D. 221) the town assumed the triple role that it kept for a long time: military outpost, commercial center, and essential caravan halt. The two roads that traversed the whole Tarim Basin, one at the north and the other at the south, met close to Tun-huang, whence they reached the center of China through Kansu. The Chinese emperors were well aware of the importance of this vast caravan route, the Silk Road, which permitted the expansion of Chinese trade toward India and the Mediterranean; therefore they had to maintain the safety of this route, which was constantly threatened by nomad raids, and the position of Tun-huang gave it great strategic value. Moreover, monks from more westerly regions used the Silk Road to reach China, and pious Chinese pilgrims visiting the holy places of Buddhism in India followed it in the opposite direction; hence the importance of the Buddhist sanctuaries of Ch'ien-fo-tung. The art of Tun-huang became the reflection of this constant mixture of influence of diverse origins.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

According to a 7th-century inscription on a stone tablet (beginning of the T'ang dynasty), the oldest Ch'ien-fo-tung monastery was consecrated by an Indian monk in A.D. 366. From that time onward, the rock-cut constructions multiplied and Tun-huang rapidly became an important religious center; in the 8th century it comprised more than a thousand caves. The building and ornamenting of new cave sanctuaries intensified throughout the period when the region was linked to China under the dynasties that favored Buddhism: the Northern Wei, the Sui, and the T'ang (until the 8th century only). This period of religious activity coincided with the times when China was expanding toward the west and strengthening its relations with India, then with Nepal and Tibet (qq.v.). In the middle of the 8th century Tibetan incursions into China brought about the fall of Tun-huang (777 or 778), and the region remained subject to the Tibetans until 848. Thereafter the oasis never regained its earlier importance, for the Tibetan occupation of the southern part of the Tarim Basin brought about a change in the route followed by the caravans, which from then on used the Northern Road, rejoining Ansi (An-hsi) about 81 mi. northeast of Tun-huang and leaving the oasis well away from the main trade routes. After the Tibetan occupation, the area was ruled for two centuries by local noble families — first the Chang, then the Ts'ao, who restored the damaged sanctuaries and even consecrated new ones up to the 10th century. In the 11th century the region was subjected by the Tungus (of Tibetan origin) and formed part of the Hsi-hsia kingdom (1001–1227). After that it was linked to China by the Yüan dynasty (1260–1368), but the Buddhist site continued to decline in importance, although several restorations and new foundations were still made at Ch'ien-fo-tung. In the 19th century what was left of its religious activity was divided between the Buddhists and the Taoists (see TAOISM); but the complex still remains a place of pilgrimage.

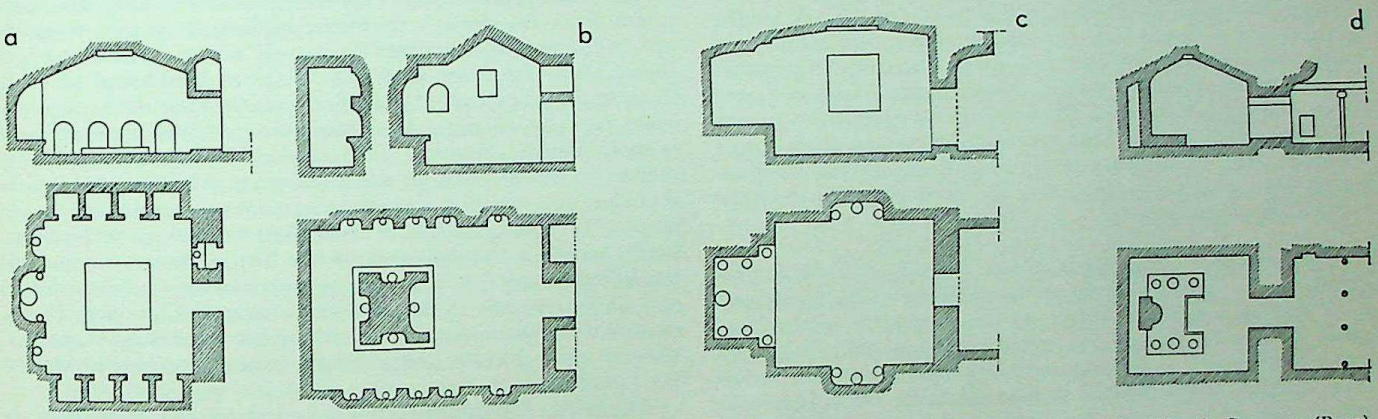
The artistic wealth of Ch'ien-fo-tung was first revealed to the world by the publications that followed site explorations by several foreign missions. Since the beginning of the 20th century, various expeditions have visited Tun-huang: English (Aurel Stein), French (Paul Pelliot), Russian (P. K. Koslóv), Japanese (Otani), and American (Langdon Warner). Since 1943, when the Tun-huang Research Institute was set up, the Chinese government has undertaken extensive work to clear the caves of sand, to restore the stairways and access passages, and to reinforce the vaults, paintings, and sculptures. Additional sanctuaries have been discovered; copies of paintings and photographs in color have been exhibited and published. Earlier paintings have sometimes been found underneath more recent layers. The caves, which were first numbered by Pelliot, have been renumbered (in this article the Tun-huang Research Institute number is given, followed by the equivalent Pelliot number designated by a P).

According to the census made under the direction of Professor Ch'ang Chou-hong (1959), there are at present 486 caves, divided chronologically in the report as follows: 32 caves of the Wei period (386–534), 110 of the Sui period (581–618), 247 of the T'ang period (618–907), 36 of the Five Dynasties period (907–960), 45 of the Sung period (960–1001), and 8 of the Yüan period (1227–1368). Some ten caves were rebuilt and redecorated under the Hsi-hsia rule (1001–1227).

ARCHITECTURE. The cliff in which the sanctuaries were hollowed out is $1^1/_4$ mi. long. In the central part, which is higher, the caves are built above one another on four or even five levels, but at the ends there are only one or two levels. Each sanctuary opened onto a wooden veranda by means of a short passage; these verandas, which have generally disappeared, rested on beams fastened into the cliff. The sanctuaries on the same level were connected with one another by an external gallery, while stairways connected the levels. The caves varied according to the period in their plan and in the cutting of the ceiling as well as in the distribution of the paintings and statuary (FIG. 330).

The tradition of rock-cut sanctuaries and monasteries — adopted in China from the Wei period onward, as is attested by the numerous caves at Yün-kang (5th–6th cent.; see III, col. 445) and those at Lung-mên (6th cent.) — probably passed to northern China from India by way of regions such as Bamian in Afghanistan (see INDO-IRANIAN ART) and Kizil (Kyzyl; Qyzyl) in the Tarim Basin. Each region, however, modified the traditional ideas and created forms peculiar to itself. Development and changes also took place at Tun-huang, just as they continued to do in the latest sanctuaries of the Tarim Basin, in the Turfan district.

The Tun-huang caves dating from the Northern Wei period, the oldest extant, are generally fairly small. Professor Ch'ang Chou-hong, director of the Tun-huang Research Institute, has divided them into two groups. The first type (FIG. 330, *a*) seems to derive from the vihara (Buddhist monastery) in India. The main hall is rectangular but less deep than wide. A niche of particular importance for a statue of the Buddha forms a recess in the wall facing the entrance. Small cells are hollowed out of the lateral walls, while a large but low square pedestal occupies the middle of the hall. The ceiling is divided into four sloping sections with a square coffer in the center. The plan of the caves of the second type (FIG. 330, *b*) is reminiscent of that of the oldest rock-cut caves in the Tarim Basin (Kizil and Kumtura). It is still rectangular, but this time extended in depth. Toward the back, and separated by a passage from the back and side walls, a massive quadrangular pillar has been left standing (not cut away) in the mass of the rock. There is a large niche on the front of the pillar, while smaller niches are arranged on the other sides and often on the lateral



Tun-huang. Caves of the Thousand Buddhas, plans and sections of typical caves. Northern Wei period: (*a*) Cave 285 (P120N), (*b*) Cave 254 (P105). Sui period: (*c*) Cave 420 (P136E). Late T'ang period: (*d*) Cave 196 (P63) (*from Fourcade, 1962*).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

walls of the cave. The front part of the cave thus constitutes a large quadrangular hall, with a pessage left, in the process of cutting, on the three sides of the pillar for the ritual *pradakṣiṇā*, the circumambulation around the cult image placed in the large niche facing the entrance. The ceiling has a shape that was unknown at Kizil, with its two sloping sides perpendicular to the main axis.

From the Sui period on, the plan was simplified (FIG. 330, *c*). The sanctuary is square, surmounted by a four-sectioned ceiling and a central coffer — a type that was still used centuries later. During the Sui period there were two variations in the arrangement of the main hall: in one type, a high pedestal was left in the center, in the process of cutting, to support the cult image and those which accompanied it; a rather small niche was hollowed out in each wall. The other variation left the center of the room clear but transformed the back wall into a wide, deep niche to admit the often numerous statues. A plan fairly similar to this was still in use in the T'ang period, when the disappearance of the lateral niches increased the surfaces available for paintings so that large compositions could take their place on the walls. Toward the end of this period the large niche in the back wall disappeared in its turn. The statues were placed on a large platform, not touching the back wall but projecting on both sides; the chief cult image was set against a pillar of fairly small diameter (left in the process of cutting) that rose up to the ceiling (FIG. 330, *d*). A similar arrangement is found in a cave at Shorchuk that must be of nearly the same date: there, in Cave 8, the same importance is given to the platform with the statues and it has the same shape, but the pillar left in the process of cutting takes up the full width of the back. Despite their differences, the changes that took place at the sites in Chinese Turkistan and at Tun-huang were analogous, since they followed a similar development of rites and beliefs.

ICONOGRAPHY. Mahayana ("Great Vehicle") Buddhism predominated at Tun-huang from the Northern Wei period on, as it did in northern China. The iconography is therefore quite similar to that of the same period in Yün-kang and Lung-mên; later it developed and new themes came into vogue. The Buddha Śākyamuni is at first often the chief image, in painting or in sculpture, and his life and previous existences (Jātaka episodes) are recalled in picturesque scenes. Sometimes he is accompanied by Prabhūtaratna, a Past Buddha with whom he talks and who shares his throne. The Mahayana pantheon is enormous; the seven Buddhas of the Past, Maitreya (the Future Buddha), the five metaphysical Buddhas (Dhyani Buddhas), and the bodhisattvas (compassionate beings whose cult grew during the Sui and T'ang periods) are represented and worshiped. In this period the representations of Śākyamuni did not completely disappear, and at the end of the 8th century his entry into Nirvana was still recalled by a large statue in Cave 158 (P19bis). The importance of the bodhisattvas became, however, preponderant, especially Avalokiteśvara (Kuan-yin), who rescues human beings in danger, and Kṣitigharba (Ti-ts'ang), who improves the conditions of rebirth. In mural and other paintings the paradises are a favorite theme, particularly Sukhāvatī, the Paradise of Amitābha. Portraits of the great disciples (lohans) made their appearance, as in T'ang China, and took on the same ascetic aspect. The Tun-huang paintings correspond to religious texts and generally to a Sūtra that was especially popular at the time they were painted.

SCULPTURE. Although painting assumed a preponderant position in the Tun-huang sanctuaries, the role of sculpture there was not negligible. Cult images, bodhisattvas, guardians of the temple and of the world (*dvārapālas* and lokapalas) occupied the wall niches or were arranged on bases or, later, on large platforms. These figures in relief were done mainly in a fairly coarse material: modeled in clay or plaster, dried and painted. Small statues were sometimes cast; the most important ones were first summarily built on an armature of reeds, rushes, or wood, then modeled in finer material. Various works were done in a harder agglomerate, some in wood (PL. 200). The quality of the sculptures perhaps equaled that of the paintings, but many have been restored or altered and have thus lost their original appearance. The works are similar to those done at the sites in China proper in the same period; and from the Northern Wei to the Yüan period, an almost parallel development continued in the two regions, both in style and in iconography. The compositions for a long time closely associated the figures in relief with the paintings that surrounded them; sometimes, indeed, various parts of painted figures were executed with thick layers of paint to lend relief. In the Northern Wei period the images were backed against the wall, on which the halos, aureole, canopy, and heavenly beings who accompanied them were painted (PL. 196). Later the statues became more independent of the wall and many were completely separated from it.

In the Northern Wei caves Śākyamuni or Maitreya most often occupies the main niche; sometimes Prabhūtaratna is associated with Śākyamuni. The sculptures are similar to those of the same period at Yün-kang. One finds the same seated postures, those called Indian or European style and the position of "royal relaxation" — that is, one leg flexed horizontally while the other is pendent; elsewhere the legs are crossed horizontally at the level of the calf, as they sometimes are in Gandhara, at Shotorak (Afghanistan), and often in the paintings of the Tarim Basin. The large monastic cloak (saṅghāṭi), borrowed from the Indian tradition, is draped in two ways: in one, it covers both shoulders ("covered" scheme), with its edges separated at the front of the body (as at Yün-kang) so as to show the undergarment, which passes under the armpit to leave the right shoulder free; in the second, the undergarment is more visible since the cloak covers the left shoulder only ("open" scheme), with an edge, however, drawn over the right shoulder, on which it curves according to a style which can be seen at Yün-kang (II, PL. 382, *left*) and which is found in later Chinese art and in that of the Tarim Basin. Sometimes the influence of this last region, intermediary between India and China, appears in the Buddha's draping (Cave 259, P111), as well as in the costumes of the richly attired bodhisattvas, who are clothed in the Indian dhoti, with a scarf looped around their nude torsos.

Sculpture subsequently developed along the same lines as in China proper: with the sense of volume of the Sui period, the roundness given to the contours, and the treatment of the folds in incurved lines. The bases of the seated Buddhas are partly masked by their cloaks, which fall decoratively down over them, making symmetrical folds and wavy edges. The Buddhas seated in the niches are framed by standing attendants: at first there was only one on each side, but during the T'ang period the number of the attendant bodhisattvas, with elegant outlines and rich ornamentation, was increased in the deep niche hollowed out in the back wall. Alongside them are placed the *dvārapālas*, in a more or less dynamic posture; these are always clothed in the costume of Chinese warriors, and their faces have assumed the menacing expression that became more pronounced in T'ang China. Thus two aspects of the trends in Chinese T'ang art are juxtaposed in these Tun-huang sculptures (as also in the paintings): the grace and sweetness (sometimes a bit affected) of the heavenly beings and the vigor (often somewhat caricatural) of the temple guardians or ascetics.

WALL PAINTING. Every wall and ceiling of the Tun-huang caves was covered with paintings, whereas at Yün-kang and Lung-mên they were covered with sculptures. The Tun-huang site therefore completes the data that the Chinese sites can supply for scholars' knowledge of art in the Northern Wei, Sui, and T'ang periods, even though the art of Tun-huang was slightly marginal to that developed in China proper. Like the paintings on the Mai-chi-shan site, farther east, the Tun-huang paintings (PLS. 195, 196, 199) of the Northern Wei and Sui periods reveal the forms and influences received from more westerly regions; these influences often reached the Far East, modified by their transit through one site or another. Later the Tun-huang paintings resumed this role of intermediary in the migration of motifs and influences, but from east to west,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

that is to say, in the opposite direction. The Tun-huang works, strongly marked by the esthetics developed at the T'ang court, served as models for painters from eastern Turkistan; in this way Chinese influences dominated in the sites of the Turfan region, at Shorchuk, and even in the later caves of Kumtura.

The painting technique at Tun-huang was fairly simple. Layers of clayey mud were applied on the rough walls, and chopped straw and animal hair were added to these layers; once a smooth surface had been made, it was covered with a layer of fine clay (kaolin) mixed with pulverized chalk and animal glue. A gum was mixed with the colors for a tempera ground. The rough sketch was first drawn with a stylet or a piece of charcoal, and the contours were then gone over with ocher or India ink. Pounced drawings, cut out or perforated, were sometimes used, as were pins and short cords to trace the round nimbuses and the architectural lines. The colors, of animal or plant origin, included, among others, red ocher, green malachite, azurite, black (from soot or charcoal), indigo blue, and vermilion (obtained from cinnabar). Various kinds of white existed: white lead, often used as an undercoat during the Northern Wei period, thickened the lines and modified the effects as it oxidized; a more delicate white was obtained from pulverized chalk; another came from crushed mother-of-pearl found in fresh-water shellfish, but this was much less often used, usually being reserved for textiles.

Northern Wei period. Influences from India — the themes, the iconographic traditions, and the adoption of mythical beings such as the apsarases, or female heavenly musicians — are found in Wei paintings at Tun-huang. But the Indian contributions arrived through the ancient sites in Afghanistan and the Tarim Basin, where they were stamped with a new spirit; there, as at Tun-huang, they mixed with Iranian elements. The Tun-huang painters in their turn interpreted these forms freely, sometimes according to the imagination of the individual painter, sometimes according to trends that came from metropolitan China, whether contemporaneous or inherited from earlier artistic production. In this way original works were created.

These influences, reinterpretations, and innovations are evident in the diverse aspects of the paintings. In important symmetrical compositions a large Buddha in majesty is surrounded by adorned bodhisattvas and by disciples or heavenly beings of short stature, standing or flying. This scheme passed from the Buddhist art of India to that of the Tarim Basin, from which the Tun-huang painters borrowed the nimbus of multicolored circles edged with stylized flames, and often the decorated canopy and flowering tree above the Buddha. But many of the figures were idealized, elongated as in the Northern Wei sculptures; chiaroscuro effects were sought through the modeling and through touches of light colors. Bamian and Kizil were the intermediary regions from which Tun-huang borrowed the friezes of heavenly musicians, who, framed with arcading, above a conventional balcony emerge from the waist up (Cave 251, P103); as in the prototypes, the projections, recesses, and beam ends are treated simply as surfaces to be decorated. Among the most typical of the themes borrowed from Central Asia and from Iran and western Asia Minor are those relating to the sun and the moon, which were sometimes suggested by the disks held up by a genie with outstretched arms, sometimes represented in their chariots (see also II, col. 81). In the latter case the interpretation of the Sun's quadriga became aberrant, as it did at Kizil and Kumtura. Coffer motifs, with concentric squares arranged as if they were a framework of beams (Cave 249, P101), were borrowed for ceilings inspired by the woodwork of these sites. Many ornamental details are of western origin, often Iranian: the arcading and bands in which polylobate leaves are juxtaposed, set against each other, or arranged in scrolls; the checked and squared effects recalling mosaics.

Various episodes from the life of the Buddha Śākyamuni and from his previous incarnations (Jātakas) are depicted. But though the pictorial narrative still follows the ancient texts and goes back to traditional poses and details, a new life is breathed into the whole by the liveliness and spontaneity of the movements — unknown at Kizil — and by the greater freedom of composition. Often empty spaces lighten the scenes and isolate the figures, thus avoiding the dense grouping of the Indian tradition. Chinese architectural styles with overhanging roofs were introduced; they are shown at an angle and follow the rules of perspective that always prevailed in China. Landscape elements of a special kind sometimes serve as a setting for a Jātaka. Mountains are suggested by variously colored, irregularly triangular masses, overlapping slightly and aligned horizontally or diagonally to separate different episodes; and a few slender trees are dotted about on the light background (Cave 257, P110). These series of schematic mountains have often been compared to the border motifs on Sassanian silver plates (see SASSANIAN ART); they also recall the landscape elements that appear on metal objects, terra-cotta plaques, and stone slabs from the Han period: the winding undulations of the lines of the soil, the roughly triangular outlines of the rocks, and, in this fanciful setting, horsemen or animals springing about, as they do in the paintings at Tun-huang.

The same Chinese source seems to underlie the very free compositions that decorate the sloping ceiling sections. On a creamy background the most varied creatures are scattered about in a wild whirl: arched apsarases with long scarves, acrobats, winged demons hurling themselves toward one another, mythical animals, birds and dragons with sinuous necks and long arched bodies, suggested as much as depicted (Cave 285, P120N). This exuberant fantasy (II, PL. 390; III, PL. 244) is a continuation of that revealed in the cosmogonic representations on the Wu Liang-tz'ŭ funerary slabs (2d cent.; see III, cols. 449, 494). In contrast to these compositions, and to the mobility of the flying figures and the scarves, whole walls are covered with the "Thousand Buddha" theme (*ch'ien fo*; PL. 196) — row upon row of Indian-style seated Buddha figures (Cave 272, P188J). These alignments are similar to the ones treated in bas-relief in the caves of the same period in Yün-kang, and the same theme appeared in the later paintings at Tun-huang and in the Turfan region. Another type of decoration of the Northern Wei caves also appeared in these later paintings: the rows of triangles and pendants arranged like lambrequins at the edge of the coffers of various ceilings. A stylization of the fringes of textiles seems to be at the origin of this motif, as it was for others, especially later.

Sui period. The paintings of this period are among the most delicately executed. They show a progress in technique as well as an enrichment indicated by the range of colors, precision in details, more subtle modeling, and elegance of forms. The use of gold leaf for various parts of the costume and for the jewelry enhances the exquisite effect of the pure lines of the drawing. Symmetrical compositions of the Buddha in majesty, framed by attendants, are numerous. The costumes are increasingly Chinese, as in the sculptures of the same period in Yün-kang and Lung-mên. A new wave of Indian influences, nevertheless, appeared in the hand gestures — a bit mannered, but very expressive — and in the ornamentation on the backs of thrones, with mythical beings, including misconceived descendants of the lions rampant and the *makaras* (aquatic monsters) of India. A few Iranian-Sassanian contributions also appear — medallions or lozenges picked out in pearl design on costumes and rows of large pearls bordering the compositions. Nevertheless, the Chinese character of the paintings becomes accentuated in the landscapes and buildings, as in the elegant lady donors (III, PL. 238), who are more freely grouped than in the Northern Wei period and who recall the graceful funerary statuettes of the same period. Themes that were to continue were introduced, such as the encounter between Mañjuśrī (Wên-shu) and Vimalakīrti (Wei-mo).

T'ang period to 777. Tun-huang painting was at its apogee from the beginning of the 7th century to the Tibetan occupation of the region in 777. During that time larger compositions were spread on the walls and arranged with a predominant concern for clarity and order; the colors are harmonious and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

subtle. The contours are rounded, the line sometimes emphasized, and the modeling accentuated, with a view to giving a sculptured effect to the painted figures. The groups are balanced, although they are arranged freely; often a pleasing effect is derived from the contrast of light and dark flesh tints. In the representation of the Buddhas and bodhisattvas the idealization of the human form successfully answered the need to express metaphysical concepts through it; but later repetition of the same types was to render them conventional and often meaningless.

A search for realism, sometimes even for violence, was juxtaposed with this idealization of the form, this search for a rather bland sweetness. As in the Chinese works of the same period, evidence of this can be found in two groups of characters: the dynamic lokapalas (guardians of the universe) and the great emaciated disciples (lohans), their faces distorted by the stress of thought. Concern for realism appears, too, in the small scenes of daily life that accompany the large compositions, and in groups of lay people, where men of every race mix and are clearly differentiated by their features and their dress. The representations of the Chinese donors, both male and female, are intended as portraits.

From the 7th century onward ancient themes such as the Jātakas lost favor, while new ones were adopted; among these, the representations of paradise were inspired by the *Saddharmapuṇḍarīka* (Lotus of the True Law), from the Kumārajīva translation (406), several copies of which have been found at Tun-huang. The theme lent itself to vast symmetrical compositions in the center of which sits enthroned the buddha to whom the paradise is related. The Paradise of Amitābha (Sukhāvatī) is the most frequently represented. The principal figure, large in proportion to the others, is surrounded by bodhisattvas, numerous deities, and groups of heavenly musicians and female dancers. The flying figures, with long fluttering scarves, are particularly graceful. These figures are harmoniously distributed in an architectural setting of palaces, terraces, and bridges spanning the lotus pond. An effect of depth is obtained by the perspective of the buildings, whose oblique lines lead toward multiple vanishing points. The feeling for space is especially noticeable in the landscapes: picturesque groups of people and animals are framed by mountains with towering summits, by rivers whose windings lead to a distant horizon placed high up in the composition, or by buildings that reproduce the religious or civil architecture of the time (houses, fortresses, pavilions, or gates). These mural paintings are particularly interesting because they show one of the stages in the development of the Chinese landscape, as do the rare engraved slabs and wash drawings of about the same period; they presage the sense of vastness that was to develop in the Sung-period scrolls, and sometimes an airiness, as when simple touches of diluted color (often greenish) shading the surfaces create an illusion of open air (Cave 156, P17 bis; mid-9th cent.).

Late T'ang and later periods. From 777 on, the activity of the Tun-huang painters was slowed down, if not halted, by the Tibetan occupation. When the occupation ended in the middle of the 9th century, the same subjects with the same approaches were revived, as they were also at another site, Yü-lin-k'u (Wan-fo-hsia), near Ansi, where representations of paradises attributed to the 9th century are found. The Tun-huang painters, moreover, must have worked in the secondary communities established in the area, such as Hsi Ch'ien-fo-tung, 20 mi. southwest. At the end of the 9th century the Chinese character of the paintings became more marked; a certain poverty of invention appeared and the types had a tendency to become conventional. These aspects were to remain in the later examples, in which the workmanship became more mechanical; activity was directed mainly to repairing or altering the ancient paintings.

Other painting. Tun-huang is known not only for the mural paintings but also for the paintings that adorn banners of fabric and for images on paper. A whole collection of these, concealed in a walled-up hiding place in the 11th century, was discovered there in the 20th century. Many were acquired by the Aurel Stein and the Pelliot missions; they form part of the collections of the British Museum and of the Musée Guimet, Paris. These paintings, mostly votive works, were executed on silk, hemp, or paper. Some must have been hung on the walls, others suspended from the ceiling, and the smallest and humblest, roughly executed on paper, must have been deposited as offerings. These paintings, made between the beginning of the 8th century and the end of the 10th, show T'ang stylistic tendencies and subjects mixed with other influences. The quality of the works is far from uniform; some of the banners are carefully executed, with vivid but harmonious colors; others are of a conventional style and show the use of pounced drawings; while still others are clumsily and hastily sketched.

The great Mahayana themes appear among these paintings; the various buddhas, bodhisattvas, and lokapalas are depicted, alone or joined in more complex compositions. The illustrations of the paradises are arranged in the same way as in the mural paintings (PL. 197). Several banners are especially devoted to two bodhisattvas: Ksitigarbha (Ti-ts'ang), who is often surrounded by the judges of the underworld, and Avalokiteśvara (Kuan-yin; PL. 198), the great savior, often surrounded by human beings in danger or equipped with a thousand arms to express the extent of his compassion — the same aspect that was adopted in the cave paintings of the mid-9th century (Cave 156, P17 bis). On some banners are to be found deities or Tantric symbols that show Nepalese-Tibetan influences. Many compositions are symmetrical; the density of the groupings and the juxtaposition of vivid colors recall the paintings of Central Asia. Other compositions are more free and airy, with softer and more subtle tonalities; thus they bear more resemblance to the esthetics of the Chinese painters of the T'ang period.

Bibliog. E. Chavannes, Mémoires composés à l'epoque de la dynastie T'ang sur les religieux éminents qui allèrent chercher la loi dans les pays d'Occident, par I-Tsing, Paris, 1894; E. Chavannes, Mission archéologique dans la Chine septentrionale, 3 vols., Paris, 1909-15; E. Chavannes, Cinq cent contes et apologues extraits du Tripitaka chinois, I–III, Paris, 1910–11, IV, 1934; L. Giles, Tun-huang lu: Notes on the District of Tun-huang, JRAS, XCI, 1914, pp. 703–28; L. Giles, The Tun-huang lu Re-Translated, JRAS, XCII, 1915, pp. 41–47; R. Petrucci, Les peintures bouddhiques de Touen-houang (Mission Stein), Ann. du Musée Guimet, XLI, 1916, pp. 115–40; P. Pelliot, Mission Pelliot en Asie Centrale: Les grottes de Touen-houang, 6 vols., Paris, 1920–24; A. Stein, Serindia, III, Oxford, 1921, p. 722 f; R. Petrucci and L. Binyon, Essays on the Buddhist Paintings from the Caves of the Thousand Buddhas (Tun-huang), in A. Stein, Serindia, III, Oxford, pp. 1392–1431; A. Stein, Ancient Buddhist Paintings from the Caves of Thousand Buddhas on the Westermost Frontier of China, London, 1921; A. Stein, The Thousand Buddhas: Ancient Buddhist Paintings from the Cave-Temples of Tun-huang, London, 1921–22; J. Hackin, Guide catalogue du Musée Guimet: Inde centrale et Gandhâra, Turkestan, Chine septentrionale, Paris, 1923; O. Sirén, Chinese Sculpture, 4 vols., London, 1923; A. Waley, An Introduction to Chinese Painting, London, 1923; E. Matsumoto, On Frescoes in the North Wei Style at the Cave of the Thousand Buddhas of Tun-huang, Kokka, 400, 1924, pp. 130–41; E. Matsumoto, An Equestrian Picture at Tun-huang, Kokka, 425, 1926, pp. 89–90; P. Pelliot, Indian Influences in the Early Chinese Art in Tun-huang, Indian Art and Letters, II, 1, 1926; D. Tekiwa and T. Sekino, Buddhist Monuments in China, 6 vols. plates, 6 vols. text, Tokyo, 1928–38; P. Pelliot, Les fresques de Touen-houang et les fresques de M. Eumorfopoulos, RAA, V, 1928, pp. 143–63, 193–214; K. Tomita, Two More Dated Buddhist Paintings from Tun-huang, BMFA, XXVI, 1928, p. 11; B. March, A Tun-huang Buddhist Painting, B. of the Detroit Inst. of Art, X, 1929, pp. 109–11; E. Matsumoto, Gods of Thunder and Wind Represented in the Old Arts of the Orient, Kokka, 468, 1929, pp. 309–18; E. Matsumoto, Development of the Characteristics of the Buddhist Pictures in Central Asia and Its Relation to the Far East, Kokka, 1929, 465, pp. 235–43, 466, pp. 247–53, 469, pp. 343–348; F. W. Thomas and S. Konow, Two Medieval Documents from Tun-huang, Etn. Mus. Skrifter, III, 1929, pp. 121–60; A. Waley, A Catalogue of Paintings Recovered from Tun-Huang by Sir Aurel Stein, Delhi, London, 1931; L. Bachhofer, Die Raumdarstellung in der chinesischen Malerei der ersten Jahrtausends n. Chr., Münchner Jahrbuch der Bildenden Kunst, N.S. VII, 1931, pp. 193–242; E. Matsumoto, On some Amulet Pictures from Tun-huang, Kokka, 482, 1931, pp. 3–6; E. Matsumoto, On a Nestorian Figure-Painting from Tun-huang, Kokka, 493, 1931, pp. 364–70, 496, 1932, pp. 72–83; E. Matsumoto, On a T'ang Buddhist Painting from Tun-huang Dated A.D. 720, Kokka, 511, 1933, pp. 153–56; E. Matsumoto, Kshitigarbha, The Ten Kings of Hell and Yin-lu Bodhisattva, Kokka, 515, 1933, pp. 265–70; O. Sirén, A History of Early Chinese Painting, 2 vols., London, 1933; A. Salmony, Friends of Far Eastern Art, Berkeley, Los Angeles, 1934; B. Bohlin, Newly Visited Western Caves at Tun-huang, HJAS, I, 1936, pp. 163–66; D. Parsons, The Caves of the Thousand Buddhas, ILN, May 30, 1936; M. Lalou, Vaiśravaṇa et Gaṇeśa et deux peintures de Touen-houang, JA, CCXXIX, 1937, pp. 301–02; E. Mat-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

sumoto, Tonkô-ga no Kenkyū (Studies of the painting of Tun-huang), Tokyo, 1937; Conte Otani, Shin Saiiki-ki (Report on the expedition of 1902–14), Tokyo, 1937; L. Warner, Buddhist Wall-Paintings: Study of a Ninth Century Grotto at Wan Fo Hsia, Cambridge, Mass., 1938; A. C. Soper, Japanese Evidence for the History of Architecture and Iconography of Chinese Buddhism, Mon. Serica, IV, 1939–40, p. 621f.; A. C. Soper, Early Chinese Landscape Painting, AB, XXIII, 1941, pp. 141–54; J. Auboyer, Les influences étrangères et les reminiscences dans les peintures murales du Kondô du Hôryûji, Paris, 1941; E. Matsumoto, On the "Ten Kings Scripture" Picture Scrolls from Tun-huang, Kokka, 621, 1942, pp. 227–232; S. Taki, Daijā Bukkyā no Shinbikan (Esthetic conceptions of Mahāyāna Buddhism), Kokka, 1943, 634, pp. 261–65, 635, pp. 287–90; L. Giles, Six Centuries at Tun-huang: A Short Account of the Stein Collection of Chinese Mss. in the British Museum, London, 1944; M. Lalou, Mythologie indienne et peinture de Haute-Asie: I, Le dieu bouddhique de la Fortune, Artibus Asiae, IX, 1946, pp. 97–111; Shih Yai, Chinese Inscriptions in the Caves of Tun-huang, Chengtu, 1947: A. C. Soper, The "Dome of Heaven" in Asia, AB, XXIX, 1947, pp. 225–48; F. H. Andrews, Wall-Paintings from Ancient Shrines in Central Asia, Recovered by Sir Aurel Stein, London, 1948; J. L. Davidson, Buddhist Paradise Cults in Sixth Century China, JISOA, XVII, 1949, pp. 112–24; J. M. Plummer, Tun-huang: Vision of Buddhist Glory as Seen in Irene Vincent's Photographs, AQ, XIV, 1951, pp. 56–67; F. and J. Shor, The Caves of the Thousand Buddhas, The National Geographic Magazine, XCIX, 1951, pp. 383–415; Tun-huang: Copies de peintures murales et copies de plafonds, Peking, 1952–53; M. Bussagli, L'influsso classico ed iranico sull'arte dell'Asia Centrale, RIASA, N.S., II, 1953, pp. 171–262; T. Fukuyama, A Tentative Chronology of the Tun-huang Caves, Ars Buddhica, XIX, 1953, pp. 28–32 (in Jap.); I. V. Vincent, The Sacred Oasis: Caves of the Thousand Buddhas, Tun-huang, London, 1953; J. L. Davidson, The Lotus Sûtra in Chinese Art: A Study in Buddhist Art to the Year 1000, New Haven, Oxford, 1954; N. Vandier-Nicolas, Sāriputra et les six maîtres de l'Erreur, Paris, 1954; A. Bulling, Buddhist Temples in the T'ang Period, Oriental Art, N.S., I, 1955, pp. 79–86, 115–22; Hsieh Chih-liu, Tun-huang yi-shu tsū-lu (The mural pictures of Tun-huang, cat.), Shanghai, Peking, 1955; Tun-huang pi hua chi ch'ung lu (A portfolio of hand copies after the Tun-huang wall paintings prepared by the Tun-huang Institute), Peking, 1955; E. Matsumoto, A Fragment of "Preaching Buddha," a Wall-Painting from Tun-huang, Bijutsu Kenkyū, 181, 1955, pp. 39–40; O. Sirén, Chinese Painting, Leading Masters and Principles, I–III, part I, London, New York, 1956; T. Akiyama, A Scroll-Painting Illustrating the Pien-Wen, about the Magic Competition between Śāriputra and Raudrākṣa, Brought Back by Paul Pelliot from Tun-huang, Bijutsu Kenkyū, 187, 1956, pp. 43–77; O. Sirén, Central Asian Influences in Chinese Painting of the T'ang Period, Arts Asiatiques, III, 1956, pp. 3–21; Ch'iang Liang-fu, Tun-huang wei ta ti wen hua pao chiang (Cultural elements preserved at Tun-huang), Shanghai, 1956; A. Waley, A Legend about the Caves of the Myriad Buddhas, Sino-Indian Studies, V, 1957, p. 241; Ch'ang Shu-hung, Tun-huang Mo-kao-ku (The Cave of Mo-kao at Tun-huang), Lanchow, 1957; S. Mizuno, Wall Painting of Tun-huang, Tokyo, 1958; Ch'ang Shu-hung, Tun-huang pi hua (The mural painting of Tun-huang), Peking, 1959; B. Gray and J. B. Vincent, Buddhist Cave-Paintings at Tun-huang, London, 1959; Chen Tsu-lung, Tables de concordance des numérotages des grottes de Touen-houang, JA, CCL, 1962, pp. 257–76; F. Fourcade, La peinture murale de Touen-houang, Paris, 1962; M. Bussagli, La peinture de l'Asie Centrale, Geneva, 1963.

Madeleine HALLADE

Illustrations: PLS. 195–200; 1 fig. in text.

TURA, COSMÈ. Principal master of the 15th-century Ferrara school of painting, also active as a sculptor and designer (b. 1430 and d. 1495, Ferrara).

SUMMARY. Chronology (col. 338). Works (col. 339). Stylistic development (col. 340).

Court painter for Duke Borso d'Este, Cosmè (Cosimo) Tura was considered the leading artist in the Este domain and was overwhelmed with commissions, not only from the court but also from the Church and from private sources. Early in his career his fame spread far beyond the boundaries of his native region. Filarete (Oettingen, 1896, p. 2) ranked Tura with Filippo Lippi, Piero della Francesca, Andrea Mantegna, and Vincenzo Foppa (qq.v.); and Giovanni Santi (Padovani, 1954, p. 41) considered him to be on a level with Antonello da Messina, the Bellini brothers, Ercole de' Roberti, and Melozzo da Forlì (qq.v.). However, in 1471, with the death of his enthusiastic patron, Duke Borso d'Este, Tura's popularity began to dwindle appreciably, and in 1486 Ercole de' Roberti replaced him at the court. Reduced apparently to poverty and overtaken by the onward march of art, Tura seems to have died in obscurity. Toward the end of the 16th century there was a revival of interest in his work, during which his name stood out in the local chronicles as the most illustrious in Ferrarese art history. In the second half of the 19th century documentary research began to reconstruct the personality and trace the influence of the master; the extant works attributed to him were restudied in an effort to establish his *œuvre*. Since then critics have come to consider Cosmè Tura one of the foremost masters of the early Italian Renaissance.

CHRONOLOGY. The documents relating to Tura's life and *œuvre* have been collected and published principally by L. N. Cittadella (1866), G. Campori (1876, 1886), and Venturi. By 1451 Tura was already considered such an authority on art that he had been assigned, together with the painter Galasso di Matteo Piva, to appraise the paintings of Jacopo Turola. Beginning in 1452 Tura drew a regular salary from the court; in the same year he was busy with commissions for decoration, a type of work that occupied much of his attention throughout his creative period. He decorated a jousting helmet with the Este emblems and painted a banner for the tailors' guild of Ferrara, which he altered four years later. In addition he decorated, with Giovanni Carlo di Bretagna and the miniaturist Giorgio Tedesco (d'Alemagna), a large number of chests.

From 1453 to 1456 there are no documents referring to Tura; evidently he spent these four years away from Ferrara, probably in Padua, according to Venturi, for his style seems to indicate a careful study of the decoration, by Andrea Mantegna (q.v.), of the Ovetari Chapel in the Church of the Eremitani there. Furthermore, a passage in Tura's first will (dated 1471) implies a long stay in the Veneto region, which could have taken place only during the years in question.

In 1457 Tura was again in Ferrara, where he was assigned quarters in the castle. From this time on he concentrated on an area of art to which he remained faithful for several decades: the designing of tapestries. His motifs were principally heraldic and decorative, although he designed several figural tapestries; two versions of one of them, woven by Lieven Gillisz., are extant (see below).

Tura's earliest known painting is a small Nativity of 1458 (now lost) for the Cathedral of Ferrara. Between 1459 and 1463 he was designated *Depintore dello Studio* and was the chief artist for the decoration of the *studiolo* of the Este castle of Belfiore in Ferrara; a number of other artists worked both with him and for him on the project. At Belfiore, as previously, the work consisted principally of decorative designs, but there were some paintings with figures as well: according to a manuscript by Ludovico Carbone (*De amoenitate, utilitate, magnificentia Herculei Barchi*, 1472) a cycle of the nine Muses begun by Angelo Macagnini, Tura's predecessor in charge of the work, was continued after Macagnini's death (Aug. 5, 1456) by Michele Pannonio and finished by Tura after 1459. In this period Tura resumed his work on tapestry designs. From 1459 to August, 1462, there are no references to other works, but documents of 1462 and 1464 show payments for decoration of armaments and jousting equipment made for several persons. There are no records of the artist's activity from 1465 to 1467. According to Venturi (1885) Tura spent this time in Mirandola, decorating the library in the Pico Castle with allegorical figures. L. G. Giraldi (*Operum quae extant omnium*, Basel, 1580) gives a detailed description of these decorations and names Tura as the probable artist. By the end of 1467 Tura was back in Ferrara, where he was paid on Dec. 31 for tapestry cartoons.

The second of Tura's masterpieces (now lost) was produced in 1467–68: the decoration of the Capella Sacrati in the Church of S. Domenico, Ferrara, including frescoes with New Testament themes and an altarpiece with the Adoration of the Magi. Another masterpiece followed immediately, the great paintings of the organ door for the Cathedral of Ferrara (PLS. 202, 203, 208), for which Tura was paid on June 11, 1469. This is the earliest unequivocally documented work by Tura still in existence (Ferrara, Mus. dell'Opera del Duomo). Vasari mentions both works.

The frescoes in the Hall of the Months of the Palazzo Schifanoia in Ferrara were painted 1469–71. According to several sources Tura was the chief master of this painting cycle, which was the work of several artists. He furnished a series of sketches that were followed by other painters and a complete fresco, *September*. His fellow workers were Francesco del Cossa

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

(q.v.) and Antonio Cicognara; later these were joined by Baldassare d'Este and an anonymous artist. At about the same time Tura, then at the height of his career, was in charge of the painting and sculptural decoration of the chapel of Belriguardo Castle in Voghiera. Here Tura had two anonymous assistants, with whose help he produced a number of frescoes (God the Father, the Evangelists, and the Church Fathers) and decorative carvings. Baldassare d'Este and the Venetian painter Antonio Orsini submitted a detailed assessment dated Mar. 31, 1472. The church — probably on a central plan with a dome — along with its decorations has been destroyed.

At the time of completion of this great work Tura wrote his first will, dated Jan. 14, 1471, which shows him to have been a wealthy man. In the same year Duke Borso died and Tura executed the decoration of his tomb. Subsequently he took part in the preparations for the marriage of Duke Ercole I d'Este to Eleanor of Aragon, which was celebrated with great pomp and ceremony. His principal project was the design of an elaborate silver service, which was made by the Venetian goldsmith Giorgio Alegretto da Ragusa. In addition Tura painted two portraits in 1472: of Duke Ercole I and of Lucrezia d'Este (both lost). Again in 1473 and 1474 he was busy with tapestry designs. In 1474 he also completed one of his most important works: the Roverella Altarpiece for the Church of S. Giorgio fuori le Mura in Ferrara. Most of this altarpiece is extant, although the parts are now scattered. R. Longhi (1934) has made an effort to reconstruct this great triptych, but his work has not been universally accepted. The main panel (PLS. 206, 207) is in London (Nat. Gall.), the right panel (PL. 205) in Rome (Gall. Colonna), a fragment of the left panel (head of St. George) in San Diego (Fine Arts Gall.), and the lunette (PL. 204) in Paris (Louvre). The paintings of the columns and of the predella and the two half-figures over the side panels are lost.

In 1475, besides executing several new tapestry designs, Tura painted a portable altar for Duke Ercole I that had been carved by Bernardo da Venezia and decorated in niello by Amadio da Milano. Four panels that probably formed part of this altar are in Washington (Nat. Gall.). In 1477 Cosmè completed three portraits (now lost) of the year-old successor to the throne, Alfonso d'Este.

Among the documented works of subsequent years, the most important are some allegories with nude female figures. Four of these figures, already painted when Tura received the commission, required only retouching; three others were new works by the artist. Apparently these comprised a cycle of Virtues, said to be designed for the duke's study, a room often identified with the *studiolo* at Belfiore on which Tura had worked in 1459–63. This identification is for several reasons unlikely, but for the present it is not possible to determine the location more exactly or to identify the feminine nudes with any existing allegories of Tura and his group. Possibly the drawing of a nude Charity (?) in Berlin (Kupferstichkab.) is related to this cycle. In 1479, in addition to tapestry cartoons, Tura painted a portrait of Lucrezia d'Este, and in 1480 one of Isabella d'Este (both lost). The records also mention a tapestry with the story of Solomon (1480), woven by Rubinetto (Rubino) di Francia from a cartoon by Tura. The large *St. Anthony* for the altarpiece of the Church of S. Niccolò in Ferrara (Modena, Gall. Estense) has been definitely dated from the records as belonging to 1484. Between 1483 and 1485 Tura designed a silver service for Lodovico il Moro, and in 1485 he painted a portrait (lost) of Beatrice d'Este as Lodovico's bride. The *Compilatio Astronomica* of Alfraganus (al-Farghâni), published in Ferrara in 1493, includes a woodcut illustration that reflects Tura's style and mode of interpretation and is probably after a drawing by him.

WORKS. There are certain symbols on some of Tura's works that have been considered as signatures, although with doubtful justification; all the existing works must be presumed to be unsigned and undated. The dates assigned to them are based on the study of his presumably or definitively authentic works. The definitive works are the organ door (1468–69) in Ferrara, the Roverella Altarpiece (1474), the portable altar of Ercole I (1475), and the altarpiece for the Church of S. Niccolò in Ferrara (1484). These are the masterpieces whose common features show a clear picture of Tura's style and whose slight differences throw a certain amount of light on the development of his style.

Considering that Tura is known to have worked as a painter of frescoes and other types of pictures and as a sculptor, a draftsman, and a designer and that he also retouched the works of other artists and made use of assistants and apprentices (some of them known by name), the extant works may be divided into the following categories:

Works by Tura. a. Paintings (in their probable chronological order): *Portrait of a Young Prince of Este* (Met. Mus.). – *St. John the Baptist and St. Peter*, two joined panels in antique frames (Philadelphia, Mus. of Art, Johnson Coll.). – *Madonna with Zodiac Mandorla* (Rome, Gall. Colonna). – *St. George on Horseback* (Manor House, near Mells, Somerset, Asquith Coll.). – *Madonna with Sleeping Child*, in antique frame with painted lunette (Venice, Acc.). – Altarpiece for Church of S. Maria della Consolazione, Ferrara: *Virgin with SS. Jerome and Apollonia* (Ajaccio, Mus. Fesch); predella paintings: *Annunciation* (Rome, Gall. Colonna), *St. Maurelius* (Milan, Mus. Poldi Pezzoli), *St. George and the Dragon* (Venice, Coll. Cini). – *Portrait of a Man* (Washington, Nat. Gall.). – Allegorical figure, Venus (or Spring ?; PL. 201; London, Nat. Gall.). – Two tondos from St. Maurelius Altarpiece for Church of S. Giorgio fuori le Mura: *Condemnation and Execution of St. Maurelius* (PL. 204; Ferrara, Pin.). – *Madonna in the Garden* with (above) *Annunciation* (Washington, Nat. Gall.). – Organ door for Cathedral of Ferrara: *Annunciation* (PL. 203); *St. George Slaying the Dragon* (PLS. 202, 208; both, Ferrara, Mus. dell'Opera del Duomo). – *St. John at Patmos* (Genoa, Coll. Gnecco). – *Crucifixion* (Cambridge, Fitzwilliam Mus.). – *Pietà* (XII, PL. 36; Venice, Mus. Correr). – Three tondos: *Adoration of the Magi* (Cambridge, Fogg Art Mus.); *Circumcision* (Boston, Isabella Stewart Gardner Mus.); *Flight into Egypt* (Met. Mus.). – Roverella Altarpiece for Church of S. Giorgio fuori le Mura, Ferrara: *Madonna and Child Enthroned* (PLS. 206, 207; London, Nat. Gall.); *SS. Paul and Maurelius with Nicolò* (?) *Roverella* (PL. 205; Rome, Gall. Colonna); head of St. George, fragment of left panel (San Diego, Fine Arts Gall.); *The Lamentation* (PL. 204; Louvre). – Portable altar of Duke Ercole I: *Annunciation* (in two panels, one of Archangel Gabriel and one of Virgin); *St. Francis*; *St. Maurelius* (all, Washington, Nat. Gall.). – Altarpiece for Certosa, Ferrara: *St. Jerome* (London, Nat. Gall.); Crucifix (Milan, Brera). – Altarpiece for Church of S. Luca in Borgo, near Ferrara: *St. Sebastian* and *St. Christopher* (Berlin, Mus. in Dahlem). – Polyptych: *St. James* (Caen, Mus. B. A.); *St. Anthony of Padua* (Louvre); *St. Dominic* (Uffizi). – Altarpiece for Church of S. Giacomo, Argenta: *Madonna with Blessing Child* (Bergamo, Acc. Carrara); *St. Louis of Toulouse* (Met. Mus.); *St. Nicholas of Bari* (Nantes, Mus. B. A.); *Pietà* (Vienna, Kunsthist. Mus.). – Altarpiece for Church of S. Niccolò, Ferrara: *St. Anthony* (Modena, Gall. Estense). *b. Frescoes*: Hall of the Months in Palazzo Schifanoia, Ferrara: *September*; the Virgo of *August*; right half of lower frieze of *July*; equestrian group on east end of south wall. *c. Sculpture*: *Pietà*, painted terra cotta (formerly Florence, Coll. Ventura). *d. Drawings*: Mercury (Bayonne, Mus. Bonnat). Christ (?) at the Pillar (formerly Berlin, private coll.). – Vesta with candelabra (retouched; Vienna, Albertina, Inv. No. 2579). – Charity (Berlin, Kupferstichkab.). – Pietà (retouched; London, F. Drey Coll.). – Church Father (Bayonne, Mus. Bonnat). – Madonna with SS. Sebastian, Francis, Dominic, and Agatha (Br. Mus.). – Hercules with the lion (Rotterdam, Mus. Boymans-Van Beuningen). *e. Other works*: *The Lamentation*, tapestry (Cologne, Coll. Neven-Dumont; variation, Cleve. Mus.). – *Alfraganus and Eremita*, woodcut illustration (Ferrara, 1493).

Selected works partly by Tura or of his school. a. Paintings: *Charity*, putti by Tura (Milan, Mus. Poldi Pezzoli). – Virtue (Hope ?), lower part of robes by Tura (Florence, Coll. Strozzi). – *Annunciation* (London, Nat. Gall.). – *Portrait of an Old Man* (Milan, Mus. Poldi Pezzoli). – *Pietà* (copy ?; Chicago, Art Inst.). – *Madonna with Sleeping Child* (formerly Rome, Coll. Paolini). *b. Decoration*: Painted box (Reggio Emilia, Mus. Civ.). *c. Drawings*: Christ Child blessing (copy ?; Br. Mus.). – Two standing men (Vienna, Albertina, Inv. No. 33).

STYLISTIC DEVELOPMENT. According to Vasari, Tura's teacher was the painter Galasso (possibly the same Galasso di Matteo Piva who appears in the testament of 1451). In the absence of any works securely attributed to Galasso, his influence on Cosmè cannot be estimated; but there are indications of other influences that may have contributed to the formation of his style. During his entire career Tura followed the approach of the school of Francesco Squarcione (see XII, col. 57). If, as seems probable, Cosmè went to Padua in 1453, he had ample opportunity to become acquainted with the principal masters of this

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

style in the Ovetari Chapel. Of these masters, Nicolò Pizzolo and Ansuino da Forlì seem closest to his art. About ten years later Tura worked in Ferrara with an older Squarcionesque master, Michele Pannonio (b. before 1400). Together they produced a cycle of paintings, of which Pannonio contributed the signed *Ceres* in Budapest (Mus. of Fine Arts), Tura the allegorical figure (Venus; PL. 201) in London. Since Tura had already been working in the Squarcionesque style, the contact with Pannonio merely strengthened this stylistic tendency.

Tura's testament of 1471 suggests that he had a close and lasting relationship with Venice. Could he have become familiar with the studio of Antonio Vivarini (q.v.), who was born about 1415? It is a fact that throughout his life Tura's style maintained a striking similarity to that of Antonio's younger brother, Bartolomeo. However that may be, Tura remained true from first to last to Squarcionesque mannerism to the extent of being considered its greatest representative. This mannerism — half late Gothic, half Renaissance — reached its most complete and most extreme expression in Tura's work, leading then directly to 16th-century mannerism. In his interpretation of this style Tura was more elegant, more skillful, more moving and expressive than the others who sought to follow the same path, including his contemporary and compatriot Marco Zoppo (b. 1433 in Cento), who painted in the same style but lacked Tura's imaginativeness and power of expression.

Other elements also entered into the development of Tura's style. Among these were the influence of artists from the northern countries (at that time numerous in Ferrara, the most prominent among them being Rogier van der Weyden, active 1449–50 in that city) and that of the Italian transition masters (Gentile da Fabriano, Pisanello, Jacopo Bellini, qq.v.). At the request of Duke Borso, Tura went to Brescia to study Gentile's paintings in a chapel there as inspiration for his own paintings for the chapel of Belriguardo Castle. Tura's *Portrait of a Young Prince of Este*, the earliest extant example of the artist's works, is clearly related to a contemporaneous series of Este portraits painted about 1450 by Pisanello (Louvre; Bergamo, Acc. Carrara), Rogier van der Weyden (Met. Mus.), and Giovanni da Oriolo (London, Nat. Gall.); portraits (now lost) by Mantegna and Jacopo Bellini also formed part of this series. Rogier van der Weyden's expressive Gothic style, Gentile's courtly style, and the naturalism of Pisanello and Jacopo Bellini undoubtedly all contributed to Tura's stylistic formation. A painting such as the *Charity* in Milan suggests that Tura was working with a master whose style was similar to Rogier's, while the *Madonna with Sleeping Child* in Venice seems to have been inspired directly by the Flemish master. The close relationship with the Ferrarese miniaturists, some of whom were of northern origin, would have offered an obvious channel for the reciprocal influence between Tura and the northern masters. It was not without reason that 18th-century Italian critics, for example C. Barotti (*Pitture e Scolture . . .*, Ferrara, 1770), called Tura the Dürer of Italy. That Mantegna's perspective constructions influenced Tura (although he was never a true perspectivist) is evident in his polyptychs (Roverella Altarpiece, altarpiece for the Church of S. Giacomo), whose conception shows borrowings from such works of Mantegna as the S. Zeno Altarpiece and the St. Luke Altarpiece in Milan (Brera). Further evidence is seen in Tura's work of about 1470: the "angular" style of his draperies of that period can be explained only by Mantegna's examples.

An attempt to reconstruct the development of Tura's style, in view of the broad similarity of his extant works, is extremely difficult and is possible only on a hypothetical basis. The dated or datable works are all from 1468–84, that is, 15 years out of a creative period that covers nearly 50 years. The works from this 15-year period nonetheless show a recognizable development, from which inferences can be drawn regarding the periods before 1468 and beyond 1484. Since there is evidence that Tura did very little work after 1484–85 (the latter date may be considered the effective end of his creative period), the greatest difficulties arise in the study of his earlier period. Most of Tura's extant works can be arranged in a convincing order of stylistic development that appears natural and consistent. But there remain other works whose fundamental characteristics and style identify them incontrovertibly as Tura's but which show slight nuances of difference from the usual lines of his work and lack unitary character. These works may be considered an expression of the artist's search for a personal style as yet not definitively formed. If it is considered further that certain traits of a somewhat older fashion appear in these works, there is justification for accepting them as early works of the artist, attributable to the decade before Belfiore — that is, to the years before Tura was officially recognized as the chief Ferrarese master, after which he would naturally have ceased to be subject to the influences of others and would instead have made his own influence felt.

The works of the early period (ca. 1450–60) tie in directly with the datable works of 1468–84 and form with them a smoothly progressing homogeneous series. The *Portrait of a Young Prince of Este* in New York is judged by its stylistic manner to be comparatively the most outdated, most self-conscious, and — with all its choice beauty — the most conventional of Tura's works, even though the Squarcionesque traits are already revealed in the accentuated elegance of manner and the fastidious expression. This tendency shows even more clearly in the two small paintings of St. John the Baptist and St. Peter in Philadelphia, which are strikingly reminiscent of Nicolò Pizzolo and which — strongly drawn, solidly modeled, and somewhat drily painted — unmistakably show Tura's well-known characteristic style. Two other small pictures that covertly follow the same Squarcionesque direction are the *Madonna with Zodiac Mandorla* in Rome and the newly discovered *St. George on Horseback* in the Asquith Collection, as well as two exceptionally fine and elegant pen drawings: the Mercury (Bayonne) and the Christ(?) at the Pillar formerly in Berlin.

All these tendencies culminate in the *Madonna with Sleeping Child* in Venice, which clearly shows the influence of the Flemish masters. To this stylistic period belong the *Charity* in the Museo Poldi Pezzoli — probably begun by a more Flemish-oriented artist and finished by Tura — and the allegorical figure of a Virtue (Hope?), also finished by Tura, in the Collezione Strozzi, Florence. These partial works of Tura as well as the drawing (unfortunately altered) of Vesta in the Albertina lead over into a new, independent, and completely consolidated period of Tura's style.

What may be called the early mature period in the development of Tura's style extends from about 1460 to 1471/1472. The works of this period that clearly precede the organ door for the Cathedral of Ferrara (before 1468/1469) — the altarpiece for S. Maria della Consolazione (Ferrara), the *Portrait of a Man* in Washington, the *Venus* in London, and the drawing of Charity in Berlin — show an unusually strong, expressive flexibility of interpretation that manifests itself especially in the folds of the garments. While the gestures, the expressions, and often also the posture and attitude of the figures have a rather fixed rigidity, an almost puppetlike stiffness, the garments, with their profuse, frothy, often almost turbulent folds, seem to be whipped by a tempest — a contrast that generates a powerful tension. Mood and expression have something demoniacal; the characters are of a highly expressive ugliness. The colors, dark but glowing, are brought into vibrant movement by a stormy glitter as well as by a fluid, almost sketchy characteristic brushstroke, especially in the predella paintings (now in Rome, Milan, and Venice) of the above-mentioned altarpiece. Tura had found his own style, a personal interpretation of the Squarcionesque manner, of which he displayed a sovereign mastery, cultivating it as an independent and self-sufficient means of expression, not merely for its pictorial value.

All these tendencies came together in the *St. George Slaying the Dragon* on the outer sides of the organ door, a work whose internal and external dynamics burst through the limits of the merely pictorial with eruptive vigor. The pictorial world here is not a closed realm; it exists as a transitional stage, a passage before and behind which the concrete reality moves on as though organically coherent with it. The powerful movement is encompassed not through compositional (that is, static) means but through its dynamics, through its sweeping, pulsing rhythm.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Although the *Annunciation* on the inner sides of the organ door is, in keeping with the theme, imbued with peace and tranquillity, Tura pursued this dynamic line further in a series of works chronologically closely associated with the organ door: the tondos of the St. Maurelius Altarpiece from S. Giorgio fuori le Mura and the small *Madonna in the Garden* in Washington. In the tondos Tura sought to bring the maximum of motion into harmony with the composition, tautening his brushstrokes and drawing together the principal lines (especially in the folds of the garments) in tension-laden straight horizontals and verticals. In the serene composition of the *Madonna in the Garden*, this principle leads to an almost wooden rigidity, which, however, instead of being "archaic," gives a feeling of antiquity and is quite charmingly decorative. This conscious leaning toward the decorative approach is readily explainable by Tura's involvement during that period with the commissions for large cyclic wall decorations: the library of the Pico Castle (1465–67), the Cappella Sacrati (1467–68), Palazzo Schifanoia (1469–71), and the chapel of Belriguardo (1469–72).

The "angular" style with the vertical and horizontal concentration of lines and the right-angled composition of figures, evident in the St. Maurelius Altarpiece and in the *Madonna in the Garden*, finds its most extreme and most pregnant expression in the Hall of the Months in the Palazzo Schifanoia, where it demonstrates its highly decorative value. The astronomical universe of paintings demanded by the program at Schifanoia gave Tura's genius the fullest opportunity for display. The gloomy atmosphere of the *September* expresses Tura's profound sensitivity as completely as does the allegorical figure in London or the *St. George Slaying the Dragon*.

A similar spirit pervades the works dating from about 1471/1472 to 1483, although Tura's brushwork shows slight but significant changes. The highlight of this later period of Tura's mature style is the Roverella Altarpiece from the Church of S. Giorgio, painted in 1474. The transition from the Schifanoia style to that of the great Roverella Altarpiece is marked by a series of smaller paintings such as the *St. John at Patmos* in Genoa, the *Crucifixion* in Cambridge, the *Pietà* in Venice, and the tondos in Cambridge, Boston, and New York, as well as by several drawings and the *Lamentation* tapestries in Cologne and Cleveland.

In this period Tura sought to replace his tempestuous, demoniacal movement with a tranquil, composed majesty penetrating his splendor and brilliance. The sharp, angular brushstrokes gave way to a flowing, gliding, wavelike line. The broad shapes became smooth, calm, and solidly worked out, and the folds of the robes are draped over them almost like garlands, with the effect of heavy undulations. Although the masculine saints of the Roverella Altarpiece and the nude Hercules in the drawing in Rotterdam show a Michelangelesque fullness of form, wherever the theme demands it Tura calls on his powerfully expressive pathos for support. In Passion scenes such as the *Lamentation* tapestries or the *Pietà* in Venice he again based his great strength of expression on the ugly and the deformed. The *Lamentation* of the lunette on the Roverella Altarpiece is completely different: full of gesture and movement, a scene from a religious drama — perhaps with a hint of the influence of the terra-cotta Depositions of Niccolò da Bari (dell'Arca) and Guido Mazzoni. Although the unusually homogeneous and symmetrical composition of the Roverella Altarpiece is somewhat conventional, still, in this period, in which Tura's art had achieved a maturity no longer troubled by difficulties and minor problems, he did not abandon his pronounced individualism and his propensity for the unusual and the extraordinary in expression. Characteristic of this approach is the small *St. John at Patmos*, an expression of that strange "pious irony" which is typical of his spiritual inclination. His coloring in this period, especially in the central panel of the Roverella Altarpiece, is luminous, almost gay; the mode of painting broad; the brushwork occasionally open, here and there with a plastic quality.

The terra-cotta *Pietà* (formerly Florence, Coll. Ventura), with its brilliantly dynamic composition, seems to be more of a sketch than a completely developed sculpture. (It is, the author believes, the only sculptured piece extant that can definitely be ascribed to Tura.)

Related to the large *St. Anthony* in Modena, of Tura's final period (ca. 1484–85), are eight smaller panels of single figures of saints, which are similar in form and format and which together with the *Pietà* in Vienna belonged to three similar polyptychs whose existence is documented by 18th-century witnesses. Also representative of this stylistic period are a drawing in the Uffizi (Apostle or Evangelist) and the woodcut of Alfraganus and Eremita, which was published in 1493 and is the modest, last known example of Tura's artistic activity. The transition from the Roverella Altarpiece to the *St. Anthony* is represented by the two fragments from the altarpiece for the Certosa (London and Milan). Tura's late period, in which the ultimate development of style as an independent tool of art reached its highest expression, can be considered "ornamental." Nature and interpretation are crystallized in a richly significant ornament abounding in nuances and full of tension. Here the characteristic example is the *St. James* in Caen, in which the folds of the robes are drawn together into a spiraling ornamentation that unmistakably displays the typical stylized form of a conch. The painting technique in this period is often of a glassy smoothness (*Madonna with Blessing Child* in Bergamo), yet from time to time very free, almost sketchy (panels from the Church of S. Luca in Borgo, in Berlin). An expression of consuming melancholy or esoteric rapture characterizes almost all the works of Tura's late period.

BIBLIOG. C. Cittadella, Cosimo Tura, Catalogo istorico de' pittori e scultori ferraresi, Ferrara, 1782–83, I, pp. 47 ff., II, p. 210, IV, p. 308; G. Baruffaldi, Vite de' pittori e scultori ferraresi, Ferrara, 1844–46, I, pp. 63–85; L. N. Cittadella, Ricordi e documenti intorno alla vita di Cosimo Tura, Ferrara, 1866; G. Campori, L'arazzeria estense, Modena, 1876; A. Venturi, L'arte nel periodo di Borso d'Este, Riv. Storica It., II, IV, 1885, p. 714 f.; G. Campori, I pittori degli Estensi, Modena, 1886; F. von Harck, Verzeichnis der Werke des Cosma Tura, JhbPreussKSamml, IX, 1888, pp. 34–40; A. Venturi, Cosma Tura genannt Cosmè, JhbPreussKSamml, IX, 1888, pp. 3–33; Venturi, VII, part 3 (with bibliog.); G. Gruyer, Cosimo Tura, L'Art, LIII, 1892, pp. 141–48, 173–79; G. van Oettingen, ed., Filarete, Tractat über die Baukunst, Vienna, 1896; B. Berenson, North Italian Painters of the Renaissance, New York, London, 1907, pp. 55–60, 297; G. Gombosi, ThB, s.v.; O. Härtzsch, Katalog der echten und fälschlich zugeschriebenen Werke des Cosimo Tura, Hamburg, 1931 (thesis); N. Barbantini, Catalogo della Esposizione della pittura ferrarese del Rinascimento, Ferrara, 1933, pp. 44–63; R. Longhi, Officina ferrarese, Rome, 1934, pp. 33–41, 203 ff. (enlarged ed., Florence, 1956); Venturi, EI, s.v.; O. Härtzsch, Cosimo Tura, Pantheon, XXVI, 1940, pp. 153–61; S. Ortolani, Cosmè Tura, Francesco del Cossa, Ercole de Roberti, Milan, 1941; B. Nicolson, The Painters of Ferrara, London, 1951, pp. 9–12, 18; B. Berenson, Italian Painters of the Renaissance, 2d ed., London, 1952; A. Neppi, Cosmè Tura, Milan, 1952; C. Padovani, La critica d'arte e la pittura ferrarese, Rovigo, 1954 (full bibliog.); M. Salmi, Cosmè Tura, Milan, 1957; E. Ruhmer, Cosimo Tura, Paintings and Drawings, London, 1958 (full bibliog.); E. Ruhmer, Zur plastischen Tätigkeit des Cosimo Tura, Pantheon, 1960, pp. 149–53; P. Bianconi, Cosmè Tura, Milan, 1963.

Eberhard RUHMER

Illustrations: PLS. 201–208.

TURFAN. Although the region of Turfan, rich in monumental centers and vast monastic complexes, is an integral part of Central Asia (see ASIA, CENTRAL, cols. 834–837), it nevertheless presents some aspects that noticeably characterize it in the artistic development, fundamentally unitary, of that area. Several religious currents coexisted here, from Buddhism (q.v.) to Manichaeanism (see MANICHAEAN ART) and Nestorianism (see NESTORIAN ART), from which derive considerably different, though related, iconographies and styles. The Islamization of the region, which took place without the harsh intransigence found elsewhere, did not exclude the survival and prolongation of heterodox artistic activities side by side with Islamic ones and later favored the preservation of the monuments and works related to other religions. The stylistic development, conditioned both by the nearness of the Chinese world and by the contribution of the Turkic peoples (see TURKIC ART), who made this region their principal cultural center at the time of the Uigurs, is also differentiated from the remaining territory of Central Asia, although it remained bound to the trends that followed and interpenetrated one another in all of Central Asia. Direct and indirect relations with Sogdiana (q.v.) and with Iran

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

(see SASSANIAN ART) increased the variety of the local production, constituting, in a certain sense, a historicoartistic problem.

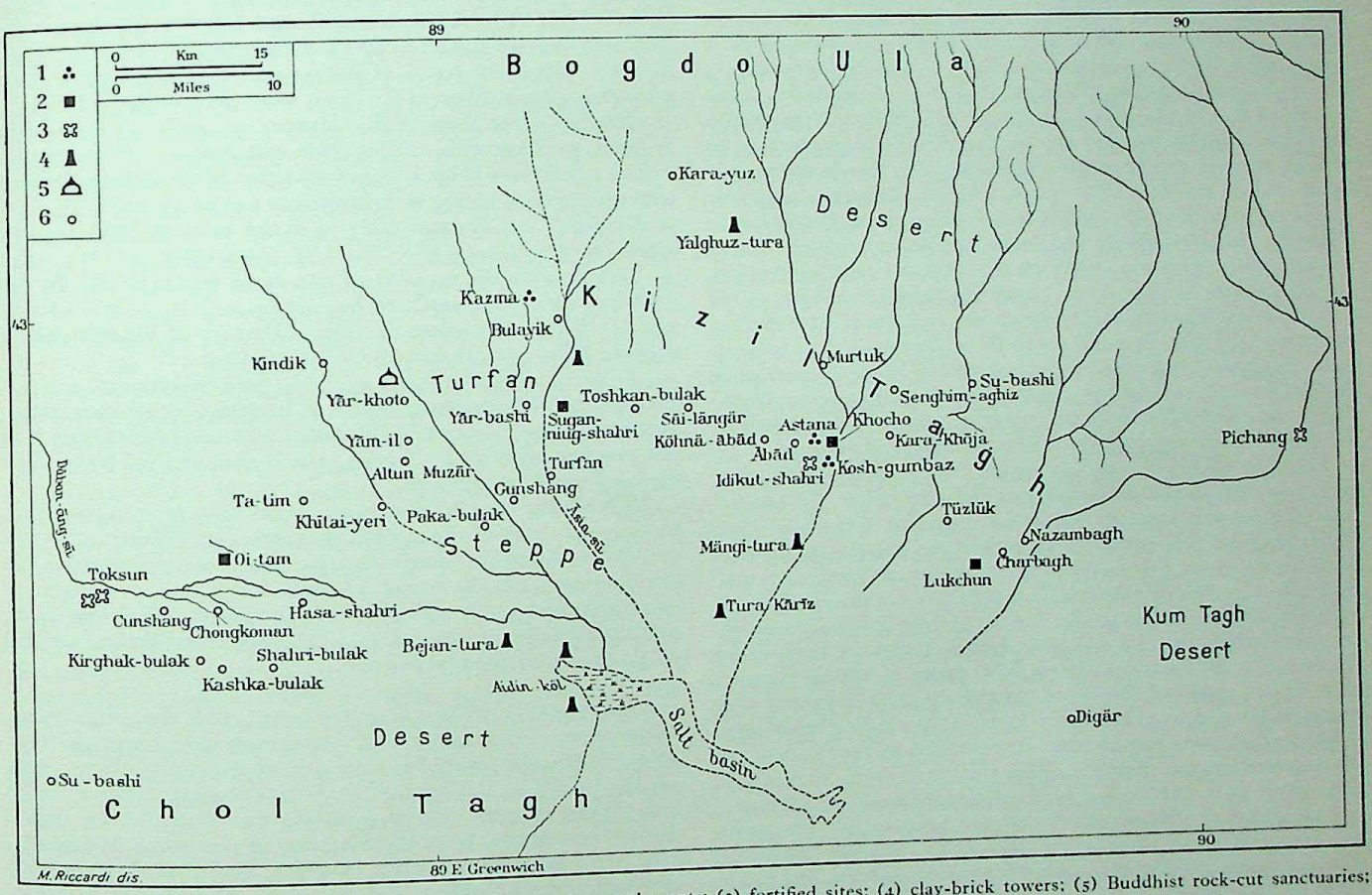
SUMMARY. Historical background (col. 345): *Stylistic development.* Sites (col. 348): *The monastic cities*; *The royal cities.*

HISTORICAL BACKGROUND. The oasis of Turfan, whose modern name dates from relatively recent times (ca. 15th cent.), was originally part of a region known to the Chinese, from about the beginning of the Christian Era, as Ku-chih, or Chü-shih; it constituted a small kingdom with two royal residences situated north and south of the easternmost part of the T'ien-shan (Celestial Mountains), known, from west to east, as Bogdo Ula and Edemek-daban. The kingdom was conquered in 60 B.C. by General Cheng Ki and was partitioned into eight principalities: the two in the south made up Inner Ku-chih and the six remaining ones formed Outer Ku-chih.

In the course of the following centuries the Ku-chih territory was alternately unified and divided several times and was given various names, according to whether the areas belonged to China or dynasties under its dominion or to the nomadic peoples of Central Asia. The name of Kao-ch'ang appeared as early as the Han period, when Kao-ch'ang-pi designated a Chinese military colony that already existed by 59 B.C. and was reorganized in 48 B.C. In A.D. 327 Kao-ch'ang became the seat of a military garrison; and in the middle of the 5th century, when Inner Ku-chih became independent, Kao-ch'ang became the region's capital. The K'iu dynasty transferred the capital (ca. 497) to Yār-khoto, where it remained after the conquest by the T'ang dynasty in 640. At that time Yār-khoto became also the seat of Ngan-si Tu-hu ("The Protectorate General for the Pacification of the West") and of the civil administration of Si-chou ("The District of the West"); shortly afterward these administrations were transferred, most likely in 651 or 567, to "the former country of Kao-ch'ang," probably to Khocho, near present-day Kara-khōja. In 658 Ngan-si Tu-hu was moved to Kucha, while the civil administration of Si-chou remained at Khocho, which was conquered (ca. 790) by the Tibetans. After the dissolution of the Uigur empire (840–43) a Uigur kingdom was established in the region, with a southern capital at Khocho and a northern one at Besh-balik (Pei-t'ing), northeast of Urumchi. Being a vassal state of the empire of the Kara-khītai in the 12th century, the Uigur kingdom submitted to Genghis Khan (see MONGOLIAN ART). Toward 1400 Khocho was replaced by Turfan, the capital of the Uigur ruler then being in Idikut-shahri.

At the beginning of our era the population of the region of Turfan spoke the same language as that of Karashahr (Qara Shahr). With the growth of the Chinese population, the Chinese language tended to play an increasingly important role. However, other languages were spoken, such as Kuchan, or Kuchean, and even the Tumshuk dialect, which was employed in a number of documents found in Murtuk. From the 5th to the 7th century the Turfan area was under the rule of a house of Altaic origin, which suggests the presence of other linguistic influences coming from the region of the steppe (see STEPPE CULTURES); however, the sovereigns of this dynasty were eventually Sinicized. Later evidence points to a real Turkic influence, shown by documents of the end of the 6th century, during the T'u-chüeh dynasty. With the Chinese conquest in 640, the Chinese language and civilization were solidly established; the Tibetan occupation left few traces.

Buddhism had penetrated at an early date, perhaps in the 4th or 5th century. With the establishment of Uigur rule in 843, the influence of this people grew so strong that in the second half of the 9th century the Uigur language dominated; at the same time Tantric Buddhism, introduced partly by the Tibetans, throve, and other religious communities came into existence — Nestorian and Manichaean, traces of which have been found in literature and art (IX, PLS. 281, 282, 284, 287),



Principal centers in the Turfan area. *Key*: (1) Ruins; (2) ancient settlements; (3) fortified sites; (4) clay-brick towers; (5) Buddhist rock-cut sanctuaries; (6) present-day villages.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and possibly Mazdean. Islam was also to penetrate the region and achieve a dominant position after the waning of Uigur power. Under Mongol rule Buddhism and Nestorianism persisted, but during the 15th century, when Khocho and Idikut-shahri lost their importance and when the Uigurs were supplanted by other Turkic peoples, Islam spread and caused their almost total disappearance. During this period Buddhism and Nestorianism were reduced to mere surviving remnants, although the diplomatic mission of Shah Rukh referred, in 1420, to the existence of numerous unbelievers who had "large houses with idols." With the disappearance, or at any rate the almost complete expulsion, of Buddhism, art ceased to be produced in the region of Turfan, as it had earlier in the towns of western Serindia.

Stylistic development. If the purely Chinese pieces are excluded, the sculpture that has survived in the different sites of the Turfan region and in particular at Khocho shows a clear relationship with the numerous pieces found farther west in the areas of Karashahr, Kucha, and even Tumshuk. As a matter of fact, the heads of devatas (I, PL. 476) from Temples A and B at Khocho are very similar to others brought to light at Tokuz-saray in the latest structures, both in the facial expressions and in the hair styles. Stein found sculpture fragments at Hasa-shahri and Yār-khoto and at other sites (Sasik-bulak, Murtuk, etc.) in which successive styles are found — from pieces whose execution shows clear influences relating them to trends initially coming from Gandhara (q.v.) to others whose Tantric and Chinese influences indicate the late period of their execution. In fact, in addition to these fragments which show such disparate influences, there are traces of a regional style that underwent certain transformations after the arrival of the Uigurs in the Turfan region; this style takes on the aspect of a composite art varying according to sites and periods.

Painting is much more abundantly represented in Turfan, as is indicated in the description of the sites below. "Western" (i.e., Indian and Iranian) influences appeared there according to the religious tendencies of the period and mingled with those which came from Tibet (see TIBET; TIBETAN ART) and above all from China, certainly through Tun-huang (q.v.); these influences likewise vary according to the periods and the sites. The paintings of Murtuk and Toyuk show obvious "western" influences: for example, at Toyuk the frieze with boars' heads corresponds to a similar motif of Sassanian inspiration (see SASSANIAN ART) found at Bamian. On the other hand, at Bezeklik Sino-Tantric influences, characterized by the exacerbation of the features and of the musculature, predominated (PLS. 212, 213; I, PLS. 485, 488, 489). In other sites, such as Senghim-aghiz, are found combinations of Chinese and "western" tendencies. The paintings from Khocho often show Indian and Iranian influences — chiaroscuro effects and intensification of certain features to lend relief — which may have resulted from the presence of Manichaeanism and Nestorianism there (PL. 211; I, PL. 486; IX, PLS. 283, 285; X, PLS. 308, 309).

Painting at Turfan presents several phases during which certain influences related to the dominant political situation were prevalent. The first phase, marked by "western" influences that came to Turfan through the cities of the Tarim Basin, extended up to the Chinese conquest and occupation in the T'ang period (7th–8th cent.). The duration of the second phase, during which Chinese influences appeared, has not been clearly determined, but it seems to have lasted until 843, when the Uigurs settled in the region of Turfan (PLS. 209, 215). There followed a "western" reaction so great that the Uigurs remained adepts of Manichaeanism; this third phase seems to have been relatively short, extending perhaps to the end of the 9th century (PL. 210), but it may have already begun before the Uigur occupation. Lastly, during the fourth phase, from about the 10th century to the 11th and perhaps later, Chinese and Tantric influences became predominant (PL. 214); during this period, depending on the geographic location of the different sites, either the usual Uigur style or the Tantric style that can be described as Lamaic is evident in the art of Turfan. This fourth period witnessed the beginning of a decline that was to last up to the Moslem domination in the 15th century, when sculpture and painting virtually disappeared.

Architecture was the only art form to survive after the 15th century, but before that period it gave rise to the structures preserved at Khocho and Yār-khoto, in which are found all the tendencies, connected with the nature of the materials utilized, that met at an early period in the Tarim Basin and in which forms coming from Iran and India became established: certain structures, such as the stupas of Yār-khoto and Khocho, seem to have reflected late influences that came from India through Tibet or from Tibet itself.

SITES. The Turfan region comprises a complex ensemble of cities of various dates extending over at least a thousand years. It includes the ruins of the former capitals of the territory known as Ku-chih during the Middle Ages: Yār-khoto, Idikut-shahri ("The City of the Idikut"), and Khocho, built over the dead city of Kao-ch'ang, which flourished during the T'ang dynasty. The cemeteries of Astana and Kosh-gumbaz (Qosh-gumbaz), almost entirely Chinese, were part of Kao-ch'ang.

In addition to these earlier complexes, there are a number of sites with remains of Buddhist installations. A few miles northeast of Kara-khōja is Senghim-aghiz, with monasteries and sanctuaries constructed in brick or cut out of the rock. Nearby is Bezeklik, and farther north are the sites of Murtuk and Chikkan-köl (Čiqqan-köl). East of Kara-khōja are the ruins of Toyuk, with the remains of two large monasteries. In the midst of the desert south of Kara-khōja are the ruins of Hasa-shahri. North of modern Turfan is the site of Bulayik, where a great many manuscripts have been found.

There are also the ruins of Sirkip-tura, southwest of Kara-khōja; the poorly preserved ruins of Lamjin, east of Kara-khōja; and finally, the ruins of Tallik-bulak and Sasik-bulak, north of the present-day town of Turfan, which were studied by Russian archaeologists in 1909–10.

Among the sites in the region of Turfan, it is necessary to distinguish those of the ancient monastic establishments, by far the richest in artistic manifestations, and those representing the ancient cities which served as capitals for the sovereigns of the region and which also included sanctuaries. These monastic establishments and sanctuaries have been the principal objects of the research done at Turfan.

The monastic cities. Senghim-aghiz, like the other sites, offers several particularly interesting monasteries and brick or rock-cut sanctuaries on the west side of the ravine (I, PL. 490); on the height of the opposite bank are stupas, some of which rise on the extreme edge dominating the course of the water. It may be inferred, from the discovery of numerous documents, that these monuments, some of which are fortified, were built between the 8th century and the 11th. Monasteries 7 and 9, from the description by S. Oldenburg (1914), form a large, almost square quadrangle; they are furnished at the corners with constructions which originally may have been part of the encircling wall but which underwent transformations to adapt them to new needs. These monasteries comprise a principal sanctuary with a cella and an ambulatory opening onto a vast court facing the central entrance; on either side rose symmetrical buildings contiguous to the enclosure wall. This plan is related to that of the monasteries at Gandhara (q.v.); the sanctuary of Tokuz-saray in Tumshuk shows how this type of construction reached the Turfan region. In this monastery and in several monuments the remains of rich painted decoration were discovered.

Bezeklik and its satellite, Murtuk, together with the region of Kucha (q.v.), make up the largest religious complex of Serindia. Bezeklik, established in a gorge of the Kizil Tagh, south of the village of Murtuk, includes both architectural structures and rock-cut sanctuaries. The rock-cut sanctuaries, some of which were given a constructed part in order to provide a façade, are generally isolated, but some of them form complexes, particularly a large monastery with residence rooms, cells, and assembly rooms. Among the architectural structures are found some square cellas with domed roofs, such as the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

small Sanctuaries 3 and 4. Most of the other rock-cut sanctuaries have barrel vaulting; only Temples 1 and 8 are provided with ambulatories.

The sanctuaries were divided by A. Grünwedel (1906) into three groups; this division underwent some modifications after its study by Joseph Hackin (1931). The oldest group comprises the painted decoration that has survived in the transverse corridor of Cave 8, in the cave disposed behind Foundation 9, and in Temple 3 and Caves 27 and 29; all these paintings are evidence of an early Buddhist occupation and may be considered as T'ang paintings of the 7th and 8th centuries. The second group, dating from the 9th century and a little later, includes abundant foundations that have preserved paintings of the usual Uigur style. The third group, whose decoration dates from the 9th to the 11th century and perhaps a little later, includes a small number of sanctuaries (nos. 11, 28, 30, 31, 32, and 33); the paintings, which express a pronounced Tantric influence and may be considered of Lamaic origin (PL. 214), show how strong the Chinese influence was in the region of Turfan, but with some "western" influences that arrived there through Kucha and probably with some Tibetan influences effected by Tun-huang (q.v.), which served as a link with China and Tibet from the point of view of Tantrism.

About 3 miles from Bezeklik, at the foot of the hills that border the valley of Murtuk at the south and southwest, a group of five sanctuaries was cut into the rock; facing these sanctuaries rise the ruins of several buildings constructed in brick. The painted decoration of the first sanctuary has completely disappeared and the second has preserved only vestiges of paintings, for example, a circular medallion with stylized lotus petals around the edges. Sanctuary 3, the most important, has barrel vaults and an ambulatory; it has preserved part of its painted decoration, which, unlike that of Bezeklik, shows that the "western" influences had resisted the pressure of those of China.

Six miles from Murtuk, other ancient sanctuaries were discovered at Chikkan-köl (Čiqqan-köl), a place situated between Bezeklik and the upper part of the gorge of Senghim, west of a series of heights. The complex at Chikkan-köl consists of several rock-cut sanctuaries in a gorge near a large lake and Buddhist structures (in ruins) located on the edges of the lake and on an island. The finds that were made in the buildings had suffered from the humidity; those in the rock-cut sanctuaries consisted essentially of wall paintings, which, although very damaged, show that they were executed in about the 7th century and painted in the style of those at Toyuk, thus constituting one of the most ancient examples of painting in the Turfan region. Examination of the rock-cut sanctuaries led to the discovery of a coffered, or lantern, ceiling cut into the rock as at Kizil and painted as at Bamian and in Kashmir.

The site of Toyuk (PL. 216) is one of the large complexes of the Turfan region. Among the constructions on either side of the gorge, a large monastery (designated by Grünwedel by the name of Great Temple-Terrace L) and a series of rock-cut sanctuaries (the most important of which are called Klementz Foundation 6, Cave of Mucilinda, and Cave of the Ascetics) constitute the most remarkable elements. The Great Temple, constructed breadthwise because of its position against the mountain, is a sanctuary enclosing a stupa with symmetrical cells of the same dimensions on each side; two constructions, probably cellas, stood in front of the sanctuary. The Klementz Foundation 6 consists of a rock-cut sanctuary with an ambulatory around a rock mass with an altar on the front. The Cave of Mucilinda has a vestibule that gives access to a cella provided with an ambulatory. Lastly, the Cave of the Ascetics is a complex ensemble including a vast vestibule giving access to three cellas: one facing the entrance; a second to the left of the entrance provided with an ambulatory; and a third on the right, with a smaller cella at the end and two small symmetrical cellas on either side. A fourth sanctuary, Cave 38 (D. von Klementz, 1899), whose remaining decoration is particularly important, should be mentioned. In addition, traces of stucco images have been discovered by Aurel Stein, including some fragments of reliefs representing small heads, death's-heads, remains of monsters, etc.

In the same area east of Kara-khōja, two other sites of lesser importance contain ruins of Buddhist establishments, northeast of the Lukchun complex. The first, situated in the area south of the Kizil Tagh and known by the name of Lamjin, is located in the gorge of the same name and consists of poorly preserved ruins. The finds here include scenes of the life of the Buddha, cut in a stone that undoubtedly broke off from the rock wall; originally they were probably surmounted by a wooden protecting roof, as is evidenced by the holes made in the stone above the scenes. The second site is located at the foot of the Kizil Tagh, at Sirkip-tura, and consists of a tower on a square plan, with recessed stories (six stories remain) that have exterior niches formed by horseshoe-shaped arcading in the upper part; these niches contained images, probably painted red, of the Buddha seated in meditation. This tower, certainly a stupa, shows great similarity to that of Tai-san, at Astana, and that known as At-hayashi, at Idikut-shahri.

About 6 miles south of Kara-khōja, two monastic establishments, Chong-hasar-shahri and Kichik-hasar-shahri, were discovered in the sand by Von Le Coq; only the second was examined. It consists of an Indian-type stupa and constructions covered with an Iranian-type dome, all surrounded by fragments of an enclosure wall. Apparently no remains of decoration were discovered there.

Other sites containing ruined monuments of various origins are to be found more to the west, north of the present-day city of Turfan, not far from the ancient capital of Yār-khoto; they constitute the counterpart of the complex of similar monuments grouped around Khocho and Idikut-shahri. Several groups of monuments were discovered in the area of Chui-pang: one at Bulayik, at the base of the foothills of Bogdo Ula, and in the same area Tallik-bulak and Sasik-bulak, to which must be added Kurutka. The constructions at Bulayik, today in an extremely ruined state, must have been part of a Christian establishment, perhaps a monastery, since a large number of manuscripts of Christian origin were found there. The other three sites are of Buddhist origin and are better preserved. Tallik-bulak includes architectural constructions and rock-cut sanctuaries; the latter are located in a gorge descending from Bogdo Ula. The most important cave is the one called the Cave of the 84 Sages, whose painted decoration has been studied by Grünwedel and Oldenburg; the cave included a pillar left in the process of cutting (which, opposite the entrance, serves as a stupa) and an ambulatory. The walls of the cave were decorated on the upper part with scenes depicting Siddhas (Sages) and a certain number of Tantric representations of clearly Tibetan origin. Sasik-bulak offers a series of rock-cut sanctuaries whose painted decoration is less well preserved; certain paintings there reflect the influence of Kizil and, consequently, of Bamian, although others show clear Lamaic influence (Cave 4) or Chinese influence (Cave 5). Lastly, the site of Kurutka, also situated in a gorge, is remarkable for a domed construction.

The royal cities. Of the two ancient royal cities that were the seats of the southern principality of the region of Turfan, Yār-khoto is the older. Situated west of the present-day city of Turfan, the very damaged ruins still offer grandiose remains; streets can be distinguished, and the purpose of some of its more resistant structures can still be determined. According to the plan drawn up under the direction of Oldenburg, the city describes a square enclosure, two corners of which are oriented in a north–south direction. Inside the encircling wall are four districts arranged in squares and divided by four streets that intersect symmetrically, giving 25 blocks of constructions regularly arranged. The center of the city is occupied by a stupa raised on a square platform with a stairway facing the avenue running northwest and the entrance to the city. The stupa consists of a high central tower around which are arranged four towers on the angles of the square. There is no record of painted decoration having been found in this monument or in the other constructions of the city, which were probably ancient palaces, small monasteries, or sanctuaries; one of the sanctuaries contains a building with niches that is similar to

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the stupas of Sirkip and Astana. Some Buddhist banners were found. Not far from the city, in a hillside, are several rock-cut sanctuaries; although no precise description has been given of any painted decoration here, Aurel Stein discovered some fragments of stucco reliefs and of wall paintings.

Khocho, the ancient capital of the east, known at different times as Kao-ch'ang, Idikut-shahri, and Kara-khōja (although at present Khocho and Idikut-shahri are used for separate sites and Kara-khōja is the modern village; see FIG. 345), offers a large complex of monuments in ruins surrounded by a fortified enclosure of almost square plan with several fortified gates. Its street plan is difficult to determine; its many structures, which German archaeologists have designated by letters, include buildings of every kind — temples, palaces, and other civil buildings.

In addition to constructions of Manichaean or Christian origin, a fairly large number of Buddhist sanctuaries and monasteries are of considerable interest as much for their arrangement and their architectural layout as for the decoration still to be found in them.

The sanctuaries of the simplest type are composed of an enclosure provided with a sort of antechamber and containing, as a rule, a stupa with an ambulatory. Among these may be cited Temple A, which is located in the northern part of the center of the city and whose walls in certain places are still over 16 ft. high. These walls form a long rectangle divided into two parts, one undoubtedly constituting a sort of antechamber that led into a large hall; in the interior of this hall the base of a stupa resting on a low platform was found. At each side of the base of the stupa are three pedestals that supported statues (undoubtedly representing the Buddha) seated on thrones with painted and partly gilded reliefs, fragments of which were found among the debris.

Temple C, constructed on a platform and surrounded by walls originally nearly 20 ft. high, belongs in the same category. The rectangular enclosure (approx. 98 by 59 ft.) opened toward the south and was preceded by a kind of antechamber about 26 ft. wide. The temple itself consists of a large hall containing a 26-ft. platform at the rear; on this platform are the remains of a base surrounded by a wall forming, with the back wall of the hall, an ambulatory on the four sides. Remains of painted and sculptured decoration were found at various points.

Other temples of a related type were found, such as Temple I and I′, which are located northeast of the central part of the city; the latter contained numerous traces of sculpture and mural painting. Temple W, almost in the center of the enclosure, is of the rectangular type and, constructed on a platform over 3 ft. high, contains a sort of pillar with pedestals on each side, on one of which was a statue. Temple V, located beside the northeast wall of the city, consisted of a cella opening onto a court and surrounded by a wall forming an ambulatory with a vault about 5½ ft. wide. The vault was decorated with paintings representing Buddhas in rows, while the walls were decorated with Buddhist scenes; a base, on which was the image of a recumbent Buddha, extended the whole width of the back wall of the cella. Temple X, situated south of the central part of the city, was square and contained a central pillar surrounded by an ambulatory; this pillar too was decorated with statues whose remains have been found.

All the sanctuaries of this type were of a relatively simple plan. Others, of a type apparently not to be found in other areas of Central Asia (see ASIA, CENTRAL), offer a much more complex architecture. Temple B, situated between Temples A and C, appears as an irregular platform that included a central terrace with other terraces at its four corners, the walls surrounding the central complex thus being roughly cross-shaped — a form perhaps recalling the central stupa of Yār-khoto. Temple P, in the northwestern part of the city, is particularly remarkable: similar in appearance to Temple B but with an extremely complicated development of the original plan, it is delimited by an almost square enclosure wall and comprises constructions grouped in four squares symmetrically arranged in relation to the four corners of a central square monument, of the same type as the stupa of Yār-khoto. The central monument is raised on a platform 52 ft. square and 14 ft. high, at the center of which is a tower 12 ft. square; at the four corners of this tower, certainly the highest, are four lower towers of the same square plan. The central platform is framed at each corner by a monumental complex of small towers arranged in a square, each of these four squares comprising 25 towers of the same type arranged in rows of five. The whole rested on a terrace (208 by 188 ft.) encircled by a low wall, so that the complex is visible from outside.

Temple Z, situated in the southeast corner of the city, comprised a long barrel-vaulted hall, behind which rose a high, storied tower. The hall, forming a rectangle, opened by a door on the middle of one of the long sides and was decorated, on the side facing the door, with five pedestals bearing enthroned Buddhas; on each side of the thrones were paintings representing flying devatas; the clouds constituting the background seem to have been drawn in the Chinese style. Facing these statues, on the walls at each side of the entrance, were painted Buddhas corresponding to those of the back wall. The east and west walls were decorated with paintings arranged in rows and representing the life of the Buddha, now more or less destroyed. Behind this hall arose the storied tower, a pyramidal structure with projections in the direction of the cardinal points from which small windows opened.

Temple Y, in the eastern part of the city, also offers an interesting plan; it preserves parts of a storied pyramidal structure with niches. The pyramid, on a quadrangular platform (about 82 by 65 ft.) whose south and west sides have been preserved, is formed of three superimposed terraces whose approximate dimensions are respectively 52 by 49 by 9 ft., 44 by 41 by 7 ft., and 36 by 33 by 5 ft. On the uppermost terrace are remains of a stupa, or another terrace, about 26 ft. square. Each terrace included a series of niches on each side: eight for the first, six for the other two stories, and one on each side of the uppermost part — in all, 84 niches. These niches contained images of the Buddha and painted decoration, especially ornamented aureoles in several colors. The access to the temple is at the north of the quadrangular platform. From a small platform (about 5 ft. high) a stairway led to the third terrace and undoubtedly ended at the stupa; lateral stairways permitted access from the main stairway to the first terrace, but no trace of a stairway of this kind remains on the second terrace. On the uppermost terrace an opening leads into a cave situated at a lower level.

Mention should also be made of the groups of monuments designated by the references α, β, and γ, which are noteworthy not only for their architecture but also for the remains of painted and sculptured decoration. Group α offers a complex ensemble of buildings, some of which had been constructed, or occupied during a certain period, by the Manichaeans, while others had been occupied by Buddhists. Group α, situated southwest of the city and enclosed by a double row of walls, seems to have had an approximately square plan; in the enclosure is the base of a stupa or of a pillar, behind which is a hall with a cella. South of these two structures is a corridor leading toward a stairway; the corridor separates the stupa and the hall from other buildings, two of which were undoubtedly a principal and a secondary entrance. Other structures, not clearly identifiable, are east of these entrances, while east of the cella rises a structure, probably another entry hall, with another hall north of it. The cella and the corridor, which formed an ambulatory, were decorated with wall paintings in which the Chinese influence is clear. Under the entrance nearest the cella were discovered fragments of statues, perhaps representations of lokapalas.

Group β, situated not far from α but more to the west, occupies a rectangle over 650 ft. long and 325 ft. wide; it is oriented toward the east and has preserved parts of its surrounding walls, which seem originally to have had towers at the corners (the two on the south side are preserved; those on the north were undoubtedly replaced by other buildings). Within the walls are several complexes of buildings. The complex at the back of the enclosure consists of narrow barrel-vaulted rooms on three sides, most of them divided in two and opening onto an interior court containing several structures; these in-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

clude an enormous pillar (still about 45 ft. high in the best-preserved part) surrounded by a crenelated wall (about 39 ft. high) that forms an ambulatory reached through a vast entry hall (in ruins), preceded by a sort of terrace. In front of this complex are two square, domed halls and some cells. The complex of buildings (Complex E) that constituted the north side of the façade includes a central hall with an ambulatory and other rooms whose use has not been clearly ascertained. Traces of painted decoration remained in the complexes of Group β, including aureoles in the niches of the large pillar (which had enclosed statues of the Buddha) and the decoration of a plinth course in one of the halls. Other paintings, badly damaged but extremely beautiful, were also found, especially on the lower parts of the walls of the ambulatory of Complex E.

Group γ, located at about the same distance from the west enclosure wall but at the height of the center of the city, forms a vast rectangle including a main court that opens onto a second, slightly smaller one. Toward the back of this second court, reached through a door of which the centering remains, rises a high pillar on a square base. Numerous sculptured fragments of Buddhas or bodhisattvas were found in the debris, and the base bore paintings representing rows of delicately executed small Buddhas.

To this long list must be added one last monument located in the enclosure of Khocho: Ruin E, situated almost in the center of the city, which could have been the palace of the Uigur rulers. This ruin, whose plan cannot be accurately determined, is formed of a series of structures within an enclosure, including a double tower, still fairly well preserved and surrounded by debris, and an ancient gateway, with the side walls decorated with paintings.

Some other important structures should also be noted — among them several temples — situated on the opposite bank of the river, outside the enclosure of Khocho. Two of the temples are especially interesting, Temples Б and Ц, whose Russian designation has been preserved by Grünwedel. Not far from them are two groups of stupas: the so-called "Small Stupa Group" and "Large Stupa Group," which may have been tombs (*gumbaz*).

BIBLIOG. G. E. Grum-Gržimajlo, Opisanie puteśestvija v zapadny Kitaj (Description of a Journey to West China), 4 vols., St. Petersburg, 1896–1908; D. von Klementz, Turfān und seine Altertümer, Nachrichten über die von der Kaiserlichen Akademie der Wissenschaften zu St.-Peterburg im Jahre 1898 ausgerüstete Expedition nach Turfān, St. Petersburg, 1899, pp. 1–53; A. Grünwedel, Bericht über archäologische Arbeiten in Idikutschari und Umgebung im Winter 1902–1903, AbhAkMünchen, I Klasse, XXXIV, v, I. Abteilung, 1906, pp. 1–196; A. von Le Coq, A Short Account of the Origin, Journey, and Results of the First Royal Prussian (Second German) Expedition to Turfan in Chinese Turkistan, JRAS, LXXXVI, 1909, pp. 299–322; A. von Le Coq, Exploration archéologique à Tourfan, Annales du Musée Guimet, Bibliothèque de vulgarisation, XXXV, 1910, pp. 267–89; A. Grünwedel, Altbuddhistische Kultstatten in Chinesisch Turkistan, Berlin, 1912; A. Stein, Ruins of Desert Cathay, 2 vols., London, 1912; A. von Le Coq, Chotscho: Königlich-Preussische Turfān-Expedition, Berlin, 1913; E. Huber, Les fresques inscrites de Turfan, BEFEO, XIV, 1914, pp. 9–14; S. Oldenburg, Russkaja turkestanskaja ekspedicija 1909–10 goda (The Russian Expedition to Turkistan in 1909–10), St. Petersburg, 1914, pp. 22–81; A. von Le Coq, Die vierte deutsche Turfān-Expedition, Türān, 1918, pp. 337–45; A. Stein, Serindia, 5 vols., London, 1921; A. von Le Coq and E. Waldschmidt, Die buddhistische Spätantike in Mittelasien, 7 vols., Berlin, 1922–23; E. Waldschmidt, Gandhāra, Kutscha, Turfān: Eine Einführung in die Frühmittelalterliche Kunst Zentralasiens, Leipzig, 1925; G. Karo, Die Kunst von Ost-Turkistan, ZMG, LXXIX, 1925, pp. 136–49; A. von Le Coq, Auf Hellas Spuren in Ostturkistan: Berichte und Abenteuer der II. und III. deutschen Turfān-Expedition, Leipzig, 1926; W. Fuchs, Das Turfangebiet, OAZ, N. S., III, 1927–28, pp. 124–66; A. von Le Coq, Von Land und Leuten in Ostturkistan: Berichte und Abenteuer der IV. deutschen Turfān-Expedition, Leipzig, 1928; A. Stein, Innermost Asia, Vol. II, Oxford, 1928, pp. 556–641; J. Hackin, Recherches archéologiques en Asie centrale (1931), RAA, IX, 1935, pp. 124–93, X, 1936, pp. 65–72; N. Kumagaya, Wall-Paintings brought from . . . Bäzäklik, Bijutsu Kenkyū, 122, 1942, pp. 22–30, 126, 1942, pp. 9–16, 138, 1944, pp. 1–10, 156, 1950, pp. 16–30, 170, 1953, pp. 16–22, 178, 1954; H. Härtel, Zwei unveröffentliche Bruckstücke aus Turfān-Fresken, BA, N.S., III, 1955, pp. 169–74; H. Härtel, Uber das Schicksal des Turfansammlungen, Orientalische Literaturzeitung, LII, 1957, cols., 5–12; H. Härtel, Turfān und Gandhāra, Frühmittelalterliche Kunst Zentralasiens (cat.), Berlin, 1957; A. von Gabain, Das uigurische Königreich von Chotscho, 950–1250, Sitzungsberichte der Deutschen Akademie der Wissenschaften zu Berlin, 1961, n. 5; M. Bussagli, La peinture d'Asie centrale, Geneva, 1963, pp. 95–113.

Louis HAMBIS

Illustrations: PLS. 209–216; 1 fig in text.

TURKEY. The territory of present-day Turkey, a republic since 1923, comprises the central part of the old Ottoman empire (Anatolia), a small area bordering northern Syria around the Gulf of İskenderun (Alexandretta), the upper reaches of Mesopotamia, and the mountainous region of Armenia. It is bordered on the south by Syria and Iraq and on the east by Iran and the Armenian and Georgian Soviet Socialist Republics; it also includes a narrow strip of land in eastern Thrace, bordering on Bulgaria and Greece, which represents the remains of the European portion of the Ottoman Empire and, practically speaking, forms the territorial limits of the metropolis of Istanbul; the maritime border with Greece runs along the Aegean coast of Anatolia, east of the large islands of Lesbos, Chios, Samos, Kos, and Rhodes.

Geographically, therefore, Turkey is more or less synonymous with Asia Minor, whose historical and cultural past it has inherited and developed. The territory is heterogeneous, divided into an inland plateau and coastal areas, which, being inhabited by people of distinct traditions and occupations (the inland peasants and shepherds, the coastal fishermen and vine cultivators), have always differed in character. This dual aspect, springing from differences in environment and climate, is the key to the age-old forms of Anatolian civilization and art; the predominance of one cultural area over another varied from period to period, according to circumstances. So it was that in the 2nd millennium B.C., during the Hittite period, a continental empire developed that was markedly Anatolian as compared with the coastal populations; from the 11th century on, there was a partial immigration of the coastal populations inland, with intense pressure on the part of the Greek colonies strewn along the coasts of Asia Minor; after the Persian interlude, Greeks, Romans, and Byzantines were for a very long time in the ascendancy; with the establishment of the Seljuk sultanates in the 13th century, Asiatic, Turkish, and Anatolian continental influences once again prevailed, subsequently blended in the gigantic melting-pot of the Ottoman Empire with its Mediterranean and European ideas and influences. The modern Republic of Turkey has reasserted and fortified the spirit of its ancient Anatolian traditions.

SUMMARY. Historical-artistic survey (col. 354): *Prehistory, Pre-Hittite civilization, Hittites; Phrygians, Lydians, Ionians; Hellenistic age; Roman age; Late Roman and Byzantine age; Seljuks; Ottomans; European influences and contemporary trends.* Monumental centers (col. 369): *Historical topography; Asian Turkey; European Turkey.*

HISTORICAL-ARTISTIC SURVEY. *Prehistory, Pre-Hittite civilization, Hittites.* The oldest traces of man in the Anatolian peninsula date from the Upper Paleolithic period. Recent discoveries have proven the existence in the region of the Antalya Gulf of a mesolithic culture with microliths and of a non-pottery and pottery sequence with cliff paintings (Beldibi and Kızılkaya). Perhaps here are to be found the antecedents of the neolithic culture on the plateau, the existence of which was, up to a few years ago, either excluded or questioned. At Hacılar and Çatal Hüyük evidences of thriving farming and hunting communities have come to light that testify not only to a transitional stage between a period which had no pottery to one in which earthenware was produced, but also to the existence of a religion centered around fertility ceremonials (IX, PL. 416; XI, PL. 297). Both private and public shrines have been uncovered in the residential areas. These contain geometric or naturalistic wall paintings (much restored) as well as a wide assortment of figurines of goddesses, mostly steatopygous, in various attitudes and sometimes depicted with wild animals (see PREHISTORY).

Chalcolithic pottery, dependent in type on the pottery of the preceding period, shows an elevated sense of decoration and form, a delight in geometric motifs, and analogies (at times out-and-out importations) that seem to relate the area of the Konya plains and the lakes of Pisidia to Cilicia, where neolithic culture of an Anatolian type merged with a vaster cultural community of Mesopotamian origin. Tell Ḥalāf culture, in fact, not only extended as far as Mersin and Tilkitepe on Lake Van, but penetrated deeply, though indirectly, into the highlands as well, probably giving rise to the vast culture of vividly decorated pottery that some authorities claim extended as far as northern Greece (Sesklo and Dimini). The evidences of fortified towns and of actual fortresses testify, moreover, to the belligerance and insecurity of the period. While the Chalcolithic period in the southern part of the highlands was in some way related to northern Mesopo-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tamian cultures, to the west a certain unity is evident within the orbit of those regions centering upon the Mediterranean coast — a cultural area that also included the islands off the Anatolian mainland. Comparable to the earliest levels of Beycesultan are the stations along the Hellespont, such as Besiktepe and Kumtepe, which represent the antecedents of the first city of Troy (IX, FIG. 645). At the same time, although there is no specific evidence, there very likely flourished in the northern highlands villages, such as Büyük Güllücek and Yazir Hüyü, that show the effect of contact with the Cilician coast.

The artistic history of the early Bronze Age is more complicated. At first there was the Troad culture and the intermingling of the regions to the southwest after the destruction of Troy I, with subsequent migrations; and later, at the end of the early Bronze Age II, there was the movement from the north toward the southeast of what were presumably those Luwians, who, in historical times, were to play so important a role within the Hittite empire. But at the same time there existed a series of inland Anatolian villages which had for some time testified to the cultural level of the people; the discovery of the royal tombs of Alaca Hüyük has brought about a radical change in the traditional view of this having been a poor farming culture. These tombs, extremely rich in their fittings of gold and other metals, and particularly interesting for the statuettes of stags and bulls (probably sacred symbols) and for the so-called "standards" (I, PL. 517) have proved how little was actually known heretofore about the life enjoyed by the culturally more elevated classes of this period. Although these works are virtually unique in this period (but running parallel, also on a typological level, to the so-called "treasure of Priam" at Troy II, where an independent culture had evolved), the notion that they represent isolated exceptions is gradually giving way: the finds of Hasanoğlan, Horoztepe, and Mahmatlar, northeast of Alaca Hüyük, perhaps point to the path followed by this ruling caste (see MEDITERRANEAN PROTOHISTORY).

The destruction of the inhabited centers of Anatolia has been placed at about 2300; somewhat later the brilliantly painted ware called "Cappadocian" appeared. Just what the ethnic origins were of the princes so lavishly buried in the Alaca tombs, on the one hand, and of the inventors of this new style of pottery, on the other, is difficult to establish with any certainty. Some attempts have been made to associate the princes with the Hatti, and the importers of the new pottery with the Hittites, but these associations are largely hypothetical. It is to be noted, moreover, that "Cappadocian" pottery had completely disappeared by the time the first Hittite kingdom was established on the Anatolian plateau. The question of the arrival of the Indo-European Hittites is still to be solved on an archaeological level, but it may be presumed, with some probability of truth, that they arrived in small groups and then gradually forged themselves into a political entity. Their presence in Anatolia, together with the Hatti, has been established at the beginning of the 2nd millennium, not only from later reports, but from documents unearthed in Assyrian commercial colonies. Assyrian merchants operated in Anatolia from approximately 2000 to 1800 B.C., settling down into separate quarters near the more important cities (Kültepe, the mother colony; Alişar Hüyük; and Hattushash, mod. Boğazköy) and from there observing local customs and practices. The tablets from private archives have provided valuable evidence of trade with Assyria and, in particular, of local terminology. The introduction of the potter's wheel into the highlands dates from this period. The pottery, very refined in form (see, for example, the beaked pitcher type, VII, PL. 290), took on a reddish, highly burnished ribbed surface, with the gradual abandonment of polychrome decoration. The Assyrian commercial colonies were swept away and destroyed in the wars that broke out between the small states in their attempt to gain political ascendancy. Pithanas and Anittas — apart from whether they are to be considered of the same stock as the subsequent Hittite dynasty or not — set out to conquer that territory which was to become the homeland and headquarters of the Hittite kingdom. The phenomenon of the conquest of power and its concentration in the hands of a few people was not an isolated one; in the 19th century B.C., at Beycesultan in western Anatolia, an independent state was set up whose identity is still the object of dispute, and the sixth city of Troy constitutes yet another example (though in this particular instance, its culture clearly moved in the Aegean orbit). In a later period, there is evidence of a series of states strewn along the borders of the Hittite empire, but for the moment their identity, often even their location, is still open to question (see HITTITE ART).

The Hittite Old Kingdom (ca. 1650–1450 B.C.) was born of these internecine wars and asserted itself as the ruling power; but although the Hittite ethnic element prevailed, other nationalities were mixed with it, so that it is often improperly described as a federation rather than as a centralized regime. Material culture on the whole follows the lines of the foregoing period, though with some slight differences. It was during this period that the Hittites entered into contact with the great Near Eastern empires and their civilizations assimilated much from them, drawing new concepts, especially among the privileged political and cultural classes, and paving the way for the more substantial changes which marked the following period.

It was during the period of the Hittite empire (1450–1180 B.C.) that the monarchy assumed greater continuity, after the palace uprisings which had brought the early kingdom to a rather inglorious end, proceeding to the posthumous deification of the king and to the assimilation of Hurrian gods into the national pantheon. This was principally brought about through marriages to Mitannian princesses and frequent contacts with the other Near Eastern empires — especially Egypt — both in war and in peace.

The known monuments are ascribed to the Hittite empire period; it is to be noted that the art is essentially aulic and religious, and that popular, non-religious art is lacking. Suppiluliumas (1375–1335 B.C.) enlarged the capital city, Hattushash (mod. Boğazköy), furnishing it with a massive defense system which included three main gates, the Lion Gate (VII, PL. 280), the Gate of the Sphinxes, and the so-called "Royal Gate," decorated with reliefs (I, PL. 518; VII, PL. 280; XIII, PL. 220). These are the only extant examples of high-relief representations on a monumental scale (though it is known that religious statues also existed); they are of the greatest interest because, together with the Gate of the Sphinxes at Alaca Hüyük, they foreshadow the custom of setting apotropaic animals at the entranceways (a common practice in the art of northern Syria of the 1st millennium and in Assyria). The five temples of the capital, and especially that of the lower city, give an idea of the importance of religious worship in the life of the Hittites (already attested to by the documents; the king would interrupt his military campaigns, if it were at all possible, to preside in his capacity as high priest over the periodic religious ceremonials); a circle of spacious storerooms and archives led to the central court and from there, indirectly, to the sanctuary in which the statue of the god, illuminated by side windows, was located.

The citadel, conceived on a monumental scale, contained not only the palace, but audience chambers, the archives, and other lesser buildings as well. The carvings that decorated the town gate of Alaca Hüyük may also be ascribed to the empire period; in them religious scenes and gaming and hunting scenes were set in uninterrupted succession along orthostats. The sphinxes, four in number, were placed along the jambs of the gate. The national pantheon, of Hurrian origin, is depicted in the rock-wall shrine of Yazılıkaya (VII, PL. 279), near Boğazköy. Here Teshub and Hepat are shown meeting, with a long procession of minor gods spread out on either side. In a secluded recess are to be found the so-called "Dagger God" and King Tudhaliyas IV held tightly in the arms of the "Boy God." The carving is, in general, delicately modeled. These works, together with the gems and glyptics and other minor arts, prove that Hittite art during imperial times, while assimilating traditions and influences from other civilizations, had attained an independent, typically Anatolian style of its own.

The complex cultural and political world of the Hittite empire was destroyed about 1180 by the uprisings that swept through Anatolia, Syria, and Palestine, ultimately disintegrating at the borders of Egypt; these disturbances are attributed to those mysterious tribes known under the general name of "Peoples of the Sea." Not very long before, Homeric Troy had fallen, after an intense commercial and colonial penetration on the part of the Mycenaeans, who had been active along virtually the entire Anatolian coast — from the Hellespont to the Gulf of Alexandretta. While all traces of the Hittite empire were lost on the Anatolian highlands, the cultural and, to a certain extent, the political traditions survived in such outlying regions as southeast Anatolia and northern Syria, where the tide of invasion had not arrived or where, as some authorities maintain, groups of Hittites from the highlands had taken refuge to swell the ranks of those who had settled there in imperial times to assure the borders greater stability. The cultural and political history of these kingdoms, also known as Neo-Hittite, splits up into a series of local episodes, so that the generally accepted principle that the ascendancy to empire was the privilege of the prevailing ethnic element undergoes considerable variation (note, for example, how Aramaic elements reached as far as Marash, that is, to the heart of the Taurus Mountains). Carchemish and Malatya were the two main centers that maintained closer ties with the past, with Carchemish playing an important role as the viceregal seat for the maintaining of order in this turbulent border district. The art, in general, even though the iconography frequently reverted to that of the imperial age, took on distinct features and a new style, though with considerable unevenness of quality. Typical is the extensive application of orthostats decorated with reliefs to the walls of the so-called *bît-hilani*, that is, the princely residence, which, while an original invention of this area in that period, was later to take another form borrowed from Assyria. The subject matter of these carvings is not essentially religious, but includes (aside from evil spirits, possibly of Mitanni origin) scenes of everyday life and war motifs. From time to time, Assyrian (Carchemish) or Phoenician (Karatepe) influences have been detected in the development of this monumental art,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Turkey, principal centers of artistic and historical interest. *Key*: (1) Modern national boundaries; (2) prehistoric and preclassical centers; (3) classical centers; (4) medieval Christian centers; (5) Islamic centers.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

but it is more likely that the art, while depending to a certain extent upon foreign influences, acquired unity and coherence within a local artistic framework. The differences are largely due to the varying skill of the craftsmen and to the diverse periods in which individual series of works were produced. Assyrian influence is clearly discernible during the last years of these states, that is, just before the Neo-Hittite kingdoms were reduced to metropolitan provinces in about 700 B.C. by the powerful bordering state.

The Urartu (q.v.) kingdom, successor (in terms of ethnos and language) to the Hurrian nation, flourished between the 9th and the 6th century in the Lake Van area; notable for its unvarying opposition to Assyria, Urartu assumes particular importance in that it was responsible for introducing Eastern iconographic motifs into the west through its rich production of bronzes. The most important center on Lake Van, Toprak-kale, was despoiled at the end of the 19th century and the finds have only lately become the object of serious study. At Altintepe, near Erzincan, recent explorations have brought to light the remains of a square temple containing rich tombs and numerous bronzes. Much of the information about this kingdom and this civilization was supplied by the Assyrians, who forced the Urartians to withdraw to their original borders after a period of expansion during which Urartian rule had extended all the way to the Orontes. Their final disappearance from the Near Eastern political scene was brought about by the Cimmerians, who also suppressed the Phrygians.

Paolo Emilio PECORELLA

Phrygians, Lydians, Ionians. After the destruction wrought by the Peoples of the Sea, the Anatolian plateau remained sparsely populated. This is the darkest period in its history; however, it is not unlikely that future explorations will succeed in narrowing the cultural gap covering the 11th to the 8th century, as is now being done in northern Syria.

It was at the beginning of the 8th century that the Anatolian populations came into contact with the Greek world and Western influences mingled with local traditions to give rise to Phrygian and subsequently to Lydian and Carian culture. Thus these regions appear as individual provinces of a widespread Anatolian artistic style, and it is not always easy to establish just how much was received from, and how much was given to, the Greeks, especially within the Iranian orbit (see ASIA MINOR, WESTERN: PRE-GREEK CULTURES; EARLY GREEK INFLUENCES).

Historically, the Phrygians, having established themselves in small principalities to the east of the Halys (Kızıl Irmak) joined together into a "federal" monarchy with its principal center at Gordium (Gr. Gordion) around the turn of the 8th century, but the invasion of the Cimmerians arrested the cultural development, driving the population westward (Eskişehir region), where the "City of Midas" (Yazılıkaya) and numerous rock-wall monuments testify to a last late flowering. Worthy of note, along with the general architectural features of private houses, temples, and rock-hewn shrines, are the peculiar polychrome decorations on clay panels, abounding in mythical figures and battle scenes (Pazarlı and Gordium). Geometric patterns, prevalent in their pottery, were also used in the large flat bands set as borders around the fronts of the rock-hewn monuments (I, PLS. 528, 529, 530, 532).

The Gordium tombs (mostly 8th cent. B.C.), large tumuli each containing a room paneled in wood, are the prototypes of the many other tombs appearing throughout Asia Minor until Roman times; they express the beliefs and styles shared by many different populations over a long period of time. Other tombs in Paphlagonia have columns and pediments and resemble Greek structures; heraldic animals often decorate the façades (at Kalekapı, set along the imposts and in the pediment).

The same informing spirit is also found in the decoration of Phrygian vases, which may be divided into four different styles: the earliest, corresponding to the mature and late stages of the Greek Geometric style; the transitional style; the Phrygian style proper, which presents a wide range of subjects divided into three subclasses, the last of which (the decadent) is akin to examples imported from Greece; and the late Phrygian style, which covers the last century of Phrygian culture, up to 500 B.C. The third group includes examples, magnificent in the originality of their form and in the quality of their decoration (squares, meanders, crossed lines, highly stylized animals), which often covers the entire vase. Phrygian stylization is profoundly different from that of the Greek Geometric style (q.v.). It has the flavor of an attractive folk art; the wild animals and the figures, in double outline, still within the orbit of Asiatic tradition, are set into an ornamental composition broken up into distinct areas.

The Lycians have also left evidence of an original artistic concept in their tombs, the façades of which were frequently carved into the sides of cliffs (such as at Myra, Telmessos): they were very likely imitations of conventional local wooden building types, copied down to the last detail (crossbeamings, fixtures); the roofs were flat (in imitation of mud roofing) or ridged with pointed or triangular pediments.

Lydian (I, PL. 541) and Carian art bear an obvious relation to Phrygian art; at Sardis, the capital of Lydia in the 7th and 6th centuries (up to 546 B.C., when it was conquered by the Persians), architectural terra cottas were found that are similar to Phrygian works but whose subjects seem nearer to Eastern tastes: chariots and banqueting scenes were added to the usual Phrygian repertory. Very little information is available on Carian art. It was associated, it would seem, with the Greek tribes that had settled down along the Anatolian coasts, but there is meager documentation of the activities of the Carians in the 7th and 6th centuries.

Little is known about the art of the other tribes entrenched along the coasts of Asia Minor in the 8th, in the 7th, and in the first half of the 6th century, and even less about the artistic life of Anatolia under the Persians, that is from the middle of the 6th century to the time of Alexander the Great.

As to the archaic architectural monuments of the Troad (Neandris, Assos) and Ionian (Larisa on the Hermus, Ephesus, Miletus, Erythrae and, though outside the present confines of Turkey, Samos) cultures, there are not enough of them for a complete survey to be drawn of this art and of the relations between Ionia, Phrygia, and Lycia. Nor is the art of the late archaic period and of the 5th century known. The sculpture of Trysa (Gölbaşi), Xantos, Myra (tombs), and the pottery uncovered at Gordium and Sardis, prove, nevertheless, that during the Persian occupation some usually secluded centers enjoyed a certain independence within the satrapy system, and that consequently Greek influence was deeply felt also in the field of art, both directly, as a result of the presence of artists summoned from Greece, and indirectly, through the importation of Greek art.

Hellenistic age. Hellenistic culture spread rapidly through Asia Minor after Alexander the Great; the free colonization of the vast territory led to the creation of many new cities and to profound changes in already existent ones (see HELLENISTIC ART). Among the city-states that sprang up in Asia Minor, the most important was the Seleucid kingdom in Syria, from which the Pergamum kingdom broke away in 280; the Seleucids were then conquered in 190 by Rome in alliance with Pergamum and were virtually eradicated from Anatolia. Roman rule was not to assert itself, however, until the end of the 1st century B.C., after the abortive rebellion headed by Mithridates IV Eupator and the victories of Lucullus and Pompey.

During the centuries leading up to the Augustan Age, the cities of Asia Minor had enjoyed a certain autonomy, though many had been built (also as forts) by Seleucid kings (and named in honor of some king or queen: Seleucis, Antioch, Apamea, Laodicea, Stratonicea) and Pergamum kings (Attaleia). Encircled by walls, and containing a bouleuterion for the gathering of the representatives of the people, some of these cities were the capitals of small independent states.

In these small centers, confined to the needs of a municipal form of life, public works were fashioned with exquisite lines, but were of modest dimensions; the shafts of the columns, the capitals, and the architraves are of stone, obviously the product of fine workmanship, but ornamental carvings are limited. There is good taste in the design and in the contours of the moldings, but there is no display of luxury. Monumental structures also existed, however, such as the Great Altar of Zeus at Pergamum (VII, PLS. 172–74) and the temple-tomb of King Antiochos I of Commagene at Nimrud Dagh, which seem to represent exceptions to this rule. These monuments were intended to glorify the kings and their power, and therefore were built in a style that distinguished them from the usual buildings; Nimrud Dagh shows traces of Persian influence.

Hellenistic architecture, moreover, cannot be fully appreciated without taking into consideration its ties with sculpture; the Greek artists who settled in Asia Minor created thriving schools whose works are to be seen on the monuments. The extant products of the first Pergamene school (second half of the 3rd century B.C.) are the well-known groups and statues: Marsyas flayed, Ariadne, the Hermaphrodite; and in the great Pergamum altar reliefs the second school (first half of the 3d century) gives token of the technical skill of its artists.

The Pergamene school maintained its vitality for a long period of time; it may be detected in the Temple of Artemis at Magnesia-on-the-Maeander (ca. 170–100 B.C.), animated by scenes of Greeks and Amazons in battle, and later (88–85 B.C.) in a statuette of Hercules liberating Prometheus, alluding to Mithridates the Liberator; other trends showed an almost rococo elegance, or a distinct return to classicism (2d and 1st centuries B.C.).

The temples themselves, with rare exceptions, sought not to astonish the mind of the observer by means of imposing masses, but rather to conquer his spirit with harmonious proportions and subtle details. They are often encircled by a peribolus (a columned portico), as at Priene, sometimes symmetrically disposed (Teos). The order is

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

usually Ionic, the most closely linked to local tradition, rarely Doric (Troy, Temple of Athena, and Pergamum) or Corinthian.

A typical expression of Greek rationality is to be found in the urban planning which takes up and applies, with a view to functionalism, the Hippodamian scheme. The urban center was the agora, a square with porticoes, shops, and commercial offices served by the main street, on one side of which (sometimes set slightly apart) was the "official zone" with the bouleuterion, the administrative offices, and small temples or special shrines. Within the town walls there was a theater, and often a stadium. The private houses, served mostly by narrow streets accessible only to pedestrians, were simple buildings, constructed of square-cut stones and mud; they were adorned by a few columns and simple frescoes.

The tombs of important personages such as the 8th–7th century royal tombs in Gordium and Sardis were often in the form of tumuli; the burial chamber was, however, roofed by stone barrel vaults or by stone slabs jutting out in successive layers. In rare instances more ambitious structures were built, usually in imitation of the Mausoleum of Halicarnassus (Belevi, near Ephesus).

Roman age. In the 1st century A.D., under the Roman Empire, the aspect of the cities of Asia Minor underwent a rapid change. The construction of lavish public works increased, giving the urban centers a luxurious character unknown up until that time; thus, during the Augustan Age, propylaeums were built in Antioch in Pisidia that gave onto a square, one side of which opened onto a semicircular space entered through a two-storied portico; the Temple of Augustus and Men was built on an axis with the hemicycle and during the reign of Tiberius a second large square was built in front of the propylaeum. Other imposing works date from the reign of Vespasian (temple dedicated to him in Ephesus) and Domitian (Hierapolis, tributary gate; Miletus, the nymphaeum). In this same century the great avenue of Perga was built. Its starting point was a great triple arch; pillared porticoes ran along either side and fountains down the middle.

City road systems frequently consisted of arcaded streets crossing at right angles; at the intersections small shrines were set up, with architraves, columns, and niches containing statues or fountains. The decoration on the buildings in the first half of the century was restrained and still bound to Hellenistic tradition (extensive use of the Doric order, fine moldings sparingly used on the archways and architraves, as in the Mazaeus Gate at Ephesus); but beginning with the reign of Claudius, delicate carvings appeared in the moldings. In the Flavian Age an extremely ornate style evolved which was to continue, with variations, to the time of Septimius Severus; it was characterized by finely wrought leaf patterns in the friezes and minute designs in the ornamental moldings and cornices.

First-century (A.D.) sculpture in Asia Minor still poses many unsolved problems. There are examples of carvings of extraordinary elagance on tombs (Hierapolis) and monumental buildings; those on the baths of Aphrodisias, dating probably from the Flavian Age, are an indication of the high quality of workmanship to be found in this center of production and exportation of sculpture. The 2d century marked the peak of the building activities in Asia Minor; cities competed with each other to secure the *neocoris* (the rank of custodian of the temple dedicated to the emperor) and erected extremely imposing buildings, sometimes with gigantic marble and granite columns and with colossal marble architraves. Some of these temples were set on a podium, in the Roman style (Temple of Trajan in Pergamum); other were given a special shape, as was the "Sanctuary of Serapis" (Kızıl Avlı; XII, PL. 188) in Pergamum. Sanctuaries for the worship of the emperor were also built which consisted of a large room adorned with niches and columns, preceded by a pillared vestibule with a coping and a peristyle (Side).

Nymphaeums, the marble-faced fountains that may at times be of monumental proportions, are to be found at Side, Aspendos, and Hierapolis; in the baths, the niches for the imperial cult opened into open rooms facing onto the outside peristyle (*Kaisersaal* in the baths of Vedius at Ephesus). City gates such as those at Attaleia (mod. Antalya) were frequently triple arches surmounted by a colonnade with pierced entablatures and pediments; the agoras of the 2d century were also supplied with highly decorated doorways in complex systems abounding in columns, cornices, and pediments (Miletus; XII, PL. 189).

The theaters of the 2d century were also adapted to contemporaneous tastes; the *frontes scaenae* were at first faced with coupled columns supporting simple pediments (Aspendos), later with architectural orders containing richer and more intricate elements (Ephesus, Hierapolis). During the reign of Hadrian these structures were still subdued in taste, but during the period of the Antonines (when the building of public works became a kind of craze, also with respect to the number of monuments built), they became complicated, almost florid in feeling.

Beginning with the Augustan Age, tombs frequently took the form of cubical stone shrines (rarely were there examples in marble with columns). These lined the roads leading into the cities; the best-preserved example in all of classical antiquity is at Hierapolis.

Considering the extraordinary development of cities in Asia Minor from the 1st century B.C. to the end of the 2d century of our era, the question arises as to what sources of economic wealth made it possible for so many magnificent buildings to be constructed. In the Roman period there were hundreds of cities in the area and rich and costly buildings were to be found everywhere; it must be concluded that these cities obtained their wealth from the flourishing of crafts and commerce — wool from Anatolia was made into textiles and magnificent rugs, marble was exported in the form of priceless sculpture, metal in that of finely chased objects. This also explains the abundance and the refinement of decorative sculpture — the assorted capitals with figures and leaf patterns, the elegant and delicately carved friezes — and the tasteful mosaic pavements (outstanding among them, the Antioch mosaics, X, PL. 177, with their vast figured compositions that give some idea of what the city's mural paintings, now lost, were like).

In the 3d century the situation changed rapidly; the reign of the Severan emperors may be considered a transitional period between the prosperity of the 2d and the near-poverty of the 3d and 4th centuries: the reason for this rapid decline is to be sought in the political situation, which degenerated from an enviable state of stability to chaos. The precariousness of political power advised the short-lived emperors against all unnecessary activities and, in particular, the building of lavish public works; it is likely that almost all the marble quarries and workshops were soon closed down.

The weakness of the Roman state led, throughout the empire, to the rise of a new social order, almost feudal in character, in which the *potentiores* were undisputed lords of vast dominions and the loss of wealth in large sections of a population burdened, on the one hand, by oppressive taxes and heavy war duties, and alarmed, on the other, by the lessening of Roman prestige, especially after the defeat and capture of Valerian by Shāpur I (260).

The vitality of the new Sassanian empire soon asserted itself, however, manifest not only in its military victories, but also in an intensification of its influence on the life and art of the former Roman province of Asia, so that evidences of Sassanian influence are to be found in the architecture, in the decorations, and in the tastes of Asia Minor in the 3d and 4th centuries. In particular, the public baths and palaces show influences of Sassanian technique and spirit; the traditional Hellenistic stone walls and wooden ceilings, columns, and architraves were replaced by brick walls and vaults, domes, and lively ornament.

An exact analysis of 3d- and 4th-century architecture in what is the territory of present-day Turkey is, however, impossible — there are too few monuments extant — but certain thermae in Aspendos, Magnesia-on-the-Maeandar and Ephesus (remains of the harbor baths and Baths of Scholastikia) make it possible to outline its various stages.

Late Roman and Byzantine age. The truly extraordinary development of civil life and art during the reign of Theodosius II, that is, immediately following the establishment of the Eastern Empire as an independent state, was both manifest and significant. In the beginning, however (that is, up until the death of Arcadius), sources of trouble were not lacking in Asia Minor. The new empire also had difficulty in keeping the public order; bands of Isaurian pirates raided the countryside, terrorizing the people, who were forced to erect temporary walls about their cities, which had previously been unfortified. With the passing of time, however, things went back to normal and the area known today as Turkey enjoyed a period of prosperity. Even so, the Eastern emperors were faced with a series of religious and political problems; since, having been converted to Christianity, they could no longer lay claim to the traditional honors of divinity, they sought to preserve their influence as the vicars of God on earth, but this obliged them to make substantial donations to bishops and monasteries and to take part directly in religious wars.

The account given in the *Vita Porphirii* (ca. 400) of the events regarding the construction of the Gaza church in Palestine proves that, when during the reign of Arcadius (395–408), the emperor intervened as donor and commissioner, he donated the marble columns as well as provided the building plans; thus, during early Byzantine times, the imperial workshops served as a powerful vehicle for the standardization and spreading of architectural types and finished marble pieces. This "court art" included magnificent basilicas modeled along traditional lines, as well as martyriums that at first were sepulchral monuments, elaborate in shape, where the ceremonial rites in honor of the martyrs were held.

The structural features of architecture of the Theodosian age were copied partly from classical models (monolithic shafts of colored marble, capitals and architraves carved in white marble, soffits, large windows) and partly from late Roman and Eastern models (brick arches supported by columns, walls with *opus sectile* facings, wooden-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

frame domes) and utilized typically Asian, and especially Sassanian, techniques (barrel and domical vaults without supporting frames). The sculpture of the late 4th and early 5th century in some cases still displayed an elegance worthy of the classical tradition (Serigüzel sarcophagus; II, PL. 468), but certain works reveal frontal compositions and a want of proportion in the figures, such as in the base of the Column of Theodosius in Istanbul (II, PL. 467; VII, PL. 265; IX, PL. 57).

These same observations apply to painting and mosaics; the mosaics of the imperial palace in Constantinople (II, PL. 437), in the exquisite rendering of the design of figures, masterfully worked out in perspective, and hence vivid and lively, bring to mind the flawless technique of the Hellenistic and Roman schools of Asia Minor, whereas in certain compositions and certain subjects, they are closer to the East. Even so, the compositional and formal elegance of the *palatium* pavements produced by the imperial workshops are a far cry from the geometrical plainness of most of the mosaic pavements of Asia Minor and Constantinople.

The method of carving the capitals and the finished marbles in general also underwent a rapid development in the course of only a few decades of the 5th century, reverting back to the drill and chisel technique popular during the Antonine Age; so that from the crudely modeled, coarsely scored decorations of the early Theodosian age (the Sırmakeş Hanı in Istanbul, the capitals of the octagonal martyrium in Hierapolis) there developed the delicate notching of the leafage and the openwork of the racemes in the Basilica of St. John in Studion, Istanbul (II, PL. 469) and the carvings in Alahan Monastır (Koca Kalesi, ca. 470; II, PL. 424); a similar technical evolution may be detected in the *plutei* and in other parts of the liturgical fittings.

In the 6th century, Christianity was securely established and those pagan temples still standing were either turned into churches or destroyed; thus, in addition to the hypostyle basilicas and martyriums of the traditional type massive churches and martyriums (SS. Sergius and Bacchus in Istanbul; II, PL. 426; FIG. 770) were also built, as well as immense cruciform basilicas roofed with domical vaults and domes (St. John, Ephesus; the "Cathedral" of Hierapolis). The masterpiece of the Justinian Age, Hagia Sophia, is unique; it is an immensely imaginative work in which many elements, either original or taken from Sassanian models (the great spherical vault), are sheathed in marble, whereas the wall facings in marble date back in part to the Roman tradition (see II, col. 773). Decorative sculpture in the 6th century continued in the tradition of drilled carvings; the openwork leaf decorations and the capitals of Hagia Sophia represent some of the finest products of the imperial workshops.

The mosaics of Hagia Sophia and of the Antioch pavements are vast carpets of richly inlaid geometrical and stylized floral patterns (seldom figures). Among the miniatures of the period, the Genesis Codices in Vienna (Nat. Bib.), the fragment of the Sinope Codex in the Louvre, and the "purple" codex of Rossano Calabro (X, PL. 67) are vivid examples in color of the prevailing tastes.

With the rapid rise of Islam in the 7th century, the area occupied by present-day Turkey became a battleground. Cilicia was seized almost immediately by the Arabs and remained in their possession until the 10th century; after the Arabs became masters of the sea, the coastal cities were repeatedly plundered and destroyed; many were razed, others reduced to mere villages. Consequently, the churches of the 11th century were small in size and vaulted in structure and generally had a plan in the form of an inscribed cross that represents a combination of the basilica and the martyrium.

The spiritual crises that afflicted the country also marked a shift in taste; the Eastern tendency toward abstract decoration was strengthened. Wall surfaces were sometimes covered with crosses, endlessly repeated in a border frame of geometric or highly stylized patterns (St. Irene, Istanbul; the older churches in Göreme, VII, PL. 408).

Traditional figural trends had not, however, completely died out; silverware in the time of Constans II (630–641) was still decorated with mythological figures, their movements modeled with vivacity and vigor.

With the 9th and 10th centuries, images were again permitted in the churches, but it was prohibited to introduce innovations of any sort into them; indeed, the iconography of the various figures and their arrangements in the composition had to observe minutely detailed rules. Abstract symbols were eliminated or reduced in number, but the figures were idealized and far removed from human reality. The figured frescoes of Göreme offer vivid testimony of this world of art and religious belief. In miniatures, however, together with marginal illustrations and geometric decorations of a popular cast inherited from the iconoclastic age, were found magnificent codices illuminated by court artists (Paris Psalter, II, PL. 480; XI, PL. 85) with full page illustrations and vast compositions borrowed from antiquity.

Architecture continued to labor under difficulties, with churches of medium or small dimensions, often in the form of an inscribed cross (Kalender Cami, Istanbul, possibly once the church of the monastery of Akataleptos). Even so, the 10th-century Armenian school deserves special attention: in the mountainous regions around Lake Van and beyond the present border between Russia and Turkey, the inhabitants joined together into a compact and strong kingdom that reached its zenith under the Bagratid dynasty in the late 10th and early 11th centuries. The buildings of this proud people were of freestone; the churches, capped by a dome terminating in a cone and sometimes decorated on the exterior with crude figure carvings, seem to foreshadow certain forms popular in Europe during the Romanesque period and for this reason are of considerable interest.

Seljuks. In 1071 in Armenia there occurred the event that was decisive for the fate of the Byzantine Empire: the Seljuk Turks, routing the Byzantine army and capturing the emperor, Romanus IV Diogenes, swept into Anatolia like a raging tide. Opposed by the Byzantines and the Crusaders, the Turks were, however, unable to carry their conquest to immediate completion. The Byzantine emperors retained control over the area around the capital; the Armenians came to a halt in Cilicia and established there a kingdom that endured until 1375. Even so, the Turks had conquered most of Anatolia, where they set up various sultanates. Of these, the sultanate of Rum was the most powerful, and extremely important monuments from the 13th century are still to be found in its capital (Konya). The Seljuk sultans, fervent defenders of the faith, erected mosques and madrasahs in all the Anatolian cities, and built monumental inns for travelers and pilgrims on their way to Mecca. Architecturally these buildings owe little or nothing to the Byzantine heritage, except perhaps in Armenia where certain turbehs (tombs) and several mosques show the influence of local forms, decorations, and techniques. But, generally speaking, the plans of the wooden-pillared mosques, the star-coffered ceilings, the stalactites over the doorways, the predominantly geometric decoration, are all Islamic features drawn, in part, from the artistic resources of Persia (see IRAN; ISLAM; SELJUK ART). Especially Iranian in inspiration are the doorways set in wide stone frames, the magnificent brick facings arranged in patterns, and the brilliant surfacing of brightly enameled tiles.

The greatest accomplishment of the Seljuk sultans was, however, the bringing of peace to, and the reorganization of, Anatolia. They found the country in a state of utter prostration; countless ancient cities had been reduced to squalid villages, others destroyed. The Seljuks built new towns (Alanya), restored already-existing ones along lines different from those of classical times, and reactivated the communication routes, supplying them with bridges and caravansaries and bringing about in this way the resumption of civilized life.

Evidence of the vitality of the Islamic peoples during the 13th and 14th centuries is also to be found in Byzantine culture: among other things, certain monuments from the time of the Palaeologian emperors in Istanbul show Seljuk influence in the rich polychrome colorings of the walls (the "Palace of Constantine," the Church of S. Mary Pammakaristos, known as the Theotokos), though the mosaics and the painting from the time of the Palaeologians seem also to reflect Western tastes and to present analogies with the monuments of Italian painting which can not be explained merely as the result of the transfer of ideas (and later of artists) from Constantinople to the West.

Ottomans. The work begun by the Seljuks was completed by the Ottoman rulers (see OTTOMAN SCHOOLS), who brought all the Islamic provinces together into a single unified state, which they extended to include the bordering countries until they had built an immense empire.

In the beginning, the Ottoman dynasty wielded its power in the region between Eskişehir and Brussa (Bursa). In the latter city, which was originally the Ottoman capital, only a few buildings are left that date from the second half of the 14th century, so that in order to have an idea of the style prevalent at that time, reference must also be made to İznik, Miletus, and Aya Soluk (anc. Ephesus).

One mosque (the Ulu Cami in Bursa; X, PL. 443) has twenty small domes with intermediate piers; others (the Nīlūfer Hatun Imāret and the Yakub Çelebi Zaviye at İznik) are T-shaped; still others are square with a single dome and with a portico in front.

The T-plan, evolved from the Seljuk madrasahs of Konya in the roofing over of the courtyard in front of the liwan, was used in the two important mosques of Bursa, the Beyazıt Yıldırım Cami (ca. 1400) and the Yeşil Cami, or Green Mosque, of Mehmet I (1421), as well as, a few years later, in the Muradiye Cami of Edirne (1435–1436). The Great Mosque of Ephesus (1375), built by Isa Bey II, is Syrian in type and stands in a class of its own.

The art of this period cannot be discussed without giving a special place to the enameled ceramic tiles which represent one of its most striking architectural features. The facings on the minaret of the Mehmet Çelebi Cami in İznik and inside the Yeşil Cami in Bursa and the Muradiye in Edirne are in various tones of

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

blue and green and are among the most beautiful products of all Islamic art. They are supplemented by decorative frescoes of which nothing has remained except fragments in the above-mentioned mosques of Bursa and Edirne.

A new type of mosque appeared in Edirne with the Uç Serefeli Cami; surmounted by an enormous central dome, the collateral rooms are mere appendages to the main hall; the plan, on a hexagonal nucleus, is also found in the Manisa mosque.

This enlarging of the dome met with great success in Ottoman architecture, also because it coincided with local tastes and traditions. It was to reappear frequently in the 16th century, inserted into more or less complex plans. Typical of this stage of architecture are the numerous works by the architect Sinān (q.v.), especially the mosques, conceived along more or less simple lines, depending upon the size. The masterpiece of this prolific architect was the Selimiye at Edirne with an octagonal nucleus. But there are other mosques of outstanding quality to be seen in Istanbul (Süleymaniye, Mihrimah). In them, the effect of the outer mass is softened by small domes and buttresses, or by numerous windows, and the interiors are glowing with color and steeped in shadows.

The ceramic decoration in this century became lighter and more vivacious in color: white tiles painted with bright colored flowers and arabesques were popular; the colors, applied in thick coats, make for a heavier surface and therefore emerge strong and pure. The ceramic facings of the Selimiye at Edirne and of the mosques in Istanbul (the most magnificent being the Rūstam Paşa) offer striking proof of the technical level attained by the İznik imperial workshop.

After the death of Sinān, and following in the wake of the tradition he established, the Ahmet I and Valide (Yeni Cami) mosques were built in Istanbul, their interiors adorned with magnificent ceramics. Dating from the previous century is the Mosque of Selīm I, which applies on a monumental scale the same simple and stately plan of a cubical structure surmounted by a dome seen in innumerable Turkish cities and villages. Ottoman religious architecture then spread to the Mediterranean cities of the empire, to Syria, Palestine, and Egypt.

The Ottoman caravansaries consisted of courtyards surrounded by several levels of galleries and storerooms; they were essentially commercial emporiums for the storing of goods and the providing of temporary lodgings.

European influences and contemporary trends. The "Turkish baroque" is of considerable interest. Until the 18th century, Turkey had been largely confined within the world of Islam. During the 18th century, the new foments in European culture were also felt in Istanbul, and in the second half of the century the sultans (especially Selīm III, 1789–1808) took keen interest in Europe and in France in particular. This new situation was reflected in the Nuru Osmaniye and Lāleli mosques, and in many of the fountains and rooms of the Topkapı Saray, with their fancifully curving cornices in the baroque style and a profusion of rococo ornaments.

In the early decades of the 19th century, these works had their counterpart in others inspired by neo-classical principles: the Nusretiye Mosque at Tophane and the Türbe of Sultan Mahmut in the Divan Yolu are examples of local interpretations — loaded with ornament, but expressive — of the prevailing European style. The mid-19th century palaces are a riot of columns, friezes, curlicues, ornamental plaques, and moldings fashioned of white marble or molded cast iron.

The criticisms brought against these monuments up until only recently now require reexamination: the Yeni Köşk (1840) and the Dolmabahçe Palace (1852) in Istanbul are well-defined expressions of a different sort of oriental taste and are in no way inferior, in their originality and in their mastery of effects, to certain of the Louis Philippe and Second Empire monuments to be found in Europe.

Paolo VERZONE

The first attempts to introduce the principles of modern European functional architecture into Turkey date from the third decade of the 20th century. The first achievements in this area, made possible through the use of new building materials, were the work of two Turkish architects, Zeki Zayar (private house, Istanbul, 1937; villa, Suadiye, 1937) and Sedat Hakki Eldem (health resort hotel, Yalova, 1937–38). It was only after World War II, however, that the principles of international modern architecture were widely adopted in public and private buildings in the large cities. This new approach to building and town planning has given rise, in the old Turkish cities, to new commercial and administrative centers and new residential districts, largely European in appearance (i.e., Ataturk Boulevard in Ankara). Recent economic prosperity has led, moreover, to the construction of modern industrial plants in the suburban and rural areas. Outstanding among these, for the modernity of the architectural and technical procedures adopted, are the Karabük steel works, the factory in Kayseri, the Raman and Mersin refineries, and the Mersin grain elevators.

In the years after World War II Turkey has had to deal with the serious problem of overpopulation in the cities and consequently to set up a town-planning program which would permit the residential districts to be sufficiently developed and at the same time would assure the protection of the historical centers. The problem becomes even more serious in those cities in which improvident urban reforms carried out in the middle of the 19th century, with the demolition of the old quarters, the laying out of broad streets and the construction of modern quarters close by the historical-monumental centers, have modified the old urban structure without providing an adequate solution to the subsequent growth of the city. Recent town-planning schemes tend to obviate these drawbacks by spreading out the built-up areas, by restoring the monumental centers, and by creating new suburban residential districts. Guided by these new town-planning principles, it has also been possible to save the numerous parks and gardens that constitute one of the most attractive features of many ancient Turkish cities (e.g., Bursa).

• •

BIBLIOG. *Preclassical, Classical, and Byzantine periods*: *a. General*: Perrot-Chipiez, V, 1890; L. Speleers, Les fouilles en Asie Antérieure à partir de 1843, Liège, 1928; K. Bittel, Prähistorische Forschung in Kleinasien, Istanbul, 1934; L. Speleers, Les arts de l'Asie Antérieure ancienne, Brussels, 1936; H. T. Bossert, Altanatolien, Berlin, 1942; A. M. Mansel, Türkiyenin arkeoloji . . . bibliografya (Archeological . . . Bibliography of Turkey), Ankara, 1948 (full bibliog. to 1938); R. O. Arik, Les fouilles archéologiques en Turquie, Ankara, 1950; K. Bittel, Grundzüge der Vor- und Frühgeschichte Kleinasiens, 2d ed., Tübingen, 1950; J. B. Pritchard, Ancient Near East Texts Relating to the Old Testament, Princeton, 1950 (2d ed., 1955); H. T. Bossert and R. Naumann, Altsyrien, Tübingen, 1951; J. B. Pritchard, The Ancient Near East in Pictures, Princeton, 1954; R. Naumann, Architektur Kleinasiens von ihren Anfängen bis zum Ende der hethitischen Zeit, Tübingen, 1955; S. Lloyd, Early Anatolia, London, 1956; A. Götze, Kulturgeschichte des Alten Orients: Kleinasien, 2d ed., Munich, 1957; E. Akurgal, Die Kunst Anatoliens von Homer bis Alexander, Berlin, 1961; Arts Council of Great Britain, Hittite Art and the Antiquities of Anatolia, London, 1964 (exhibition cat.); R. Ettinghausen, E. Akurgal and C. Mango, Treasures of Turkey, Geneva, New York, 1966. See also the bibliogs. for HITTITE ART and URARTU. *b. History and topography*: W. J. Hamilton, Researches in Asia Minor, Pontus and Armenia, 2 vols., London, 1842; W. M. Ramsay, Historical Geography of Asia Minor, London, 1890; V. Chapot, La province romaine proconsulaire d'Asie, Paris, 1904; L. Robert, Villes d'Asie Mineure, Paris, 1935 (2d ed., 1962); D. Magie, Roman Rule in Asia Minor, 2 vols., Princeton, 1950; E. Kirsten, Cappadocia, Reallexicon für Antike und Christentum, II, Stuttgart, 1954, pp. 862–91; S. F. Starr, Mapping Ancient Roads in Anatolia, Archaeology, XVI, 1963, pp. 162–69. *c. Travels and descriptions of cities and monuments*: C. de Bruin, Reizen . . . door de vermaardste deelen van Klein Asia . . ., Delft, 1698; P. Lucas, Voyage du sieur P. L. fait par ordre du Roy en Grèce . . ., 2 vols., Paris, 1712; J. Pitton de Tournefort, Rélation d'un voyage du Levant en Constantinople, côtes de la Mer Noire, Arménie, Géorgie, 2 vols., Lyon, 1717; P. Lucas, Voyage en Turquie d'Asie . . ., 3 vols., Rouen, 1719; R. Pococke, Description of the East and Some Other Countries, 2 vols., London, 1743–45; J. Otter, Voyage en Turquie et en Perse, 2 vols., Paris, 1748; Society of Dilettanti, Antiquities of Ionia, 5 vols., London, 1769–1914; D. Sestini, Lettere odeporiche, ossia Viaggio per la penisola di Cizico per Brussa e Nicea, 2 vols., Livorno, 1785; J. B. Lechevalier, Voyage de la Propontide et du Pont-Euxin avec la description des monuments antiques et modernes de Constantinople, 2 vols., Paris, 1800; G. A. Olivier, Voyage dans l'Empire Ottoman, Egypte et la Perse, 3 vols., Paris, 1801–07; F. Beaufort, Karamania, or a Brief Description of the South Coast of Asia Minor and of the Remains of Antiquity, 2d ed., London, 1818; J. M. Kinneir, Journey through Asia Minor, Armenia and Koordistan, London, 1818; R. Chandler, Travels in Asia Minor and Greece, 2d ed., Oxford, 1825; F. V. J. Arundell, A Visit to the Seven Churches of Asia with an Excursion into Pisidia, London, 1828; F. V. J. Arundell, Discoveries in Asia Minor, London, 1834; L. de Laborde, Voyage en Orient, Asie Mineure et Syrie, 2 vols., Paris, 1837–62; C. Texier, Description de l'Asie Mineure faite par ordre du gouvernement française de 1833 à 1837, 3 vols., Paris, 1839–49; C. Fellows, An Account of Discoveries in Lycia, London, 1841; W. F. Ainsworth, Travels and Researches in Asia Minor . . ., 2 vols., London, 1842; M. G. Comte de Choiseuil-Gouffier, Voyage pittoresque de la Grèce . . ., 2d ed., 4 vols., Paris, 1842; T. A. B. Spratt and E. Forbes, Travels in Lycia, London, 1847; C. Ritter, Die Erdkunde von Asien: Kleinasien, 2 vols., Berlin, 1858–59; G. Perrot, E. Guillaume and J. Delbet, Exploration archéologique de la Galatie et de la Bithynie . . ., 2 vols., Paris, 1862–72; C. Texier, Asie Mineure: Description géographique et archéologique, Paris, 1862; P. Le Bas, Asie Mineure depuis les temps les plus anciens jusqu'à la bataille d'Ancyre (1402), Paris, 1863; P. Trémaux, Exploration archéologique en Asie Mineure, Paris, 1863; C. Texier and R. P. Pullan, L'architecture byzantine ou recueil de monuments des premiers temps du Christianisme en Orient, London, 1864; C. T. Newton, Travels and Discoveries in the Levant, 2 vols., London, 1865; C. Texier and R. P. Pullan, The Principal Ruins of Asia Minor Illustrated and Described, London, 1865; W. Van Lennep, Travels in Little Known Parts of Asia Minor, 2 vols., London, 1870; L. Duchesne and M. Collignon, Rapport sur un voyage archéologique en Asie Mineure, BCH, I, 1877, pp. 361–76; E. J. Davis, Life in Asiatic Turkey, London, 1879; W. Fröhner, Terres cuites d'Asie Mineure, Paris, 1881; H. F. Tozer, Turkish Armenia and Eastern Asia Minor, London, 1881; S. Reinach, Chroniques d'Orient, RA, 1883–96, passim; O. Benndorf and G. Niemann, Reisen in Lykien und Karien, Vienna, 1884; J. R. S. Sterrett, Preliminary Report of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

an Archaeological Journey . . ., Boston, 1884; G. Hirschfeld, Paphlagonische Felsengräber, AbhBerlAk, 1885, I, pp. 1–57; J. R. S. Sterrett, The Wolfe Expedition to Asia Minor, Boston, 1885; W. R. Paton, Excavations in Caria, JHS, VIII, 1887, pp. 64–82; S. Reinach, ed., Voyage archéologique en Grèce et en Asie Mineure . . ., Paris, 1888; J. R. S. Sterrett, An Epigraphical Journey in Asia Minor, Boston, 1888; W. von Diest, Von Pergamon über den Didymos zum Pontus, Gotha, 1889; L. Petersen and F. von Luschan, Reisen in Lykien, Mylias und Kibyratis, Vienna, 1889; J. T. Bent, Recent Discoveries in Eastern Cilicia, JHS, XI, 1890, pp. 231–35; K. Humann and O. Puchstein, Reisen in Kleinasien und Nordsyrien, Berlin, 1890; K. Lanckoronski, G. Niemann and E. Petersen, Städte Pamphyliens und Pisidiens, 2 vols., Vienna, 1890–92; G. Radet, Les villes de la Pamphylie, RA, 3d Ser., XVI, 1890, pp. 203–24; J. T. Bent, A Journey in Cilicia Tracheia, JHS, XII, 1891, pp. 206–22; B. Graef, Grabdenkmäler aus Bithynien, AM, XVII, 1892, pp. 80–86; D. G. Hogarth. Modern and Ancient Roads in Eastern Asia Minor, J. Royal Geographic Soc., III, 1893, pp. 639–744; E. Naumann, Von Goldenen Horn zu den Quellen des Euphrat, Munich, Leipzig, 1893; G. Radet, La Lydie et le monde grec au temps des Mermnades, Paris, 1893; E. Fabricius, Archäologische Untersuchungen im westlichen Kleinasien, SbBerlin, II, 1894, pp. 899–920; W. R. Paton and J. L. Myres, Three Carian Sites, JHS, XIV, 1894, pp. 373–77; W. von Diest and M. Anton, Neue Forschungen im nord-westlichen Kleinasien, Gotha, 1895; A. Körte, Kleinasiatische Studien, AM, XX, 1895, pp. 1–19, XXII, 1897, pp. 1–51, XXIII, 1898, pp. 80–153, XXIV, 1899, pp. 1–45, 398–450, XXV, 1900, pp. 398–444; W. M. Ramsay, The Cities and Bishoprics of Phrygia, 2 vols., Oxford, 1895–97; R. Heberdey and A. Wilhelm, Reisen in Kilikien, Vienna, 1896; F. Sarre, Reise in Phrygien, Lykaonien und Pisidien, Archäologische-epigraphische Mitt. aus Österreich-Ungarn, XIX, 1896, pp. 26–57; J. C. Anderson, Exploration in Asia Minor during 1898, BSA, IV, 1897–98, pp. 79–94; J. C. Anderson, The Road System of Eastern Asia Minor, JHS, XVII, 1897, pp. 22–44; J. C. Anderson, A Summer in Phrygia, JHS, XVII, 1897, pp. 396–424, XVIII, 1898, pp. 81–128, 340–44; R. Heberdey and E. Kalinka, Bericht über zwei Reisen in südwestlichen Kleinasien, Vienna, 1897; P. Perdrizet, Terres cuites de l'Asie Mineure, MPiot, IV, 1897, pp. 209–20; J. Böhlau, Aus ionischen und italischen Nekropolen, Leipzig, 1898; J. C. Anderson and J. W. Crowfoot, Exploration in Galatia bis Halym, JHS, XIX, 1899, pp. 34–134, 280–318; R. Oberhummer and H. Zimmerer, Durch Syrien und Kleinasien: Reiseschilderungen und Studien, Berlin, 1899; W. R. Paton, Sites in Eastern Caria and South Lydia, JHS, XX, 1900, pp. 57–80; J. Strzygowski, Orient oder Rom, Leipzig, 1901; H. S. Cronin, First Report of a Journey in Pisidia, Lycaonia and Pamphylia, JHS, XXII, 1902, pp. 94–125, 339–76, XXIV, 1904, pp. 113–24; J. C. Anderson, F. and E. Cumont and H. Gregoire, Studia Pontica, 3 vols., Brussels, 1903–10; R. Leonhard, Paphlagonische Denkmäler, Breslau, 1903; W. M. Ramsay, Lycaonia, ÖJh, VII, Beiblatt, 1904, pp. 57–132; G. Weber, Zur Topographie der ionischen Küste, AM, XXIX, 1904, pp. 222–36; T. Wiegand, Reisen in Mysien, AM, XXIX, 1904, pp. 254–339; H. H. von Schweinitz, In Kleinasien, Berlin, 1905; G. L. Bell, Notes on a Journey through Cilicia and Lycaonia, RA, 4th Ser., VII, 1906, pp. 1–29, 382–414, VIII, 1906, pp. 7–36, 225–52, 390–401, IX, 1907, pp. 18–30; F. Cumont, Les cultes d'Asie Mineure, Rev. de l'h. des réligions, LIII, 1906, pp. 1–24; F. W. Hasluck, Bithynica, BSA, XIII, 1906–07, pp. 283–308; W. M. Ramsay, ed., Studies in the History and the Art of the Roman Empire, Aberdeen, 1906; J. Ficker and H. Rott, Kleinasiatische Denkmälern aus Pisidien, Pamphylien, etc., Leipzig, 1908; J. Keil, Zur Topographie der ionischen Küste süd'ich von Ephesos, ÖJh, XI, Beiblatt, 1908, pp. 135–54; J. Keil and A. von Premerstein, Bericht über eine Reise in Lydien und der südlichen Aiolis, Vienna, 1908; H. Gregoire, Rapport sur un voyage d'exploration dans le Pont et la Cappadocie, BCH, XXXIII, 1909, pp. 3–169; W. M. Ramsay and G. L. Bell, The Thousand and One Churches, London, 1909; A. M. Woodward and H. A. Ormerod, A Journey in South Western Asia Minor, BSA, XVI, 1909–10, pp. 76–136; J. G. C. Anderson, A Celtic Cult and Two Sites in Roman Galatia, JHS, XXX, 1910, pp. 163–67; F. F. C. Lehmann-Haupt, Armenien einst und jetzt: Reisen und Forschungen, 2 vols. in 3, Berlin, 1910–31; A. Philippson, Reisen und Forschungen im westlichen Kleinasien, 5 vols., Gotha, 1910–15; G. L. Bell, Amurath to Amurath, London, 1911 (2d ed., 1924); J. Keil and A. von Premerstein, Bericht über eine zweite Reise in Lydien, Vienna, 1911; H. von Moltke, Briefe über Zustande . . . in der Turkei aus den Jahren 1835 bis 1839, 7th ed., Berlin, 1911; W. M. Ramsay, Sketches in the Religious Antiquities of Asia Minor, BSA, XVIII, 1911–12, pp. 36–79; G. Seure, Archéologie thrace, RA, XVIII–XXIX, 1911–29, passim; F. Krischen, Festungsstudien in Karien und Ionien, AAnz, 1913, cols., 475–77; J. Keil and A. von Premerstein, Bericht über eine dritte Reise in Lydien, Vienna, 1914; R. Paribeni and P. Romanelli, Studi e ricerche archaeologiche nell'Anatolia meridionale, MALinc, XXIII, 1914, cols. 5–274; R. Leonhard, Paphlagonia, Berlin, 1915; A. Philippson, Antike Städteanlagen an der Westküste Kleinasiens, BJ, CXXVIII, 1916, pp. 109–31; F. Sartiaux, L'Asie Mineure grecque, Paris, 1919; B. Pace, La zona costiera da Adalia a Side, ASAtene, III, 1920, pp. 29–34; G. Guidi and A. Maiuri, Viaggio di esplorazione in Caria, ASAtene, IV–V, 1921–22, pp. 345–488; C. Manetti, L'Anatolia, Florence, 1922; V. Schultze, Altchristliche Städte und Landschaften, 3 vols., Gütersloh, 1922–30; C. Anti, Esplorazioni archeologiche nella Licia e nella Pamfilia, MALinc, XXIX, 1923, cols. 657–786; W. H. Buckler and W. M. Calder. ed., Anatolian Studies Presented to Sir W. M. Ramsay, Manchester, 1923; B. Pace, Ricerche nella regione di Conia, Adalia e Scalanova, ASAtene, VI–VII, 1923–24, pp. 343–452; W. H. Buckler, W. M. Calder and C. M. Cox, Asia Minor 1924, JRS, XIV, 1924, pp. 24–84, XVI, 1926, pp. 53–94, XVII, 1927, pp. 49–58, XVIII, 1928, pp. 21–40; E. Täschner, Das Anatolische Wegenetz nach osmanischen Quellen, Leipzig, 1924–26; A. Götze, Kleinasien zur Hethiterzeit, Heidelberg, 1925; J. Keil, Die älteste griechische Kolonisation Kleinasiens, Mitt. des Vereins klassischer Philol. in Wien, II, 1925, pp. 29–35; J. Sölch, Bithynische Städte im Altertum, Klio, XIX, 1925, pp. 140–88; E. Kalinka, Altes und Neues aus Thrakien, ÖJh, Beiblatt, XXIII, 1926, pp. 118–207; A. Maiuri, Explorazione archeologiche in Anatolia, Clara Rhodos, I, 1927, pp. 118–26; G. de Jerphanion, Mélanges d'archéologie anatolienne, Beirut, 1928; Monumenta Asiae Minoris Antiqua, 8 vols., Manchester, 1928–62; M. E. Maximova, Griechisch-persische Kleinkunst in Kleinasien nach den Perserkriege, AAnz, 1928, cols. 648–77; F. Sartiaux, Les civilisations anciennes de l'Asie Mineure, Paris, 1928; H. H. von der Osten, Explorations in Central Anatolia, Chicago, 1929; W. M. Ramsay, Asianic Elements in Greek Civilization, 2d ed., New Haven, 1929; R. Dussaud, La Lydie et ses voisins aux hautes époques, Paris, 1930; R. Vulpe, L'âge du fer dans les régions thraces de la peninsule balcanique, Paris, 1930; R. M. Riefstahl, Turkish Architecture in Southwestern Anatolia, Cambridge, Mass., 1931; A. Götze, Kleinasien, Munich, 1933 (2d ed., 1957); A. Laumonier, Notes sur un voyage en Carie, RA, 6th Ser., II, 1933, pp. 31–55; H. H. von der Osten, Discoveries in Anatolia (1930–31), Chicago, 1933; C. H. Sherrill, Mosaics in Italy, Palestine, Syria, Turkey and Greece, London, 1933; S. Guyer, Les monuments chrétiens en Asie Mineure, Atti III Cong. int. Archeol. Cristiana (1932), Rome, 1934, pp. 433–58; L. Robert, Rapport sommaire sur un voyage en Carie, RA, 6th Ser., VI, 1935, pp. 152–63; H. Swoboda, J. Keil and F. Knoll, Denkmäler aus Lykaonien, Pamphilien und Pisidien, Brünn, 1935; A. Philippson, Das südliche Ionien, Berlin, Leipzig, 1936; G. Iacopi, Esplorazioni e studi in Paflagonia e Cappadocia, Rome, 1937; A. H. M. Jones, The Cities of the Eastern Roman Provinces, Oxford, 1937; L. Robert, Etudes anatoliennes, Paris, 1937; F. W. Deichmann, Ergebnisse einer kleinasiatischen Reise, AAnz, 1938, cols. 205–26; D. Levi, Le grandi strade romane in Asia, Spoleto, 1938; W. M. Ramsay, Anatolica quaedam, JHS, L, 1938, pp. 263–87; S. Talip, Le strade romane in Anatolia, Spoleto, 1938; W. M. Calder and J. Keil, ed., Anatolian Studies Presented to W. H. Buckler, Manchester, 1939; F. K. Dörner and R. Naumann, Forschungen in Kommagene, Berlin, 1939; M. Pfannenstiel, Die altsteinzeitlichen Kulturen Anatoliens, Berlin, 1941; K. Bittel, Kleinasiatische Studien, Istanbul, 1942; N. Arsan, Stehende weibliche Gewandstatuen des I. und II. Jahrhunderts n. Chr. in Kleinasien, Belleten, X, 1946, pp. 425–70; G. M. A. Hanfmann, Archaeology in Homeric Asia Minor, AJA, LII, 1946, pp. 151–54; L. and J. Robert, Notes sur un voyage archéologique en Pisidie, en Carie et à Ankara, CRAI, 1948, pp. 401–03, 430–32, 530–31; J. Berard, Stratigraphie comparée de l'Asie Antérieure aux troisième et deuxième millenaires, Rev. hist., LXXIV, 1950, pp. 209–17; A. Walther et al., Kleinasien und Byzanz (Istanbuler Forsch., XVII), Berlin, 1950; K. Robert, Contributions à la topographie des villes de l'Asie Mineure méridionale, CRAI, 1951, pp. 254–59; F. J. de Waele, Antiek Anatolië, Nijmegen, 1952; R. Dussaud, Prelydiens, hittites et achéens, Paris, 1953; G. M. A. Hanfmann, Ionia: Leader or Follower? Harvard S. in Classical Philology, LI, 1953, pp. 1–37; K. Erdmann, Beobachtungen auf einer Reise in Zentralanatolien im Juli 1953, AAnz, 1954, cols. 106–207; I. W. Macpherson, Roman Roads and Milestones in Galatia, Anatolien S., IV, 1954, pp. 111–20; J. Mellaart, Preliminary Report on a Survey of Preclassical Remains in Southern Turkey, Anatolian S., IV, 1954, pp. 175–240; L. and J. Robert, La Carie, 2 vols., Paris, 1954; M. V. Seton Williams, Cilician Survey, Anatolian S., IV, 1954, pp. 121–74; E. Akurgal, Phrygische Kunst, Ankara, 1955; K. Bittel, Funde im östlichen Galatien, Istanbuler Mitt., VI, 1955, pp. 22–41; M. Beck, Anatolien, Zurich, Stuttgart, 1956; C. A. Burney, Northern Anatolia before Classical Times, Anatolien S., VI, 1956, pp. 179–203; S. Lloyd, Early Anatolia, Harmondsworth, 1956; F. Stark, The Lycian Shore, London, New York, 1956; G. E. Bean and J. M. Cook, The Carian Coast: III, BSA, LII, 1957, pp. 58–146; F. Cassola, La Ionia nel mondo miceneo, Naples, 1957; K. Erdmann, Weitere Nachträge zu den "Beobachtungen auf einer Reise in Zentralanatolien," AAnz, 1957, cols. 361–72; P. Verzone, Città ellenistische e romane dell'Asia Minore, Palladio, VII, 1957, pp. 54–68, IX, 1959, pp. 1–18; M. B. Sakellariou, La migration grecque en Ionie, Athens, 1958; G. E. Bean, Notes and Inscriptions from Pisidia, Anatolian S., IX, 1959, pp. 67–117, X, 1960, pp. 43–82; T. Bossert, Reisebericht aus Anatolien, Orientalia, XXVIII, 1959, pp. 271–91, XXIX, 1960, pp. 214–26; C. A. Roebuck, Ionian Trade and Civilization, New York, 1959; A. Frova, L'arte di Roma e del mondo romano, Turin, 1961, pp. 719–838; W. Müller-Wiener, Mittelalterliche Befestigung im südlichen Ionien, Istanbuler Mitt., XI, 1961, pp. 5–122; E. Akurgal, The Early Period and the Golden Age of Ionia, AJA, LXVI, 1962, pp. 369–79; G. E. Bean and T. B. Mitford, Sites Old and New in Rough Cilicia, Anatolian S., XII, 1962, pp. 185–217; J. Mellaart, Anatolia: c. 4000–2300 B.C., Cambridge, 1962; D. Winfield and J. Wainwright, Some Byzantine Churches from the Pontus, Anatolian S., XII, 1962, pp. 131–61; K. Erdmann, Das anatolische Karavansaray des 13. Jahrhunderts, Berlin, 1963; R. M. Harrison, Churches and Chapels of Central Lycia, Anatolian S., XIII, 1963, pp. 117–51; W. Orthmann, Die Keramik der frühen Bronzezeit aus Inneranatolien, Berlin, 1963; T. Özgüç, Early Anatolian Archaeology in the Light of Recent Research, Anatolia, VII, 1963, pp. 1–21; G. R. Young, Three Cilician Castles, Anatolian S., XV, 1965, pp. 113–34. *Islamic art*: H. Glück, Türkische Kunst, Budapest, Constantinople, 1917; K. Klinghardt, Türkische Bäder, Stuttgart, 1927; A. Gabriel, Monuments turcs d'Anatolie, 2 vols., Paris, 1931–34; R. M. Riefstahl, Turkish Architecture in Southwestern Anatolia, Cambridge, Mass., 1931; R. Nour, L'art et l'architecture turcs, Rev. de Turcologie, I, 1932, pp. 172–208; R. S. Atabinen, Les caractéristiques de l'architecture turque, Paris, 1938; C. E. Arseven, L'art turc depuis son origine jusqu'à nos jours, Istanbul, 1939; A. Gabriel, Voyages archéologiques dans la Turquie orientale, Paris, 1940; A. Gabriel, Chateaux turcs du Bosphore, Mem. Inst. fr. archéol. de Stamboul, VI, 1943, pp. 1–123; E. Diez, Türk Sanati, Istanbul, 1946; R. Anhegger, Beiträge zur frühosmanischen Baugeschichte, Symbolae in honorem Zeki Velidi Togan, Istanbul, 1950–55, pp. 301–30; C. E. Arseven, Les arts décoratifs turcs, Istanbul, 1952; E. Diez, Der Baumeister Sinan und sein Werk, Atlantis, XXV, 1953, pp. 183–86; K. Erdmann, Türkische und islamische Kunst, Atlantis, XXV, 1953, pp. 187–88; U. Vogt-Göknil, Türkische Moscheen, Zürich, 1953; K. Erdmann, Notizien zum inneranatolischen Karavansaray: Beobachtungen auf einer Reise im Juli 1953, Kunst des Orients, II, 1955, pp. 5–29; C. and G. Holzmeister and R. Farhner, Bilder aus Anatolien, Höhlem und Hane in Kappadokien, Vienna, 1955; U. Vogt-Göknil, Byzanz und die türkische Baukunst, Atlantis, XXIX, 1957, pp. 540–47; B. Ünsal, Turkish Islamic Architecture in Seljuq and Ottoman Times: 1071–1923, London, 1959; S. K. Yetkin,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

The Evolution of Architectural Form in Turkish Mosques (1300–1700), Stusia Islamica, XI, 1959, pp. 73–91; K. A. C. Creswell, A Bibliography of the Architecture, Arts and Crafts of Islam, London, 1961, cols. 439–78; S. K. Yetkin, L'architecture turque en Turquie, Paris, 1962; K. Erdmann, Das anatolischen Karavansaray des 13. Jahrhunderts, Berlin, 1963; U. Vogt-Göknil, Turquie ottomane, Fribourg, 1965. See also the bibliogs. for OTTOMAN SCHOOLS; SELJUK ART.

MONUMENTAL CENTERS. *Historical topography.* In the 3d and 2d millenniums part of Asia Minor was an Assyrian colony (excavation finds at Kültepe), whereas the indigenous peoples were perhaps the Proto-Hatti, who seem to be the oldest known population in Asia Minor and Syria. By 1600 B.C. the entire Anatolian area was ruled by the Hittites. In the 1st millennium the population distribution may be reconstructed as follows: the northwestern mountains were inhabited by the Mosci (called by the Assyrians Muški and Muškayē); the southwest, up to the Taurus range, by the Tibareni; the central plateau by the Cappadocians; the area between the Taurus and the River Halys by the Cataonians; the central Taurus by the Pisidians, the Isaurians, the Lycaonians, and the Solimi; the southeast by the Cilicians; the southern coast by the Pamphylians; the middle of the peninsula by the Phrygians; the coast of the Black Sea by the Paphlagonians; the mountains of northwestern Phrygia by the Mysians; the area south of the Mysian territory by the Lydians, with Sardis as their capital; the southern coast, between the Carian and Pamphylian territory, by the Lycians.

The question as to the origins of the Greek centers of Asia Minor is still open to debate, but it seems that the colonization on the part of Hellenic tribes took place largely during the Iron Age (see GREEK ART, EASTERN). As the kingdom of Lydia grew in power, a series of wars took place, starting in the 7th century, between the Lydians and the Greeks. Then, after the establishment of the Persian Kingdom in 550 B.C., wars between the Greeks and the Persians culminated in the conquest by Alexander the Great. At his death, various apportionments saw the Seleucids gain control over the entire part of the peninsula west of the Taurus, whereas, following the invasion of the Gauls, the new kingdom of Galatia was formed. The decline of the Seleucids also marked the decline of Hellenism in the East. At the death of Trajan (A.D. 117), the Roman province of Asia Minor included: Proconsular Asia, comprising the central region and the islands; Bithynia and Pontus, along the coast of the Euxine sea; Lycia and Pamphylia, to the south, also including a part of Pisidia; Cilicia, along the southern coast; Galatia, including Lycaonia and Paphlagonia; and Cappadocia, the easternmost part.

The political reforms begun by Diocletian and the division of the empire into dioceses led to a new distribution of the regions of Anatolia within the confines of the Roman Empire. From the end of the 4th to the middle of the 6th century the provinces were divided as follows: the Asian Diocese, including the Hellespont, Proconsular Asia, the off-shore islands, Caria, Lydia, Pacatian Phrygia, Salutare Phrygia, Lycaonia, Pisidia, Pamphylia, and Lycia; the Pontic Diocese, including Bithynia, the Onoria province, Paphlagonia, Hellenopontus, Polemonic Pontus, Proconsular Galatia, Salutare Galatia, Cappadocia Major, Cappadocia Minor, Armenia Major, and Armenia Minor; the Diocese of Oriens, including Isauria, Cilicia Major, Cilicia Minor, and the island of Cyprus.

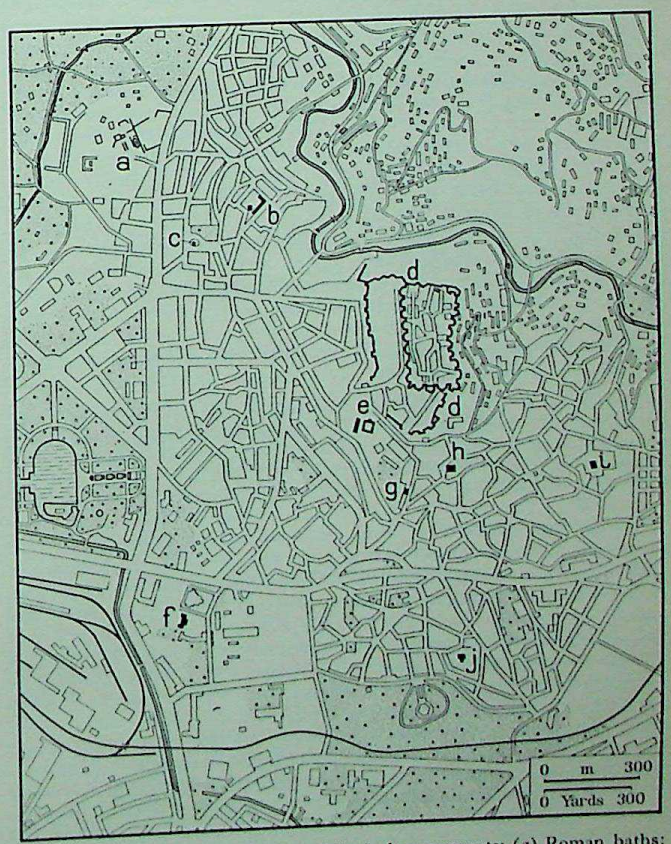
Justinian rearranged the territorial borders of the provinces in Asia Minor: opposite Byzantium he set up the small province of Pontus Major, with Kalchedon (Chalcedon) as the administrative center, and out of the Armenian territory, a part of Polemonic Pontus and the Euphrates region, he formed four provinces, all of them called Armenia (I, II, III, IV). Moreover, he partially eliminated the clear separation between civil and military authority established by Diocletian, hence foreshadowing the institution of the themes governed by *strategoi*, introduced in the 7th century when the emperor Heraclius gathered the necessary military forces in Anatolia for checking the Sassanian attack. Instead of an impromptu organization thrown together in the moment of danger, a veritable reform of the provincial administration was undertaken, as a result of which the province corresponded to the military unit. The area existed under this thematic regime for five centuries, withstanding the Arabian attempts at invasion in the 7th and 8th centuries, until the arrival of the Seljuk Turks, followed by the Ottomans, who carried the conquest and the Islamic conversion of the country to completion. In 1453, when Constantinople fell into Ottoman hands, the history of Turkey became part of the history of the Ottoman Empire.

The present-day Republic of Turkey, which rose from the ashes of the Ottoman Empire, was proclaimed on October 29, 1923 with Mustafa Kemal as president. Administratively it is divided into 58 vilayet (provinces); the vilayet are in turn divided into *kaza* (districts), the *kaza* into *nahiye* (counties), and the *nahiye* into *kasaba*, or villages.

In the following exposition the monumental centers have been grouped into two regions: Asiatic Turkey and European Turkey.

Asiatic Turkey. Ankara (anc. Ancyra). Capital of the Turkish Republic since October 1, 1923, Ankara occupies an important strategic position as a center of dissemination for all of Anatolia. Already inhabited in Phrygian times, it was ruled by the Lydians and the Persians; it then passed to the Seleucids and, during the 3d century, to the house of Attalus. In 278–277 B.C., it was occupied by the Gauls and became the capital of the Tectosages within the Galatian confederation. When the kingdom of Galatia was annexed by Rome in 25 B.C., Ancyra became the administrative capital of the new province. The city was important throughout the Roman imperial age and the early centuries of the Byzantine Empire, but beginning in the 7th century, it went into a rapid decline as a result of the invasions of the Sassanians (620) and later of the Arabs (654, 708, 806, 838), who took possession of it in 931. After the victorious battle of Manzikert (1071), the Turks seized it from the Byzantines and, except for a brief occupation by the Crusaders (1011–1127), retained possession of it. An important caravan center on the route to Persia, it regained a certain prosperity under Ottoman rule, when it became known as Ankara. After having been a center of the national resistance movement during the Greek occupation in 1920, it was made the capital of the new Turkish Republic in 1923.

A necropolis which came to light during excavations for the railroad station has been attributed to the Phrygian period (5th cent. B.C.). The most important classical monument is the Temple of Rome and Augustus; dating from perhaps the 2d century B.C., it is a Corinthian octastyle peripteral temple and bears the testament of Augustus carved in Greek and Latin on the walls of the sanctuary. Another important Roman structure is the public baths, dating from the late 2d or the beginning of the 3d century; the plan is of the type common in Asia Minor and contains a large communicating quadriporticus. Apart from an interesting tomb with frescoed rooms (4th cent.), a commemorative column is all that remains of the late Roman Age. The Byzantine fortifications of the citadel, consisting of a lower wall and a massive upper wall, are, instead, well preserved. The lower wall had a double-tower gate and the upper wall (A.D. 858), completely furnished with beaked turrets, was entered through a square gate projecting from the wall; a round tower was attached to one of the corners. The Konya sultans completed and restored the Byzantine fortifications; a vast *enceinte* wall, now destroyed, was then built by the Ottomans to protect the city from marauders and rebels. Among the Seljuk mosques in Ankara, the most important



Ankara, plan of the original area. Principal monuments: (*a*) Roman baths; (*b*) Temple of Augustus and Haci Bayram Cami; (*c*) column; (*d*) walls of the citadel; (*e*) *bedesten* and Hittite Museum; (*f*) Ethnographic Museum; (*g*) Ahi Elvan Cami; (*h*) Arslan Hane Cami; (*i*) Yeni Cami; (*j*) Imaret Cami.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

is the Arslan Hane Cami, rectangular in form with four rows of tall wooden columns, six to a row, and a stucco and ceramic mihrab. The mosque was apparently built in 1210, the mimbar in 1289, and important restorations were probably made in 1330. The Ahi Elvan Cami, similar but smaller in size, was built a little before 1382; another interesting mosque is the Alaeddin. Also notable is the old *bedesten* built between 1464 and 1471, with an inner nucleus of ten domes and shops set around the rectangular perimeter, and now housing the Archaeological Museum.

Since 1931, the modern city has developed in accordance with the town-planning scheme of the Austrian architect Jansen. Especially interesting are the Presidential Palace, the New Theater, and the Mausoleum of Ataturk, a vast complex of buildings set on a hill, built between 1944 and 1953 by the architects Emin Onat and Arhan Arad. Ethnological Museum; Archaeological Museum.

Bibliog. C. Texier, Description de l'Asie Mineure, I, Paris, 1839, pp. 171–206; W. J. Hamilton, Researches in Asia Minor, Pontus and Armenia, I, London, 1842, pp. 418–29; C. Texier, Asie Mineure, Paris, 1862, pp. 479–92; E. Guillaume, Le temple de Rome et d'Auguste à Ancyre, RA, XXII, 1870–71, pp. 347–60, XXIII, 1872, pp. 29–43; M. Schede, Ausgrabungen des Deutschen Archäologischen Instituts in Ankyra und Aezani, Gnomon, II, 1926, pp. 746–47; G. de Jerphanion, Mélanges d'archéologie anatolienne, Beirut, 1928; E. Mamboury, Ankara, Ankara, 1933; D. Krencker and M. Schede, Der Tempel in Ankara, Berlin, 1936; F. and H. Miltner, Epigraphische Nachlese in Ankara, ÖJh, XXX, Sup., 1936–37, cols. 9–66; M. Schede and H. Schultz, Ankara und Augustus, Berlin, 1937; G. Chimienti, Cesare Augusto e il monumento ancirano, Trieste, 1938; N. Dolunay, Excavations by Order of the Turkish Historical Society in Çankırıkapı, Belleten, V, 1941, pp. 261–66 (in Turk.); N. C. Gälekli, Ankara: Tarih-Arkeoloji, Ankara, 1948; M. Akok, Some Traces of Ancient Habitations Found in the Town of Ankara, with Descriptions of Three of Them, Belleten, XIX, 1955, pp. 309–29 (in Turk.); A. M. Mansel, EAA, s.v. (bibliog.); N. Firatli, Finds from the Phrygian Necropolis at Ankara, Belleten, XXIII, 1959, pp. 203–08; L. Piccinato, L'esperienza del piano di Bursa, Urbanistica 36–37, 1962, pp. 110–36.

Aegae. This was a Mysian city built by the Aeolians on mountainous terrain overlooking the Kaikos and Maeander (Menderes) valleys. It was a part of the Lydian and Persian kingdoms, although it enjoyed a certain independence; conquered by Alexander the Great, it became a part of the Pergamum kingdom and, in 129 B.C., was incorporated into the Roman province of Asia. During the Middle Ages it was completely abandoned. Nothing of it remains now but a few ruins. The city was set out on terraces, one of which was occupied by the acropolis, another by the theater and its related buildings, and another by the stadium, similar in plan to the Pergamum stadium. Only a few sections of the oldest stone walls, in polygonal construction, are still preserved; the enlargements and additions dating from the Attalid period, which encompass the entire plateau, are in a better state. The agora is located in the northeastern part of the city and on the east side adjoins a three-story L-shaped building, the remains of a stoa from Hellenistic times (late 3d–early 2d cent. B.C.). On the west side of the acropolis were two peripteral temples, one of them set into a stoa with propylaea along the two sides. Below this temple is a terrace which to the north contained a small temple, at the center a theater hewn from the rock, and to the south a square with porticoes on three sides; all these buildings date from the Greek period. The other terrace contains the stadium. Scattered over the surrounding valleys and hills are various necropolises which have yielded rich grave fittings dating from classical antiquity.

Bibliog. M. Clerc, Les ruines d'Aegae en Eolide, BCH, X, 1886, pp. 275–96; G. Radet and H. Lechat, Notes de géographie ancienne, I: La ville d'Aegae en Eolide, BCH, XI, 1887, pp. 391–96; R. Bohn and C. Schuchhardt, Altertümer von Aegae, Berlin, 1889; M. Clerc, Fouilles d'Aegae en Eolide, BCH, XV, 1891, pp. 213–37; L. Rocchetti, EAA, s.v. Aigai.

Ahlatlibel. About nine miles south of Ankara, Ahlatlibel was an important point of contact between the culture of the highlands and that of western Anatolia and has provided useful clues for the dating of the earliest civilizations of central Anatolia. The site was inhabited mostly during the early Bronze Age I and II, but there are also traces of a later occupation. The monumental remains consist of a fortress or castle, about 130 ft. wide, where the residential quarters were contrived out of, or incorporated into, the wall itself, leaving an unevenly shaped open space in the middle. The thickness of the walls would seem to indicate that a second story existed, but the absence of thresholds makes it difficult to interpret the ruins. There are also traces of an earlier occupation; a necropolis has been discovered inside the fortress and another was built over it after the place was abandoned. According to some scholars, the fortress does not date from before the beginning of the early Central-Anatolian Bronze Age, and its destruction was contemporary with the destruction of the Alaca Hüyük civilization, to which the royal tombs belong; according to others, the occupation ended at a later period (judging by the pottery, which is more advanced in character) but still within the confines of the Early Bronze Age.

Bibliog. K. Bittel, Prähistorische Forschungen in Kleinasien, Istanbul, 1934, pp. 72–74; H. Z. Koşay, Ahlatlibel Hafriyatı, Türk Tarih Arkeoloju ve Etn. Dergisi, II, 1934, pp. 3–100, 307–08; K. Bittel, Die prähistorische Seidlung bei Ahlatlibel, Archiv für Orientforschung, XI, 1936–37, pp. 38–56; T. Özgüç, Die Bestattungsgebräuche in vorgeschichtlichen Anatolien, Ankara, 1948, passim; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, passim; S. Lloyd, Early Anatolia, Harmondsworth, 1956, pp. 39, 93; A. Götze, Kleinasien, 2d ed., Munich, 1957, p. 34; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, passim; W. Orthmann, Die Keramik der frühen Bronzezeit aus Inneranatolien, Berlin, 1963, passim.

Aizani. A Phrygian city near the mouth of the Rhydakos, Aizani enjoyed its greatest prosperity during the Roman period. All that remains of the ancient city, situated near the Turkish village of Çavdarhisar, are the imposing ruins of the Temple of Zeus, a theater, and a stadium. The Temple of Zeus was pseudodipteral with 8 and 15 Ionic columns set on a plinth; the cella had four composite columns on the front and two more of the same order between the antae of the *opistodomos* courtyard. German excavations have brought to light the acroteria. The temple was set in a spacious colonnaded courtyard. The theater is poorly preserved, with the auditorium disposed in two sections of nine sloping blocks of seats and a rich *frons scaenae* with composite columns below and Corinthian columns above, which led to the stadium. The latter, however, was set on the same axis as the theater. In the stadium, which was rounded at one end and enclosed by the stage wall of the theater at the other, many rows of seats are still preserved.

Bibliog. G. T. Keppel, Narrative of a Journey Across the Balkans, II, London, 1831; A. Körte, Das Altar des Zeustempels von Aizanoi, Festschrift Benndorf, Vienna, 1898, pp. 209–14; M. Schede, Ausgrabungen des Deutschen Archäologischen Instituts in Ankyra und Aezani, Gnomon, V, 1929, pp. 60–61; M. Schede, Untersuchungen am Tempel in Aezani, Archäol. Inst. des deutschen Reiches: Bericht über die Hundertjahrfeier, Berlin, 1930, pp. 227–31; EAA, s.v.

Aksaray. Perhaps this was the ancient city of Kurshaura, but more likely it was built on the site of the Byzantine city Archelais. Occupied by the Seljuks at the end of the 11th century, it was temporarily taken over by the Mongolians, and then annexed by the Karaman beys. One of the most beautiful Seljuk caravansaries, Sultanhanı (VIII, PL. 161) is to be found there: it consists of a courtyard with lateral arcades and various chambers with a small, freestanding mosque in the center. At the far side of the courtyard stands a hall with five barrel-vaulted aisles. The portals are in stalactite form.

Bibliog. A. Gabriel, Monuments turcs d'Anatolie, 2 vols., Paris, 1931–34; B. Ünsal, Turkish Islamic Architecture in Seljuq and Ottoman Times, 1071–1923, London, 1959.

Alaca Hüyük. Situated about 12 miles from Boğazköy, the area was visited in 1835 by Hamilton, who located the Gate of the Sphinxes, was systematically investigated by Turkish archaeologists between 1935 and 1939 and between 1940 and 1948. Other test excavations are planned in order to more clearly establish the area covered by the Hittite city. During excavations, a sequence of four levels was uncovered. Level IV, dating from the Chalcolithic Age, shows characteristics similar to Level O at Alişar Hüyük. In Level III, dating from the early Bronze Age II, 13 rich pit graves roofed with beams have come to light; they belong to local dynasties, were probably located outside the city proper, and date from 2400–2200 B.C. In their rich abundance of grave fittings they have shed unexpected light upon the cultural level of this period in the Anatolian highlands, otherwise to be considered poor. The numerous articles of gold and pottery and especially the "standards" (I, PL. 517) and the anthropomorphic and zoomorphic figures made of bronze and various alloys would seem to link this culture to the regions to the north and northeast (Pontic area; they resemble, however, the objects from Maikop) through a series of other finds (Horoztepe, IX, PL. 417; Hasanoğlan). In Level II, dating from Hittite times, are the double-revetted walls with the Gate of the Sphinxes, of which only two of the original four sphinxes are extant. Two series of carvings, one of which is unfinished, on the front of the monumental entranceway, have been dated to the Old Kingdom (by Mellaart) or to the Hittite empire (by Frankfort, Vieyra, and others). Inside the city, joined to the Gate of the Sphinxes by a propylaeum, stands the palace, or more likely the temple, with an arcade along one side of the flagged courtyard, as well as a group of simpler buildings separated by narrow lanes. This period is divided into subphases and stretches from the time of the Assyrian colonies of Cappadocia (20th–19th cent. B.C.) to the end of the Hittite empire. The first level (post-Hittite) has yielded Phrygian pottery and inscriptions in archaic Phrygian; the architectural remains of this period are scanty.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

BIBLIOG. T. Macridi Bey, La Porte des Sphinx à Eyuk (Mitt. der Vorderasiatische Gesellschaft, XIII, 3), Berlin, 1908; R. O. Arik, Les fouilles d'Alaca Höyük (1935), Ankara, 1937; H. Z. Koşay, Ausgrabungen von Alaca Höyük, Ankara, 1944; H. Z. Koşay and M. Akok, The Pottery of Alaca Höyük, AJA, LI, 1947, pp. 152–57; H. Z. Koşay, Les fouilles d'Alaca Höyük: 1937–39, Ankara, 1951; H. G. Güterbock, Notes on Some Hittite Monuments, Anatolian S., VI, 1956, pp. 53–56; M. J. Mellink, The Royal Tombs at Alaca Höyük and the Aegean World, The Aegean and the Near East, New York, 1956, pp. 39–58; A. Götze, Kleinasien, 2d ed., Munich, 1957, pp. 37–57, 202; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, passim; G. Garbini, EAA, s.v.

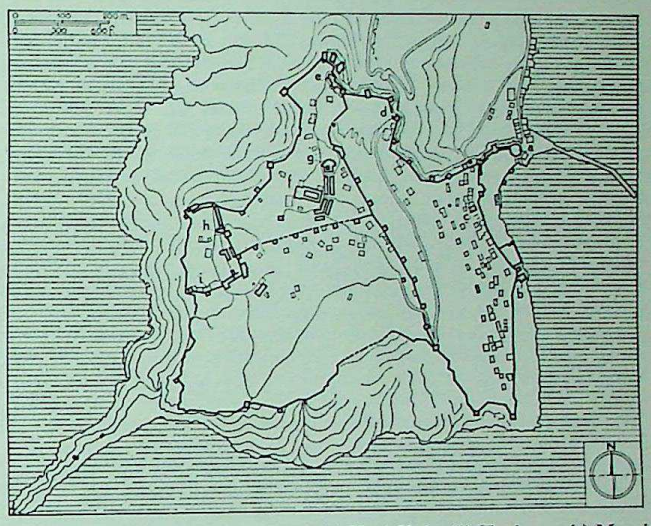
Alahan Monastır. A vast complex of monastic buildings on the slopes of a mountain overlooking the great road between Mut and Selefke, Alahan Monastır was built in the late 5th century of the Christian Era. It consists of two large churches (1 and 3) set on an axis and linked by an outer arcade which runs along the right-hand side and is interrupted halfway along by a structure, probably a baptistery, of smaller dimensions and a richly decorated niche set in the front portico. Church 3, the best preserved, is ornamented with cornices and capitals and carved designs in the friezes. Church 1, now partially excavated by Gough, has three aisles; still standing *in situ* is the entrance door with sculptures on the piers depicting the archangels Michael and Gabriel treading on a serpent with a woman's head and the architrave with figures of the Cherubim (as described in the vision of Ezekiel). The monks' cells were hewn into the rock. Nearby is a rock church with frescoes probably dating from the iconoclastic period.

BIBLIOG. A. C. Headlam, Ecclesiastical Sites in Isauria, London, 1893; M. Gough, Some Recent Finds at Alahan, Anatolian S., V, 1955, pp. 115–23; P. Verzone, Alahan Manastır, Istanbul, 1955; G. H. Forsyth, Architectural Notes on a Trip through Cilicia, Dumbarton Oaks Pap., XI, 1957, pp. 223–36 at 228; M. Gough, A Church of the Iconoclast (?) Period in Byzantine Isauria, Anatolian S., VII, 1957, pp. 153–61; M. Gough, The Church of the Evangelists at Alahan, Anatolian S., XII, 1962, pp. 173–84; N. Thierry, Notes sur l'un des bas-reliefs d'Alahan Manastir, CahA, XIII, 1962, pp. 43–47; M. Gough, Excavations at Alahan Monastery, Anatolian S., XIII, 1963, pp. 105–15.

Alalakh (Tell Açana). The city situated on the Syrian border, on the northern banks of the Orontes, was excavated by C. L. Woolley between 1936 and 1949. It was inhabited uninterruptedly from the 4th millennium B.C. to the beginning of the 12th century B.C., when it was destroyed by the invasions of the Peoples of the Sea. It was the seat of a small kingdom which fell under the cultural influence at first of Mesopotamia and then (beginning with the 12th dynasty, beginning of the 2d millennium) of Egypt. At the end of the 12th dynasty, Alalakh became a part of the Semitic state of Yamhad, governed by the Amorite dynasties with Aleppo as their capital city. It was the royal residence of Yarim-Lim, a powerful king who was in touch with Hammurabi of Babylonia, and Zimrilim of Mari. It then reverted to Egyptian rule at the beginning of the 18th dynasty and was governed by a vassal dynasty founded by Niqmepa, at which time it enjoyed its greatest prosperity. Dating from this period are the numerous Akkadian tablets found there. The remains of a palace with mud brick columns of unquestionably Mesopotamian origin are dated to the 3d millennium (2700–2350 B.C.) as is a ruined temple with a forecourt and a raised sanctuary chamber. Much more interesting are the palaces of the 2d millennium, comparable to those of Crete. The Palace of Yarim-Lim (18th cent. B.C.) was divided into two wings by a large courtyard; its second floor was decorated with frescoes and it anticipated several elements which were to become typical of 1st-millennium Syrian structures — the *hilani* and the decorations on orthostats. The walls were of mud brick with a wooden framework. The Palace of Niqmepa (XIII, PL. 357), dating from the Late Bronze Age (end of 15th cent. B.C.), marks a transitional stage between the Palace of Yarim-Lim and the *hilani* and is comparable to the Palace of Ugarit, with which it is nearly contemporary. Dating from the same period is a temple with three consecutive chambers. Among the sculpture, a stone head, perhaps a portrait of Yarim-Lim (I, PL. 520), and a statue of Idri-mi (XIII, PL. 359), covered with a lengthy inscription, are notable. Also of great interest is the pottery, with decorated bands, in which the motifs of Hurrian earthenware are taken up. Cypriote and Mycenaean pottery have also been found. The finds of the 2d millennium are, according to the studies of S. Smith (*Alalakh and Chronology*, London, 1940), of key importance for the reconstruction of the chronology of the 2d millennium.

BIBLIOG. C. L. Woolley, The excavations at Atchana-Alalakh, Antiquaries, J., XIX, 1937, pp. 1–37; S. Smith, Alalakh and Chronology, London, 1940; S. Smith and C. L. Woolley, Rhe Statue of Idri-mi, London, 1949; D. J. Wiseman, The Alalakh Tablets, London, 1953; C. L. Woolley, A Forgotten Kingdom, London, 1953; C. L. Woolley, C. J. Gadd, and R. D. Barnett, Alalakh: An Account of the Excavations at Tell Atchana in the Hatay, 1937–41, London, 1955.

Alanya (anc. Coracesium). The tiny peninsula situated betwene Pamphylia and Cilicia Trachea, was, to all intents and purposes, a fortress. A mountain jutting into the sea and hence easy to defend, it was called in classical antiquity Korakesion or Coracesium, in Byzantine times Kalonoros (beautiful mountain), and following the Turkish conquest, Alāuiyya, after Alaeddin (Ar., 'Alā ud-Dīn Kaykūbad), who conquered it in 1221. Alaeddin undertook the building of massive fortifications (1226–31) and repopulated the village. The promontory, about 1½ miles long and 853 feet high, was protected by a handsome *enceinte* wall, still perfectly intact. The most



Alanya, plan. Principal monuments: (*a*) Kızıl Kule; (*b*) Tophane; (*c*) Mayyit Kapısı; (*d*) Kale Kapısı; (*e*) Ehmedek Fortress; (*f*) *han* and *bedesten*; (*g*) Süleymaniye Cami; (*h*) Byzantine church; (*i*) Iç Dale.

important monument among the fortifications is Kızıl Kule (the red tower), a massive octagonal fortress that bars access to the harbor. Nearby is the shipyard shed with pointed archways; another tower flanked the other side of the harbor. The most important of the gates into the city is Kale Kapısı; a stronghold, Ehmedek, looms large in the wall system. In the vicinity of this fortress lies the ancient commercial center with a *han* and a *bedesten*. A small fortress (Iç Kale), which contains within its walls a small Byzantine church, crowns the promontory.

BIBLIOG. F. Beaufort, Karamania, London, 1817, pp. 167–76; R. Heberdey and A. Wilhelm, Reisen in Kilikien, Vienna, 1896, pp. 136–47; J. Ficker and H. Rott, Kleinasiatische Denkmäler, Leipzig, 1908, pp. 70–71, 79–80; R. M. Riefstahl, Turkish Architecture in Southwestern Anatolia, Cambridge, Mass., 1931, pp. 53–60; D. Storm Rice, Alanya (Provisional Report on the Inscriptions), Anatolian S., IV, 1954, pp. 13–14; Summary of Archaeological Work in Turkey in 1953, Anatolian S., IV, 1954, pp. 14–20; A. Seton Lloyd and D. Storm Rice, Alanya, London, 1958; K. Erdmann, Der Kargi Han bei Alanya, Kunst des Orients, III, 1959, pp. 1–13.

Alinda (mod. Demir Cideresi). The history of this Carian city presents a number of serious gaps. A fortress city, it stood on a hill and was surrounded by turreted walls built of evenly cut blocks of granite, still in excellent condition. In the upper part of the city, a small well-preserved theater from Hellenic times is to be found, whereas the agora, supported on the valley side by a three-story construction, the base of which is still preserved, is situated in the lower part. Near the city are the remains of a Roman aqueduct on arches and numerous rock-cut tombs.

BIBLIOG. P. Trémaux, Exploration archéologique en Asie Mineure, Paris, 1863; EAA, s.v. Alinda.

Alişar Hüyük. This was one of the first Anatolian sites explored (1927–32, by the University of Chicago). Unfortunately, certain difficulties came up at the beginning of the work, making it impossible to tabulate exactly the data obtained, for which reason various changes in the definitive publication were made necessary. The site did not yield archaeological remains referable to the period of Hittite political and military power. In fact, that period, which the excavation reports described as "Hittite imperial," was later recognized as belonging instead to the time when the Assyrian commercial colonies of Cappadocia were active and to the beginning of the ancient Hittite kingdom. No buildings of a monumental character were uncovered at Alişar, but the care with which excavations were carried out and the published results may well be considered an

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

essential reference point in Anatolian archaeology. Five levels have been identified. The earliest, Level O, pertains to the Chalcolithic Age. Pottery was hand turned, grayish or blackish in hue, and its most characteristic form was the so-called "fruit dish," with a long stem on a flaring base. K. Bittel (1939) has identified the existence of two subphases. The existence of a defensive wall around the inhabited area has yet to be verified. Early Bronze Age II is entered with Level I, which came immediately after the preceding period. Two subphases have been identified here, too; in the first only the citadel was fortified, but in the second the entire settlement was enclosed by a wall. Among the pottery, in which the color red prevails, and which shows, moreover, a close relationship to coeval types from the Anatolian highlands, the depas is particularly outstanding. This is Trojan in type, but with a decoration in red forming a cross on the inside. Tombs were intramural, like those of the previous period. Alişar I covers more or less the same period of time as Troy II (Early Bronze Age II); Alişar III is the most distinctive phase, being the habitat, in a certain sense, of the so-called "Cappadocian" pottery; this pottery, vividly decorated with geometric designs in two or three colors, was preceded by a so-called "intermediary" type, with more subdued decorations. Both types were also found at Kültepe. In this period, a massive wall, varying in thickness from 16 to 23 ft., was built around the city. The Middle Bronze Age, that period during which Assyrian merchants were active in Anatolia and the wars took place between those various principalities later consolidated into the Hittite kingdom, is represented at Alişar by Level II. Brilliantly decorated pottery was supplanted by another type distinguished by a red surface and highly refined forms. A new double-chambered wall encircled the entire inhabited district. Traces of the existence of the Assyrian *karum* (a sort of trade association) and several tablets have been found. The site was abandoned probably as a result of the wars for supremacy which broke out in the region; by about 1750 B.C. the city must have been all but deserted. Though Alişar was not to know the affluence of the Hittite empire, it was, however, to see that of the Phrygians. First a feudal castle was erected on the hill, and then the ancient city was resettled and a new and complicated series of fortifications was constructed. Life went on without any significant interruptions down to a period that might be termed Lydian.

BIBLIOG. H. H. von der Osten and E. F. Schmidt, The Alishar Hüyük, 7 vols., Chicago, 1930–37; E. F. Schmidt, Anatolia Through the Ages: Discoveries in the Alishar Mound (1927–29), Chicago, 1931; H. H. von der Osten, Discoveries in Anatolia (1930–31), Chicago, 1933; K. Bittel, Prähistorische Forschungen in Kleinasien, Istanbul, 1934, passim; J. Gelb, Inscriptions from Alishar and Vicinity, Chicago, 1935; C. F. A. Schaeffer, Stratigraphie comparée et chronologie de l'Asie Occidentale, Oxford, 1948, passim; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, passim; S. Lloyd, Early Anatolia, Harmondsworth, 1956, passim; A. Götze, Kleinasien, 2d ed., Munich, 1957, passim; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, passim; W. Orthmann, Die Keramik der frühen Bronzezeit aus Inneranatolien, Berlin, 1963, passim.

Althamar (Aght'amar). This is an island on Lake Van, the residence of the Armenian Arunid kings (10th–11th cent.). All that remains of the palace block (10th cent.; architect: Manuel), which consisted of a many-storied palace with frescoes, a pier, and fortresses, is the inscribed-cross church (I, PL. 435), attached chapels (1316), a bell tower (18th cent.), and a four-columned *zhamatun* (1763), a building intended for both religious and civil functions. The exterior of the church is richly decorated with carvings (secular, religious, and mythological subjects) and ornamental sculptures, and the interior with frescoes and decorations in relief.

BIBLIOG. E. Lalayan, The Famous Monasteries of Vaspurakan: The Monastery of the Holy Cross at Aghtamar, Azgagrakan Handes, XII, 1910, pp. 197–212 (in Armenian); T. Artzruni, History of the House of the Artzrunis, Tiflis, 1917 (in Armenian); A. Sakisian, Notes on the Sculpture of the Church of Akhtamar, AB, XXV, 1943, pp. 346–57; M. Ş. Ipşiroglu, Die Kirche von Achtamar, Berlin, Mainz, 1963; S. der Nersessian, Aghtamar: Church of the Holy Cross, Cambridge, Mass., 1965 (bibliog.).

Amasya (former Amaseia). Capital of Pontus in pre-Roman and Roman times, this city passed from the Byzantines to the Moslems in 1075. In 1143 it was occupied by the Seljuks and at the end of the 14th century became a part of the Ottoman Empire. Certain parts of the fortifications of the citadel date from classical antiquity, with a series of subsidiary works (cisterns, galleries), dating from the 1st century B.C., as well as numerous rock-cut tombs. The city retains a certain number of Moslem buildings from the Seljuk and Ottoman periods, especially in the old quarter. Among them, mention may be made of the Gök Medrese Cami (Blue Mosque theological school), erected in 1276, whose prayer hall has three aisles, each containing five domes. The small Melik Hatun Bimarhane (hospital) has rooms with pointed vaults set around a central courtyard; the stone block walls are well preserved. The Burmali Minare Cami (spiral-minaret mosque) was built at the time of Keyhüsrev (Kayhusrau) II (1236–46). The prayer hall is surmounted by three domes and is lined with galleries on three sides. The Mausoleum of Halife Gazi (1146), an octagonal building of stone, dates from the time of the Danişmend emirs. The Turumtay Türbe (1278), rectangular in plan, dates from Seljuk times. The Beyazit Cami was built in 1486 by Beyazit II; next to it stands a theological school built by the same ruler.

BIBLIOG. G. Perrot, Antiquités d'Amasia, RA, V, 1862, pp. 207–13; G. Perrot and E. Guillaume, Amasia, RA, XXIV, 1872, pp. 201–20; F. and E. Cumont, Studia Pontica, II: Voyage d'exploration archéologique dans le Pont, Brussels, 1910, pp. 138–84; G. de Jerphanion, Mélanges d'archéologie anatoliennè, Beirut, 1928; A. Gabriel, Les monuments turcs d'Anatolie, II, Paris, 1934.

Anazarbe. The city was situated in the fertile Cilician plain, and just before the Christian Era was part of a small kingdom later abolished by the Romans (A.D. 17?). In Roman imperial times it enjoyed increasing prosperity until, at the beginning of the 3d century of the Christian Era, it was named the metropolis of a part of Cilicia; its good fortune continued under Byzantine rule (during which time it was known as Justinianapolis) until the 7th century, when the Arabs seized it from the Eastern emperors. During the brief return of the Byzantines in the 10th century, it was one of the centers reoccupied by the Christians; it then passed into the hands of the Armenians, who in 1103 made it the capital of their kingdom. With the fall of Armenia Minor, Anazarbe, devastated by numerous earthquakes, lost all importance and was abandoned; the ruins are about 35 miles from Adana. To the north, outside the city walls, are the remains of an aqueduct, possibly dating from the reign of Domitian. The Roman city was encircled by walls, which were restored and modified many times by the Byzantines, and of which several towers and one of the gates are still standing. Beyond this gate is a relatively well-preserved triple-vaulted triumphal arch from the 2d century A.D.; only a few remains still exist of the colonnaded street (worthy of note are the columns retaining brackets), the baths, the theater, the amphitheater, and the hippodrome. Also to be mentioned are the remains of a Byzantine aqueduct and of rock-cut tombs. The two city churches are of great interest; one of them is cruciform, the other (dedicated to the Apostles) contains a spacious curved apsidal ambulatory. A third church, hewn into the rock, was located outside the city walls. The castle overlooking the city was fortified at various times during the Byzantine periods and contains a well-preserved Armenian chapel built by King Thoros I (1110–29).

BIBLIOG. V. Langlois, Rapport sur l'exploration archéologique de la Cilicie, Paris, 1854, pp. 43–47; V. Langlois, Voyage dans le Cilicie: Anazarbe et ses environs, RA, XIII, 1856–57, pp. 361–70; C. Texier, Asie Mineure, Paris, 1862, pp. 580–83; E. J. Davis, Life in Asiatic Turkey, London, 1879, pp. 138–50; G. Bell, Notes on a Journey through Cilicia and Lycaonia, RA, VII, 1906, pp. 1–29; J. Keil, Vorläufiger Bericht über eine Reise in Kilikien, ÖJh, XVIII, 1915, Sup., cols. 5–60 at 55; M. Gough, Anazarbus, Anatolian S., II, 1952, pp. 85–150 (bibliog.); P. Verzone, Città ellenistiche e romane dell'Asia minore: Anazarbus, Palladio, VII, 1957, pp. 9–25; L. Rocchetti, EAA, s.v.

Ani. The largest city of medieval Armenia, Ani was founded in the 5th century as a fortress city. From the mid-10th to the mid-11th century, under the Bagratids, it was the capital of the Armenian kingdom (with a population of about 100,000); from the end of the 12th century it was the residence of the Zakharid princes. Almost completely destroyed in 1236 by the Mongols, Ani is known as a result of excavations conducted (from 1892) by N. J. Marr. The city (now divided by the Turko-Russian border) consisted of a fortified citadel, of the town proper (the *sahastan*) enclosed by a double stone wall with towers, and of a suburb; there was also an "underground" Ani made up of cave dwellings hollowed out of the rock of gorges. Remains include the palace church, a single-aisled basilica (7th cent.), and several works designed by the architect Trdat: the Cathedral, a domed basilica (989–1001) with nave and two side aisles; the round three-storied Church of St. Gregory (Gagik; 1001–10), a replica of the Zvart'nots church; and several two-storied round churches (St. Gregory, Holy Saviour); and a church by Tigran Honents, of the domed hall type, decorated with ornamental sculpture and frescoes. Various palaces also came to light during excavations as well as popular living quarters, shops, workshops, and baths.

BIBLIOG. H. F. B. Lynch, Armenia, I, London, 1901, pp. 334–92; J. Strzygowski, Die Baukunst der Armenier und Europa, 2 vols., Vienna, 1918; N. Ya. Marr, Ani, Rev. des études arméniennes, I, 1921, pp. 345–410; N. Ya. Marr, Ani: Knizhnaya istoriya goroda i raskopki na mest gorodischa (Ani: History of the City and Excavations on the Site of Its Ruins), Moscow, Leningrad, 1934

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Antalya (Adalia; anc. Attaleia). Founded in the middle of the 2d century B.C. by Attalus II, King of Pergamum, and then in 129 B.C. incorporated, together with the Pergamene kingdom, into the Roman state, Attaleia was a small city with a good harbor and was well protected by walls; for this reason, in the 8th century it was chosen by the Byzantines as a center of residence, whereas Side, the ancient metropolis of Pamphylia, was abandoned. Occupied by the first Crusaders, it was used as a clearing-station and embarkation point for Palestine. Absorbed into the Sultanate of Rum in 1207, it was annexed to the Ottoman Empire toward the end of the 15th century, when it became known as Antalya. There are still many remains of the ancient city walls, but they were considerably restored, especially during late Byzantine times; in one of the towers there is a Roman plaque referring to one Julia Sancta as having commissioned restorations, while others bear inscriptions dedicated to Constantine VII Porphyrogenitus (912–59). The monumental gate built at the time of Hadrian (heavily restored) is triple vaulted and has freestanding columns on either side supporting the rim of the projecting entablatures. Nothing of the second order remains. South of the city is a large round mausoleum from Roman imperial times. The magnificent 8th-century Panagia Church (see BYZANTINE ART, col. 778) is adorned with typical carved decorations and with traces of frescoes. This masterpiece of the Byzantine period is falling into decay. An interesting Seljuk structure is the great Yivli Minare, the sole remaining portion of a mosque, which bears an inscription from 1219–1236. The minaret tower itself is formed by a cluster of eight brick columns tiled with turquoise-blue ceramics; these support the balcony for the muezzin and are topped by a small cell with a conical roof. The adjoining theological school building now houses the Archaeological Museum.

BIBLIOG. K. Lanckoronski, G. Niemann and E. Petersen, Städte Pamphyliens und Pisidiens, I, Vienna, 1890, pp. 7–32; R. Paribeni and P. Romanelli, Studi e ricerche archeologiche nell'Anatolia medioevale, MALinc, XXIII, 1914, cols. 5–274 at 8; B. Pace, Adalia, ASAtene, III, 1916–20, pp. 3–21; G. Moretti, La porta di Adriano in Adalia, ASAtene, VI–VII, 1923–24, pp. 453–78; B. Pace, Nuovi appunti su Adalia, ASAtene, VI–VII, 1923–24, pp. 413–28; V. Viale, Relazione sull'attività della Missione archeologica di Adalia nell'anno 1922, ASAtene, VIII–IX, 1925–26, pp. 357–92; R. M. Riefstahl, Turkish Architecture in Southwest Anatolia, Cambridge, Mass., 1931, pp. 41–53; J. Starr, The Place Name Italiya-Antalyah, RSO, XVII, 1938, pp. 475–78; A. M. Mansel and A. Akarka, Antalya bölgesinde araştımalari (Researches in the Antalya District), Ankara, 1949; M. H. Ballance, Cumanin Cami'i: A Byzantine Church at Antalya, BSR, XXIII, 1955, pp. 99–114; P. Verzone, Le rovine della Panagia di Adalia, Actes IXe Cong. int. des études byz. (1953), I, Athens, 1955, pp. 500–09; A. M. Mansel, Ilk çağda Antalya bölgesi (The Antalya District in Antiquity), Istanbul, 1956; J. Inan, Antalya bölgesi Roma devri portretleri (Roman Portraits from the Antalya District), Ankara, 1965; B. Pace, EAA, s.v. Adalia.

Antioch (mod. Antakya). Founded in 300 B.C. on the banks of the Orontes by Seleucus I as the capital of the immense kingdom of Syria, Antioch enjoyed great prosperity and was for more than 800 years one of the most important cultural centers of the Mediterranean. In 64 B.C., when it passed under Roman control, it was named capital of the province of Syria and embellished with numerous monuments and public works by various emperors. It continued to flourish perhaps up to the time of its destruction by the Persian king, Shāpur I; but even then, the city's prestige did not diminish, for it was the seat of the Metropolitan of the Eastern Christian realms. In 526 it was devastated by a terrible earthquake and in 540 was pillaged by Keyhüsrev; it fell into Arab hands in 637–638. Its walls were constructed under Justinian, and, Byzantine again in 969, it then in turn became a possession of the Seljuks, of the Crusaders, and of the Armenians; in 1268, it was occupied by the Mamelukes and in 1516 by the Ottomans, who found it reduced to a poor village (Antakya). Countless magnificent monuments are mentioned in the sources, both on the island (which no longer exists) in the Orontes River, where first the royal Seleucid, then the Roman imperial palace, the stadium, and the tetrapylon all stood, as well as in the city proper, where mention should be made of the three-storied theater, the Tycheum, the agora, the Church of St. Ignatius, and the Martyrium of St. Babilas. Only a few fragmentary elements of this impressive group of buildings have come to light in excavations. The general plan of the city is known only in its broad outlines: the walls, with five main gates, were built by Justinian. During the Franco-American excavations, the first test excavations were made of the stadium rebuilt by the proconsul Quintus Marcius Re and a small theater (2d century A.D.) in the famous suburb of Daphne (Harbiye). In 1933–1936, excavations were undertaken, again at Daphne, of the cruciform Martyrium of St. Babilas (381), with a sort of large central shrine, supporting a cupola; four aisles probably extended from it. A series of public baths, among which the so-called "Baths C," dating from late Roman times, extremely spacious and complex in their architectural structure, and those built on the island, attributed to the emperor Diocletian, are also worthy of note. Sporadic excavations have unearthed the remains of numerous urban and suburban villas with rich mosaic decorations; among these the Yakto complex, with polychrome mosaics, is particularly outstanding (see IX, col. 134). In the neighborhood of Antakya are the remains of two Roman aqueducts and a large necropolis known as the "Tomb of Mnemosyne." Daphne, famous for its time-honored oracle of Apollo, has yielded luxurious villas with fine mosaics. Seleucia of Pieria, probably originally intended as the Seleucid capital, is situated near the sea and in ancient times served as the port of Antioch; it preserves remains of a nymphaeum (2d century of our era), of two temples from the Hellenistic period — one, Ionic, is of marble and one, Doric, is of limestone — a polygonal *enceinte* wall (3d cent. B.C.), and an important quadrilobed martyrium with two-storied walls and a projecting apse (ca. A.D. 550–600). Worthy of note are certain engineering works (canals and dikes) built in the Flavian age and connected with the organization of the harbor system. Nearby is the necropolis for the sailors of the Roman fleet (1st–3d cent. of our era). Archaeological Museum.

BIBLIOG. K. O. Müller, Antiquitates Antiochenae, Göttingen, 1839 (repr. in K. O. Müller, Kunstarchäologische Werke, V, Berlin, 1873, pp. 1–132); R. Förster, Antiochia am Orontes, JdI, XII, 1897, pp. 103–49; V. Schultze, Altchristliche Städte und Landschaften, III, Gütersloh, 1930; Antioch-on-the-Orontes: The Excavations, 4 vols. in 5, Princeton, 1934–52; C. R. Morey, The Mosaics of Antioch, New York, 1938; D. Levi, Antioch Mosaic Pavements, 2 vols., Princeton, 1947; G. Spano, Il "ninfeo del proscenio" del teatro di Antiochia, RendLinc, 8th Ser., VII, 1952, pp. 144–74; G. Downey, The Size of the Population of Antiochia, Tr. Am. Philological Assoc., LXXXIX, 1958, pp. 84–91; A. J. Festugière, Antioche païenne et chrétienne, Paris, 1959; D. Levi, EAA, s.v.

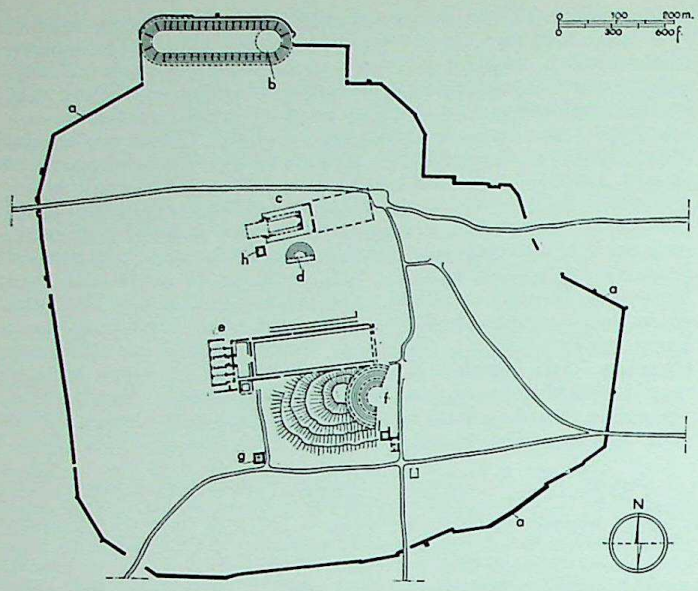
Antioch in Pisidia. A city founded by Seleucus Nicator before 280 B.C. on the spot where an ancient Phrygian sanctuary had formerly stood, its ruins lie near Yalvaç in Isparta. Conquered by the Romans in 189 B.C., it became part of the tetrarchy of Galatia and in 25 B.C. was occupied by soldiers from the 5th Gallic Legion; it was visited by St. Paul (*Acts* XIII, 14–52). The city was destroyed by the Arabs, probably in A.D. 713. There are scanty remains of the *enceinte* wall and architectural elements with sculptures from the triple-arched monumental gate. There are also remains of a theater, apparently dating from Roman times, and, near the city, of a Roman aqueduct on arches; on top of the overlooking hill was a temple dedicated to Men, a local divinity connected with moon worship.

BIBLIOG. F. V. J. Arundell, Discoveries in Asia Minor, II, London, 1834; W. M. Calder, Colonia Caesareia, Antiocheia, JRS, II, 1912, pp. 78–109; M. M. Hardie, The Shrine of Mên Askaenos et Pisidian Antioch, JHS, XXXII, 1912, pp. 111–50; W. M. Ramsay, Colonia Caesarea (Pisidian Antioch) in the Augustan Age, JRS, VI 1916, pp. 83–134; B. Pace, La zona costiera da Adalia a Side, ASAtene, III, 1916–20, pp. 29–71; D. M. Robinson, A Preliminary Report on the Excavations at Pisidian Antioch and at Sizma, AJA, XXVIII, 1924, pp. 435–44; D. M. Robinson, Roman Sculptures from Colonia Caesarea, New York, 1926; M. M. Ramsay and A. von Premerstein, ed., Monumentum Antiochenum (Klio, Beiheft, XIX), Leipzig, 1927; D. M. Robinson, The Res gestae divi Augusti as Recorded on the Monumentum Antiochenum, Am. J. of Philology, XLVII, 1928, pp. 1–54; EAA, s.v.

Aphrodisias (Geyre). The city was spread out along the floor of the valley of the Caria, at the foot of a hill upon which stands the acropolis. In the 2d century B.C., it seems to have been confederated with Plarasa; in 39 B.C. the community was granted freedom by Roman decree, which granted, moreover, various privileges to the sanctuary of Aphrodite. In the Roman imperial age the city enjoyed considerable prosperity, aided in large part by the production of the flourishing workshops of sculptors who worked in what was perhaps a local marble and who exported statues, architectural pieces, and even skilled craftsmen throughout the Mediterranean area. In Byzantine times Aphrodisias became Stauropolis, and at the end of the 5th century the emperor Leo I made it a metropolis of Caria. At the end of the 12th century the city was occupied by the Seljuks; it was recaptured by Manuel I Comnenus but once again fell into the hands of the Turks; then sacked by Tamerlane (1402), it gradually fell into decay until it was reduced to the present village of Geyre.

A well-preserved monument is the stadium, dating from perhaps the 1st century of our era, 746 ft. long and containing a high podium faced with large stone slabs (*orthostatoi*) and the upper ambulatory marked off on the outside by a wall of blind arches. The baths, dating from Hadrian's time, more or less cover the center of the city; they are of the standard type found in Asia Minor, with parallel barrel-vaulted rooms, a large gymnasium, and innumerable decorative sculptures. Joined to the baths by a smaller arcade was a large agora dedicated to Tiberius, with Ionic porticoes on three sides and rich decorations. To the north of the Tiberian agora there stand the remains of another immense square, in front of which stands an odeon from the 2d century of our era. At the foot of the acropolis

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



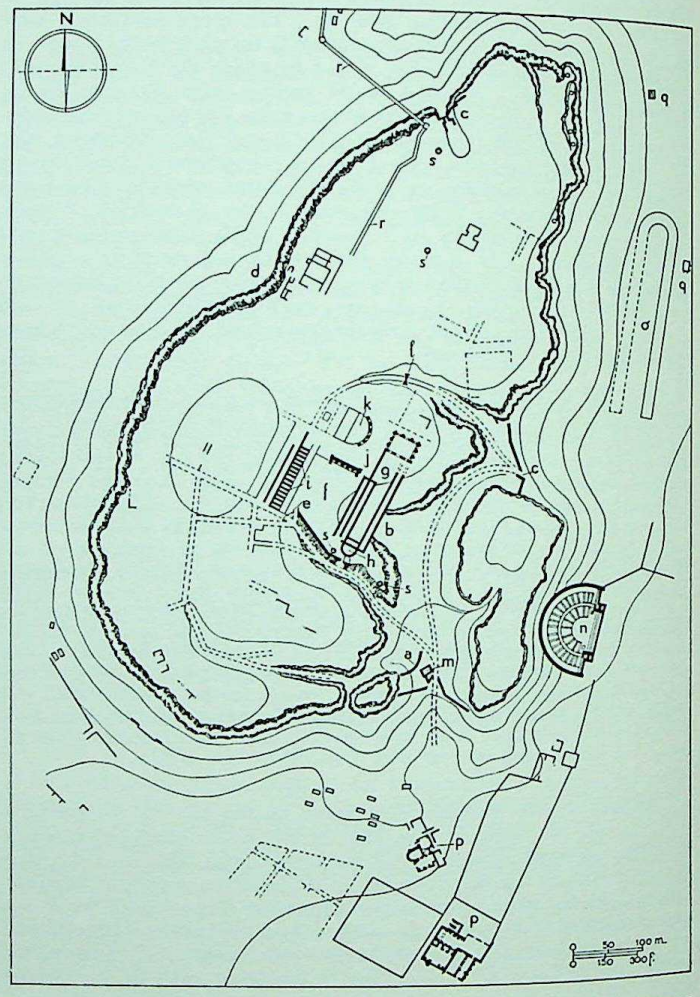
Aphrodisias (Geyre), archaeological plan. Principal monuments: (*a*) walls; (*b*) stadium; (*c*) 6th-century church (former temple of Aphrodite); (*d*) odeum; (*e*) baths; (*f*) theater; (*g*) church; (*h*) bishop's residence.

are the ruins of a nymphaeum and a large church, built of elements taken from ancient buildings, which occupies the site of the Ionic temple of Aphrodite, with an interesting propylon with twisted columns. There are negligible remains of a theater with a subterranean auditorium from the Claudio-Julian era; the theater seems to have also had a nymphaeum behind the *scaena*; the city walls, approximately 2 miles around, were built by Costantius II in the middle of the 4th century (ca. 349–350) and are purposely irregular; the turrets are almost completely in ruins. Recent American excavations have brought to light an almost perfectly preserved ecclesiasterion, a luxurious private house near the church, and a three-choir martyrium, especially important because of its plan.

BIBLIOG. C. Texier, Description de l'Asie Mineure, III, Paris, 1849, pp. 149–68; M. Collignon and G. Mendel, Notes sur les fouilles exécutées à Aphrodisias, CRAI, 1904, pp. 703–11, 1906, pp. 158–84; M. Collignon, Les fouilles d'Aphrodisias, Rev. de l'art anc. et mod., XIX, 1906, pp. 33–50; A. Boulanger, Notes sur les fouilles exécutées à Aphrodisias en 1913, CRAI, 1914, pp. 46–53; R. Vagts, Aphrodisias in Karien, Leipzig, 1930; G. Jacopi, Die italienischen Grabungen des J. 1937 in Aphrodisias in Anatolien, AAnz, 1938, cols. 616–752; E. Will, Les ruines d'Aphrodisias en Carie, RA, XII, 1938, pp. 228–35; G. Jacopi and L. Crema, Gli scavi della missione archeologica italiana ad Afrodisiade nel 1937, MALinc, XXXVIII, 1939, cols. 73–312; J. M. R. Cormack, Notes on the History of the Inscribed Monuments of Aphrodisias, Reading, 1955; K. Erim, Expedition to Aphrodisias, Archaeology, XV, 1962, pp. 58–59; J. Johnson, Aphrodisias: 1963, Archaeology, XVII, 1964, pp. 59–61; G. Becatti, EAA, s.v. Afrodisiade.

Aspendos (Aspendus; mod. Belkisköyü). According to Greek tradition, the city, set on the banks of the Eurymedon, was founded by the Argive colonizer Mopsos in the 10th century B.C.; it seems, however, that it retained the characteristics and language of the area for a long period of time. Wealthy and active, it came to terms with Alexander the Great at the time of his expedition in Pamphylia (333 B.C.). In 190 B.C., it yielded to Rome and then formed an alliance with Pergamum. After the death of Attalus III, it was incorporated into the Roman Empire. In late Roman and Byzantine times it was prosperous, but its importance, compared to that of Side and Perge, was diminished. Repeatedly sacked by the Arabs, it was ultimately abandoned after the Moslem conquest and the inhabited district was reduced to perhaps nothing more than the theater with its stage in the form of a palace. The city stands on an elongated hill with a double acropolis on the southeast. The city walls were limited to the points of easiest access and contained four gates. At the center of the city, surrounding an agora and the remains of several-storied shops, were a nymphaeum on the north side, similar to, but smaller than, the one in Side, and a long (345 ft.) three-aisled building (a shorter fourth aisle opens onto the agora) with a vast antechamber thought to be a basilica or Caesareum; these monuments all date from the 2d century of our era. Further north are the remains of an assembly hall (odeum or bouleuterion). On the east slope of the hill is to be seen, aside from the remains of a stadium, the famous perfectly preserved theater designed by the architect Zeno (See ROMAN ART OF THE EASTERN EMPIRE, col. 293). Farther south there are the remains of two baths, the larger one built of stone blocks and the other, a mixed stone-and-brick structure with rooms of various shapes. On the same level are ruins of a massive siphon aqueduct (3d cent. of our era) and of private houses.

BIBLIOG. C. Texier, Description de l'Asie Mineure, III, Paris, 1849, pp. 217–19; K. Lanckoronski, G. Niemann and E. Petersen, Städte Pamphyliens und Pisidiens, I, Vienna, 1890, pp. 85–124, 179–84; H. Hörmann, Das Nymphaeum zu Aspendos, JdI, XLIV, 1929, pp. 263–74; A. Aziz, Aspendos, Türk Tarih Arkeologiya ve Etnografya Dergisi, I, 1933, pp. 99–106; A. Akarka, Aspendos'ta M. ö V. yuzyilla ait bir mezar (A 5th Century B.C. Tomb in Aspendos), Belleten, XV, 1951, pp. 203–11; R. Duryuran, The Ancient Cities of Western Anatolia, Ankara, 1952, pp. 17–18; J. B. Ward Perkins, The Aqueduct of Aspendos, BSR, XXIII, 1955, pp. 115–23; H. Cüppers, Getreidemagazin am Forum in Aspendos, BJ, CLXI, 1961, pp. 25–35; W. Ruge, RE, s.v.; A. Di Vita, EAA, s.v.



Aspendos, archaeological plan. Greek and Roman constructions: (*a*) terrace; (*b*) vaulted terracing; (*c*) gate; (*d*) west entrance; (*e*) market gate; (*f*) Roman agora; (*g*) basilica; (*h*) exedra; (*i*) market; (*j*) nymphaeum; (*k*) odeum or bouleuterion; (*l*) arch; (*m*) foundations of a temple; (*n*) theater; (*o*) stadium; (*p*) baths; (*q*) tombs; (*r*) aqueduct; (*s*) water tanks (*from Lanckoronski, 1890*).

Beycesultan. A site located in the upper valley of the Menderes (the ancient Maeander), Beycesultan was explored by English archaeologists (1954–59). Forty different levels, divided into six main phases, have been identified. The Late Chalcolithic Age is represented by pottery finds that connect this area with the southwestern Anatolian area and the nearby Aegean islands. The original settlement was perhaps fortified (as it was to be later from the Early Bronze Age on) and contained isolated single-room houses in pressed clay. The Early Bronze Age, divided into three phases and marked by two great destructions caused by the influx of new populations, is represented by a series of shrines arranged in pairs; finds, including the "consecration horns," the steles with curved tops, the small violin-shaped idols, and the cult objects show significant connections with Asia Minor and Minoan Crete. The pottery, which suggests, among other things, close contact with the Hellespont region at the time of Troy I and II and the Yortan Group necropolises, abounds in elements deriving from metalworking techniques In the Middle Bronze Age (ca. 1900 B.C.) the great palace was built which was destroyed by fire in about 1750 (IX, FIG. 651). Timber was used abundantly in its construction and, with its courtyards, its lustration

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

areas, and living quarters on the upper floor, it offers interesting comparisons with the Minoan palaces of Crete. Unfortunately, the lack of archives or of any other sort of historical document has made it impossible to identify Beycesultan, which was perhaps the capital of the entire region, with one of the kingdoms known from Hittite tradition. The Late Bronze Age levels, though undoubtedly interesting, do not compare in richness with Middle Bronze Age culture. Only at the end of its existence does Beycesultan show distinct influences from the Anatolian highlands.

BIBLIOG. S. Lloyd and J. Mellaart, Bejcesultan Excavations, Anatolian S., V, 1955, pp. 39–92, VI, 1956, pp. 101–35, VIII, 1958, pp. 93–113, IX, 1959, pp. 35–50, X, 1960, pp. 31–41; A. Götze, Kleinasien, 2d ed., Munich, 1957, pp. 179, 213; S. Lloyd and J. Mellaart, An Early Bronze Age Shrine at Beycesultan, Anatolian S., VII, 1957, pp. 27–36; H. Helback, Late Bronze Age and Byzantine Crops at Beycesultan, Anatolian S., XI, 1961, pp. 77–97; S. Lloyd and J. Mellaart, Beycesultan, 2 vols., London, 1962–65; J. Mellaart, Anatolia c. 4000–2300 B.C., Cambridge, 1962; F. Schachermeyr, Forschungsbericht zur Ägäischen Frühzeit 1957–60, AAnz, 1962, cols. 105–382 at 323, 338, 347.

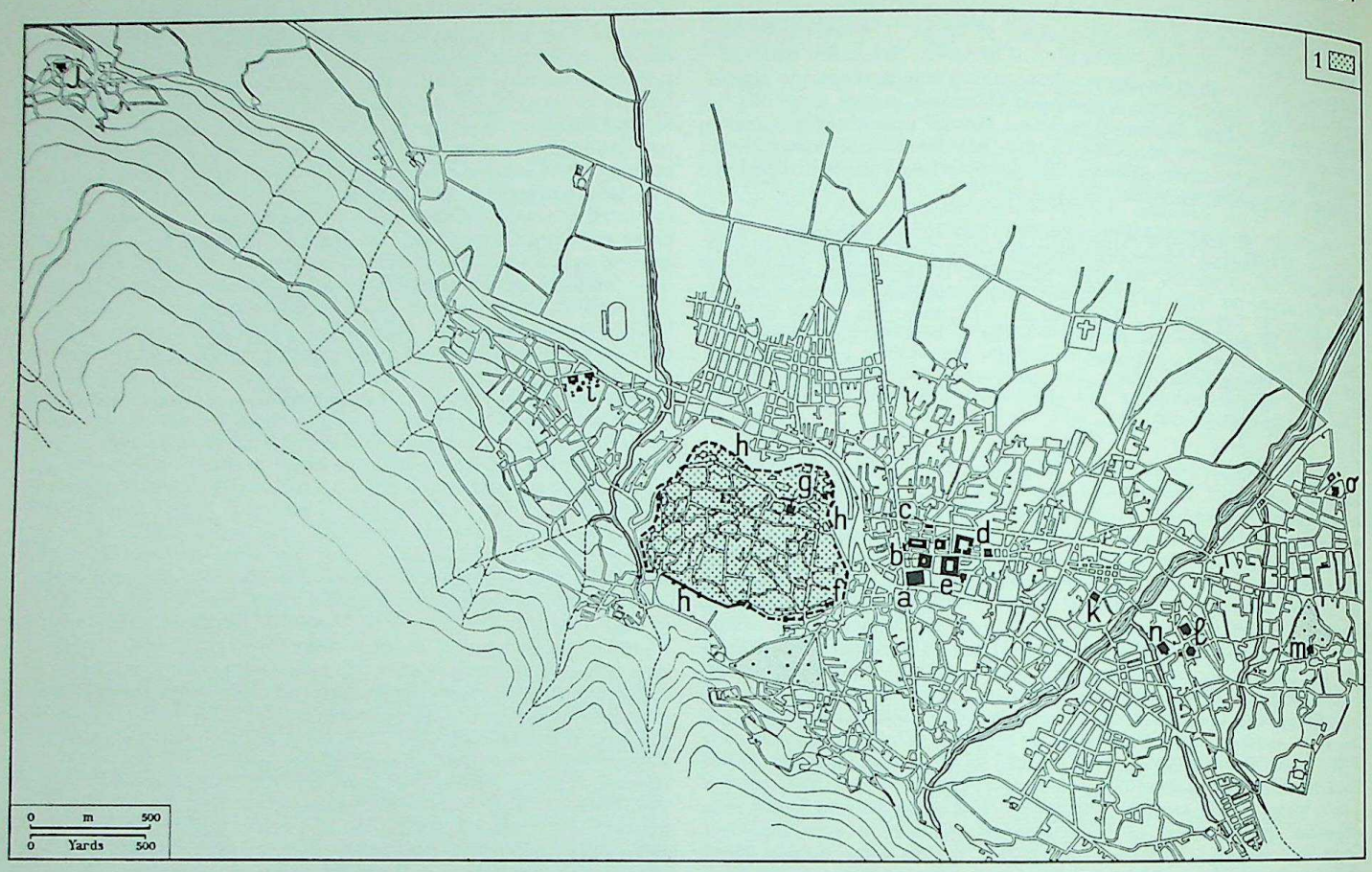
Boğazköy (anc. Hattushash). Capital of the Hittite empire starting with the reign of Hattusilis I (ca. 1550 B.C.), Boğazköy has been investigated by German archaeologists. The earliest traces of occupation, dating back to the early Bronze Age II, have been located in the lower part of the city. At the beginning of the 2d millennium it was the seat of an Assyrian commercial colony (*karum*). Destroyed by Anittas about the middle of the 18th century, it was raised to the rank of capital as a result of its strategic importance at the center of the plateau marked off by the River Halys. The citadel, Büyükkale, was the fortified acropolis, and a massive *enceinte* wall protected the inhabited area. During the 14th century, probably at the orders of Suppiluliumas, the urban area was extended southward to include the large ancient hollow surrounded by hills. Destroyed at the end of the Late Bronze Age in the upheavals that disturbed the entire Near East, it was reoccupied in Phrygian times. The Hittite monuments include five temples, the outer and inner *enceinte* walls, the acropolis, and a series of forts erected on rocky masses scattered along the slopes. The five sanctuaries, which have certain basic elements in common (the indirect access to the innermost sanctuary, or adytum, a system of illumination by means of tall narrow windows, and a central courtyard), are best exemplified by Temple I, surrounded by a series of storerooms in the form of long narrow cells, ranged about a courtyard at the center of which stands the temple proper. The outer walls of the city are the best preserved; the lower part, of crudely cut cyclopean stones, supported a superstructure (no longer extant) of mud brick; Three main gates were set into the south section: the Lion Gate had apotropaic lions facing outward, with only the front parts in the round; the Yerkapi (Gate of the Sphinxes) had two winged sphinxes with strange headdresses; and the Royal Gate had the figure of a warrior (god or sovereign) carved inside the gate proper. These are the most important known examples of Hittite sculpture. Carefully planned defense works, such as posterns, stairs, and a buttressing wall facing the open country, complete the fortifications of the Gate of the Sphinxes. In the acropolis, greatly altered in Phrygian times and already heavily damaged during the conquest of the Hittite city, all that remains of the palace are the traces of the foundation in the rock. The zone to the northwest has, however, yielded the famous archive containing more than 3,500 tablets. The disposition of the citadel, with its monumental entrance, an audience chamber sustained by 75 pillars, and other buildings whose function is difficult to ascertain, suggests the existence of a clear construction plan. Dating from the final period of the acropolis is the terra-cotta statue of the Phrygian Cybele; on either side are two musicians, one with a lyre, the other with a flute.

BIBLIOG. H. Winckler and O. Puchstein, Excavations at Boghaz-keui in the Summer of 1907, Smithsonian Inst. Ann. Rep., 1908, pp. 677–96; O. Puchstein, Boghazköy: Die Bauwerke, Leipzig, 1912; K. Bittel et al., Boğazköy, 3 vols., Berlin, 1935–57; K. Krause, Boğazköy Tempel V, Berlin, 1940; K. Bittel et al., Architektur, Topographie, Landeskunde und Siedlungsgeschichte von Boğazköy-Hattusa, Stuttgart, 1952; K. Bittel et al., Vorläufiger Bericht über die Ausgrabungen in Boğazköy . . ., Mitt. der d. Orient-Gesellschaft, LXXXVI, 1953, pp. 3–76, LXXXVIII, 1955, pp. 3–32, LXXXIX, 1957, pp. 5–80, XCI, 1958, pp. 1–84, XCIII, 1962, pp. 1–77, XCV, 1965, pp. 3–89; K. Bittel et al., Die hethitischen Grabfunde von Osmankayasi, Berlin, 1958; K. Bittel, Ausgrabungen in Boğazköy, Neue deutsche Ausgrabungen in Mittelmeergebiet und in vorderen Orient, Berlin, 1959, pp. 89–120; T. Beran, Eine Kultstätte phrygischer Zeit in Boğazköy, Mitt. der d. Orient-Gesellschaft, XCIV, 1963, pp. 33–52; G. Furlani, EAA, s.v. Khattusha.

Bursa (anc. Prusia ad Olympium; former Brussa). The fertile plain in this area favored from earliest times the creation of an important center at the foot of Olympus. The city proper, Prusia ad Olympium, was said to have been founded by Prusias I at about the end of the 3d century B.C. In 190 B.C. it was assigned by the Romans, who had triumphed over the Seleucids, to their ally, Eumenes II, the king of Pergamum. It did not, however, assume a position of prime importance in the Roman Empire. Conquered by the Seljuks in 1075, it changed hands various times during the period of the Crusades and enjoyed a period of prestige as a center of Byzantine resistance against the Turks after the somewhat dishonorable conquest of Constantinople in 1204. Besieged at the beginning of the 14th century by the Ottoman Turks, it surrendered to Orhan on April 6, 1326. Made capital of the Ottoman Empire with the name of Bursa, the city was embellished with many handsome buildings up to the year 1413, when the capital was transferred to Edirne. The fondness of the Ottoman monarchs for the original capital of their empire, was, however, never to diminish; it was, moreover, an important crossroads, an agricultural center and a resort area; the city is large and prosperous even today. Nothing, or almost nothing, remains of the Brussa of Byzantine times. Of particular interest among its Islamic monuments is the Mosque of Orhan (begun 1304, completely rebuilt 1417), in squared stone with brick ornaments and arches. In plan, it consists of three domes in line, with a fourth dome covering the sanctuary; the entire building is preceded by a sort of inner narthex and a portico supported by pointed arches and surmounted by five small domes. The prayer hall is formed by the two large central domes, while the two lateral rooms must have been reserved for the library. The Ulu Cami, or Great Mosque, is square in plan with twelve intermediate pieces which support, by means of pointed arches, 20 domes; it was begun in 1396 and finished in 1400. At the center, under a luminous dome, is a large ablution fountain; the cedarwood mimbar dates from 1399–1400. The Muradiye Cami (Mosque of Murat II; 1424–1427), richly decorated with ceramic mosaics, follows the usual layout of the other Bursa mosques, with two minarets and three abutments in front and another, constituting the sanctuary, preceded by a portico; two minarets stand at the front of the mosque, whereas the portico, because of its polychrome coloring, stands out from the bulk of the building; inside, the walls are tiled with beautiful turquoise-blue tiles. Behind the mosque is a madrasah consisting of a courtyard circled by a gallery and rooms for the students; nearby is a cemetery containing the turbehs of eleven members of the Ottoman imperial family. The various turbehs, polygonal in plan and built of stone or brick, are richly decorated on the inside with ceramicwork (tiles). The most important one is the Türbe of Murat II, the simplest and the most beautiful of the tombs. It is rectangular in plan with a domed roof, open at the top and resting on four pillars. Also preserved at Bursa is the so-called "house of Murat II," a timber and masonry structure, recently restored. The Yeşil Cami (Green Mosque) is the most important example in Bursa of the Turkish art of this period. Begun in 1420 and finished in 1424 by Sultan Mehmet I Çelebi, it has the usual inverted-T plan; in addition, however, it has four rooms set in pairs in the wings of the main nave, as well as a narrow entrance chamber. At the center of the foremost room is a fountain with a basin. Inside there are magnificent tile facings — molded and enameled cornices in the imperial loggia, in the two loggias on the façade, and in the mihrab. It is ascribed in an inscription to one Hacı Ivaz. Also dating from 1420 is the Yeşil Medrese (Green Madrasah), now the Archaeological Museum; the lesson hall, square in plan with a domed roof resting on an octagon, projects from the perimeter of the building. The Yeşil Türbe (Green Turbeh), the tomb of Mehmet I, is an octagonal structure with a dome on pendentives and is decorated with enameled-tile mosaics; those on the outside have been lost, but the inside ones remain, all of them fine. The Eski Kaplıca, a hammam begun by Murat I, consists of a square room with a domed roof supported by columns set out in an octagon and adorned with Byzantine capitals evidently taken from other buildings. Other structures were added to it by Beyazıt II. The edifice has been altered considerably over the years. The central area of the Beyazıt I Yıldırım ("the Thunderbolt") Mosque (1390) is surmounted by a small tower with a domed roof; a portico runs along the façade, with six bays each covered by a small dome; on either side there are two round minarets. The Medrese of Beyazıt I (1394) has attached to it the earliest mental hospital of Ottoman times. The ground plan of the two buildings is practically identical. The hospital consists of rooms set around a rectangular courtyard. The roofs and domes are tiled and the wall surfaces are of stone and brick.

The present plan of Bursa, begun in the second half of the 19th century under Ahmet Vefik Paşa, based upon the opening of four wide, straight streets crossing one another at right angles, the tearing down of the old quarters and the construction of a new quarter next to the historical center, has proved utterly inadequate for modern needs. The city is presently being given a new structural organization (under the direction of the Italian architect L. Piccinato) with emphasis upon the preservation of the historical center with its typical two-story buildings and its numerous and famous parks and

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Bursa, plan of the city and environs. Principal monuments: (*a*) Ulu Cami; (*b*) *bedesten* and Emir Hanı; (*c*) Sipahi Carşısı; (*d*) Fidan Hanı and Yeni Hanı; (*e*) Koça Hanı and Orhan Cami; (*f*) Uftade Cami; (*g*) Orhan Türbesi and Sehadet Cami; (*h*) citadel walls; (*i*) Muradiye Camı and Mustafa Türbesi and cemetery; (*j*) Çekirge district; (*k*) Kuyu Cami; (*l*) Yeşil Camı and Yeşil Türbe; (*m*) Emir Sultan Cami; (*n*) Museum; (*o*) Beyazıt Yıldırım Türbe and Medrese.

gardens, and the building of suburban residential districts with apartment houses.

Bibliog. J. von Hammer, Umblick aus einer Reise . . . nach Brussa, Pest, 1818; C. Texier, Description de l'Asie Mineure, I, Paris, 1839, p. 59–70; Edhem Pasha, L'architecture ottomane, Vienna, 1873; P. Loti, La Mosquée Verte, Rev. de Paris, IV, 1894, pp. 225–45; G. Mendel, Catalogue des sculptures grecques, romaines et byzantines du Musée de Brousse, Athens, 1908; H. Wilde, Brussa, Berlin, 1909; Ahmed Tevhid, Les tombeaux des six premiers Empereurs ottomans à Brousse (in Turk.), Rev. h. de l'Inst. d'H. ottomane, XVI, 1912, pp. 977–81, 1047–60; H. C. Devonshire, A Visit to Broussa and the Green Mosque, The 19th Century, XCII, 1922, pp. 807–16; J. Sölch, Bithynische Städte im Altertum, Klio, XIX, 1925, pp. 140–88; E. S. Ragg, An Old Capital of Turkey: Bursa, Asiatic Rev., XLIII, 1947, pp. 72–73; A. S. Ünver, The Mihrāb of the Green Mausoleum, Istanbul, 1951 (in Turk., Eng. summary); A. Gabriel, Une capitale turque: Broussa-Bursa, 2 vols., Paris, 1958; A. Gabriel, Brousse, Paris, 1960; L. Piccinato, L'esperienza del piano di Bursa, Urbanistica, 36–37, 1962, pp. 110–36.

Büyük Güllücek. This is a mountain site about 10 miles north of Alaca Hüyük. Excavations have brought to light a settlement from the central-Anatolian Late Chalcolithic Age, with two levels of houses; the presence of metal is certain, but specimens are rare. In general, it can be said that this was a homogeneous culture, devoid of any remarkable evolutionary aspects. The pottery is monochrome, most of it with incised decoration; the designs, in lines and dots, are intricate and extremely varied. There is also evidence of decoration consisting of white lines on a dark background; this technique has been related to similar specimens from Level-12 finds at Mersin, but the abundance of Late Chalcolithic ware from Beycesultan must not be overlooked. Other comparisons have been made with the pottery of Sakçegözü and Tilkitepe (where Tell Halaf-type culture is present), but there are similarities, especially in pot-handles, with the western coast. The chronological definition of this culture is still uncertain, but similarities have been pointed out between Büyük Gülücek pottery and that of the early levels of Alaca Hüyük. Remains from the Hittite period are scanty, whereas those dating from the Phrygian period are more substantial.

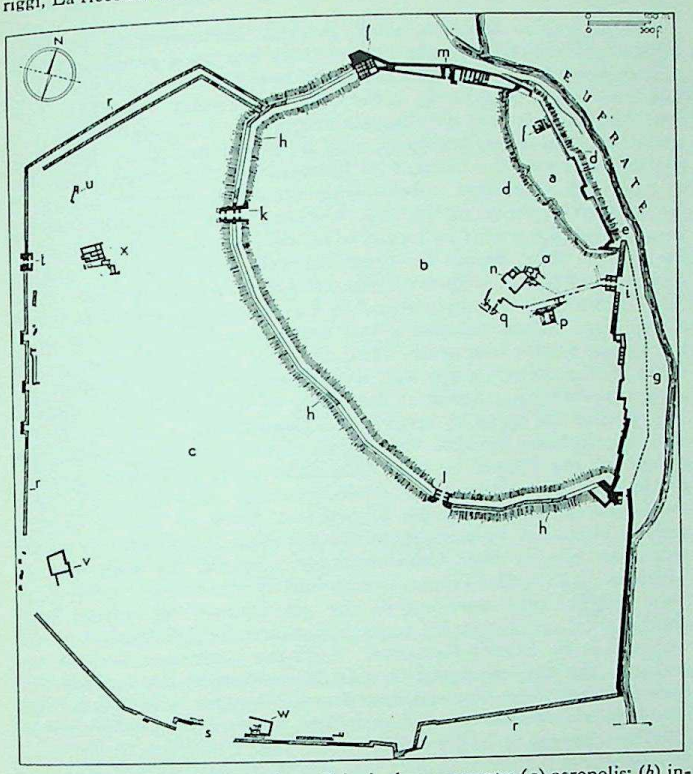
Bibliog. H. Z. Koşay and M. Akok, Preliminary Report on Test Excavations at Büyük Güllücek, Belleten, XII, 1948, pp. 479–85 (in Turk., Eng. summary); W. Lamb, New Developments in Early Anatolian Archaeology, Iraq, XI, 1949, pp. 188–203 at 195; H. Çambel, Archäologischer Bericht aus Anatolien, Orientalia, N. S., XX, 1951, pp. 240–41; A. Götze, Kleinasien, 2d ed., Munich, 1957, pp. 37–38; H. Z. Koşay and M. Akok, Ausgrabungen von Büyük Güllücek, Ankara, 1957; W. Orthmann, Die Keramik der frühen Bronzezeit aus Inneranatolien, Berlin, 1963, passim.

Carchemish (Karkamiş). This city on the Turko-Syrian border was excavated at various intervals on behalf of the British Museum. The site was inhabited from Chalcolithic times, as is proved by the discovery of necropolises on the outskirts of the city, but it reached its greatest prosperity in the Late Bronze and Iron ages, up until the Assyrian conquest of 717 B.C. and the destruction of the city by Nebuchadnezzar III in 604. Carchemish became, in fact, a part of the Hittite empire, but it was very soon to play an important role as the vice-regal seat of the kingdom of North Syria. The city, which has been partially excavated, consists of a necropolis on the Euphrates and a lower city with two *enceinte* walls supplied with towers and gates with inner rooms. All the monumental buildings, except for a temple on the citadel, are located in the lower city, where a temple with a temenos along the front has been identified, as well as a *bît hilani* and other related buildings. The chief characteristic is the decoration by means of sculptured slabs running along the base of the walls. There are three large architectural monuments: the so-called "Long Wall," which leads to a stairway (in its present form it represents the final stage of the reconstruction carried out by King Katuwas at the beginning of the 9th cent. B.C.); the so-called "Herald's Wall," remodeled by Katuwas and preceding the "King's Gate," to which it was connected; the so-called "King's Gate," whose final systematization was the work of King Araras (ca. 780). The iconographic motifs are varied; they include mythological and religious representations and portraits of the royal family ("King's Gate). A high artistic level is maintained throughout and, especially in the details, the assimilation of foreign elements is revealed. These three monuments, together with numerous sculptural fragments, the "Water Gate" carvings, and the statue of the god Atarluhas, constitute one of the primary sources for the documentation of 1st-millennium neo-Hittite art.

Bibliog. D. G. Hogarth, Hittite Problems, London, 1911; C. L. Woolley et al., Carchemish, 3 vols., London, 1914–52; C. L. Woolley, The Prehistoric Pottery of Carchemish, Iraq, I, 1934, pp. 146–62; C. L. Woolley, The Iron

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Age Graves of Carchemish, Liverpool Annals of Archaeol. and Anthropology, XXVI, 1939, pp. 11–37; S. Dirvâna, Cerablus civarinda Yunus'ta bulunan Tèl Halef keramikleri (The Ceramics of Tell Halaf Discovered at Yunus, near Cerablus), Belleten, VIII, 1944, pp. 403–20; H. Frankfort, The Art and Architecture of the Ancient Orient, Harmondsworth, 1954, passim; P. Meriggi, La ricostruzione di Kargamis, RSO, XXIX, 1954, pp. 1–16; M. Vierya,



Carchemish, archaeological plan. Principal monuments: (*a*) acropolis; (*b*) inner city; (*c*) outer city; (*d*) walls of the acropolis; (*e*) water postern; (*f*) fortress of Sargon; (*g*) river wall; (*h*) inner city walls; (*i*) water gate; (*j*) south gate; (*k*) west gate; (*l*) northwest fortress: (*m*) tower; (*n*) temple; (*o*) stairs; (*p*) *bît hilani*; (*q*) wall with orthostats; (*r*) outer city walls; (*s*) south gate; (*t*) west gate; (*u*) House A; (*v*) House B; (*w*) House C; (*x*) House D (*from Woolley, 1921 and 1952*).

Hittite Art 2300–750 B.C., London, 1955, p. 37; S. Lloyd, Early Anatolia, Harmondsworth, 1956, passim; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, passim, G. Furlani, EAA, s.v. Karkamiş.

Çatal Hüyük. This is a settlement on the Konya plain in which, during investigations by J. Mellaart, ten different levels have come to light. Almost all of them, according to Mellaart, had ceased to exist as cultures during the Early Neolithic Age. The earliest levels attest to the transition from a pre-pottery stage, in which wooden dishes were used, to a pottery stage which links up with the Late Neolithic Age at Hacılar. The most important contribution made by this site to the knowledge of Anatolian neolithic times is the discovery of countless sanctuaries within the inhabited area, in which stood houses of one or more rooms set along narrow streets (Levels 1–3) and courtyards (Level 4), or grouped together to form a single block; in the latter event they were entered through the roof. The walls of the sanctuaries are decorated with paintings representing hunting scenes, human and animal figures, and geometric patterns probably taken from textiles. Heads of bulls modeled from clay and having bone horns were frequently found, either hanging on walls or set along the benches. The furnishings and decorations, many times reworked within a given period, would seem to point to complex rituals. Present in all the levels were the male (?) and female figurines (these latter often steatopygous and sometimes associated with wild animals) often rendered with a sense of realism, but at times crudely stylized. Burial was intramural. Finds of painted pottery bearing geometric patterns prove that life in the inhabited center continued on into the Early Chalcolithic Age.

Bibliog. J. Mellaart, Çatal Küyük Excavations, AAnz, 1961, cols. 1–11, 1963, cols. 19–32, 721–40; J. Mellaart, Early Cultures of the South Anatolian Plateau: I, Anatolian S., XI, 1961, pp. 159–84 at 177; P. A. Bialor, The Clipped Stone Industry of Çatal Hüyük, Anatolian S., XII, 1962, pp. 67–110; J. Mellaart, The Beginning of Mural Painting, Archaeology, XV, 1962, pp. 2–12; J. Mellaart, Excavations at Çatal Hüyük, Anatolian S., XII, 1962, pp. 41–65, XIII, 1963, pp. 43–103, XIV, 1964, pp. 39–119, XVI, 1966, pp. 165–91; J. Mellaart, A 7th-6th Millennium Township of Southern Anatolia, ILN, CCXL, 1962, pp. 934–36, 976–78; H. Helbaek, Textiles from Çatal Hüyük, Archaeology, XVI, 1963, pp. 39–46; J. Mellaart, Çatal Hüyük in Anatolia, ILN, CCXLII, 1963, pp. 118–21, 160–64, 196–98; J. Mellaart, Deities and Shrines of Neolithic Anatolia: Excavations at Çatal Hüyük (1962), Archaeology, XVI, 1963, pp. 29–38; J. Mellaart, Earliest of Neolithic Cities, ILN, CCXLIV, 1964, pp. 158–60, 194–97, 232–34, 272–75; J. Mellaart, Çatal Hüyük West, Anatolian S., XV, 1965, pp. 135–56; J. Mellaart, Çatal Hüyük: A Neolithic Town in Anatolia, London, 1967.

Cnidus (Gr. Knidos). This was a Dorian (perhaps Laconian) colony on the Carian coast, possibly founded on an island; today it is a promontory joined to the mainland by a narrow isthmus. It was the site of a sanctuary of Aphrodite, where the celebrated statue of the goddess by Praxiteles was located. It was a part of the Dorian Hexapolis in the 7th century B.C., of the Delian League, of the Ptolemaic empire, and, lastly, of the Roman province of Asia. Both on the promontory and on the mainland, the city, encircled by walls dating from Hellenistic times and provided with three gates, was laid out in a checkerboard plan in an almost perfectly north–south direction. The acropolis was situated at the northeast end; at its foot lie the well-preserved remains of the theater and the ruins of the substructure, in polygonal construction, of the sanctuary of Aphrodite. In the southern part of the city, near the southeast and northwest ports, were located the agora, various connecting stoas, a smaller theater, an odeum, and two temples, one Ionic and the other Corinthian. All these monuments date, roughly speaking, from between the 4th and the 2d century B.C., the period of Cnidus' greatest prosperity. Of special interest, near Cnidus, is a tomb similar in type to the mausoleum at nearby Halicarnassus.

Bibliog. C. T. Newton, A History of Discoveries at Halicarnassus, Cnidus and Branchidae, 2 vols., London, 1862–63; A. von Gerkan, Antike Städteanlagen, Berlin, 1924, passim; F. Krischen, Löwenmonument und Mausoleion, RM, LIX, 1944, pp. 173–81; B. Ashmole, Demeter of Cnidus, JHS, LXXI, 1951, pp. 13–28; G. E. Bean and J. M. Cook, The Cnidia, BSA, XLVII, 1952, pp. 171–212; W. Penfield, The Asclepiad Physicians of Cnidus and Cos, with a Note on the Probable Site of the Triopion Temple of Apollo, Proc. Am. Philosophical Soc., CI, 1957, pp. 393–400; G. Bendinelli, EAA, s.v.

Demirci Hüyük. A small mound west of Eskişehir, this site was investigated by K. Bittel in 1937. Culturally it partook of a larger area (the so-called Sakarya group), to which Polatlı is also to be related. It represents, for the most part, an eastern extension of the Troy-Yortan culture. During its existence, the inhabited center was at one time destroyed, perhaps at the same moment as Troy II, but comparisons, as far as the material is concerned, extend up to Troy V.

Bibliog. K. Bittel and H. Otto, Demirci Hüyük: eine vorgeschichtliche Siedlung an der phrygisch-bithynische Grenze, Berlin, 1939; A. Götze, Kleinasien, 2d ed., Munich, 1957, p. 32.

Didyma (mod. Yenihisar). During the excavations made at Didyma (1906–30) by German archaeologists headed by Theodor Wiegand an archaic temple was found under the Hellenistic oracular temple of Apollo Philesios. The former temple, apparently dating from the early 6th century B.C., before Didyma was annexed to Miletus, was as renowned for its oracle as was the temple at Delphi. About the middle of the 6th century, Didyma was annexed to Miletus. The archaic construction was replaced by a large Hellenistic temple which burnt down at the beginning of the 1st century B.C. The present temple, almost all of which apparently dates from Roman times (between the reigns of Tiberius and Hadrian), was never completed; dipteral and hypaethral, it measures approximately 388 ft. × 197 ft. on the outside and had two rows of 10 Ionic columns along the short sides and two rows of 21 columns along the long sides, with a great 12-columned pronaos in antis. The entranceway, its threshold rising about 5 ft. above the ground, led into the open hall from which the oracles were uttered. Two steps led down to the adytum, the courtyard in which the Ionic tetrastyle *naiskos* stood, a structure dating from the 4th century B.C. It was connected to the port of Panormos by a sacred way four miles long (a lion and twelve sphinxes that stood along either side were removed by Charles Newton, 1860, and taken to the British Museum). A Byzantine church with baptistery was discovered in the adytum, but it was destroyed during excavations.

Bibliog. C. T. Newton, A History of Discoveries at Halicarnassus, Cnidus and Branchidae, 2 vols., London, 1862–63; O. Rayet and A. Thomas, Milet et le golfe Latmique, 2 vols., Paris, 1877–80; E. Pontremoli and B. Haussolier, Didymes, Paris, 1904; A. von Gerkan, Der Tempel von Didyma und sein antiker Baumass, ÖJh, XXXII, 1940, pp. 127–50; T. Wiegand, Didyma, 2 vols., Berlin, 1941–58; A. von Gerkan, Der Naiskos im Tempel von Didyma, JdI, LVII, 1942, pp. 183–98; G. Kleiner, Das Nachleben des pergamenischen Gigantenkampfes (Wpr, 105), Berlin, 1949, passim; A. W. Lawrence, Greek Architecture, London, 1957, pp. 202–06; G. Colonna, EAA, s.v. Mileto.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Divriği (Byz. Tephrike). A citadel in the district of Sivas, capital of a Seljuk principality in the 12th and 13th centuries, it became part of the Ottoman Empire in 1517. Besides the remains of buildings of little importance, there is the Ulu Cami (Great Mosque), a monument of great interest built in 1229. It consists of a double structure, both parts of which are rectangular in plan, though differently oriented; the larger one serves as a mosque, the smaller as a hospital. The prayer hall of the mosque is divided into five parallel aisles by rows of four octagonal pillars; the dome in front of the mihrab, ornamented with curious moldings, is sheathed by a segmented pointed cone. The west door is formed by archivolts which form pointed arches at the top. The hospital consists of a rectangular barrel-vaulted room with a large liwan at the far end and others along the sides, each of them flanked by two rooms. Directly opposite the large liwan and after the entranceway is a vestibule, beyond which a small flight of stairs leads up on the right to other rooms.

Bibliog. B. Ünsal, Turkish Islamic Architecture in Seljuq and Ottoman Times, 1071–1923, London, 1959.

Diyarbakır. This, the main city of the region of the same name, was situated on the banks of the Tigris in northern Mesopotamia and was known in antiquity as Amida. It was annexed to the Roman Empire by Galerius in A.D. 297 and was fortified by the Emperor Constans (394); during the next three centuries it was the scene of almost constant battle between the Byzantines and the Arabs. It finally became a part of the Ommiad (q.v.) caliphate and later of the Abbasside (q.v.) caliphate, from which it gained its independence at the end of the 10th century. At various times it belonged to the Marwanid dynasty and to the Seljuks and in the 11th century it became the stronghold of the Ortuqids. Passing under Mongolian, Turkoman, and Persian rule, it was finally conquered for the Ottomans by Selim (1515).

The Ulu Cami, built perhaps on the site of a Byzantine church, is rectangular in plan, wider than it is long; a portal leads into a spacious courtyard with arcades on the sides and two ablution fountains, one of them octagonal with the covering supported by small columns, the other square. Northeast of the courtyard is the Masudiye Medrese, preceded by a portico. The mosque has a central nave, set at right angles to the *qibla* wall and higher than the three transverse aisles on either side. The entire building is covered with an overhanging roof on trusses. The Zincirli Medrese, dating from the 12th century (now a small archaeological museum) consists of a central courtyard, on the south side of which there is a liwan flanked by various rooms. Other Ottoman mosques of lesser importance include the Malik Ahmet Paşa Cami, dating from the end of the 15th century, and the slightly earlier Behram Paşa Cami. The walls surrounding the city were built by Constans and were enlarged and restored at various periods; remaining from Moslem times are a few reliefs on various gates and bastions, such as those on the Harput Gate (a bird with outspread wings and some walking lions) dating from perhaps the beginning of the 10th century; on one of the towers are a sphinx from Seljuk times and a figure armed with an ax from the same period. Other Seljuk carvings on the Ulu Badan bastion show a two-headed eagle and lions with human faces, similar to those on the Yedi Kardes bastion. The citadel, perhaps also dating from the 4th century, includes works from the Islamic period; the mosque of the citadel, built about the middle of the 12th century, must have undergone many alterations. The minaret, in its present form, is cylindrical and rests on a square base.

Bibliog. M. van Berchem, J. Strzygowski and G. L. Bell, Amida, Heidelberg, 1910; R. Berliner, Die grosse Moschee von Diyarbakr, Mnh. für Kw., XV, 1922, pp. 161–72; A. Gabriel, Monuments turcs d'Anatolie, 2 vols., Paris, 1931–34; K. A. C. Creswell, A Bibliography of the Architecture, Arts and Crafts of Islam, London, 1961, cols. 469–70.

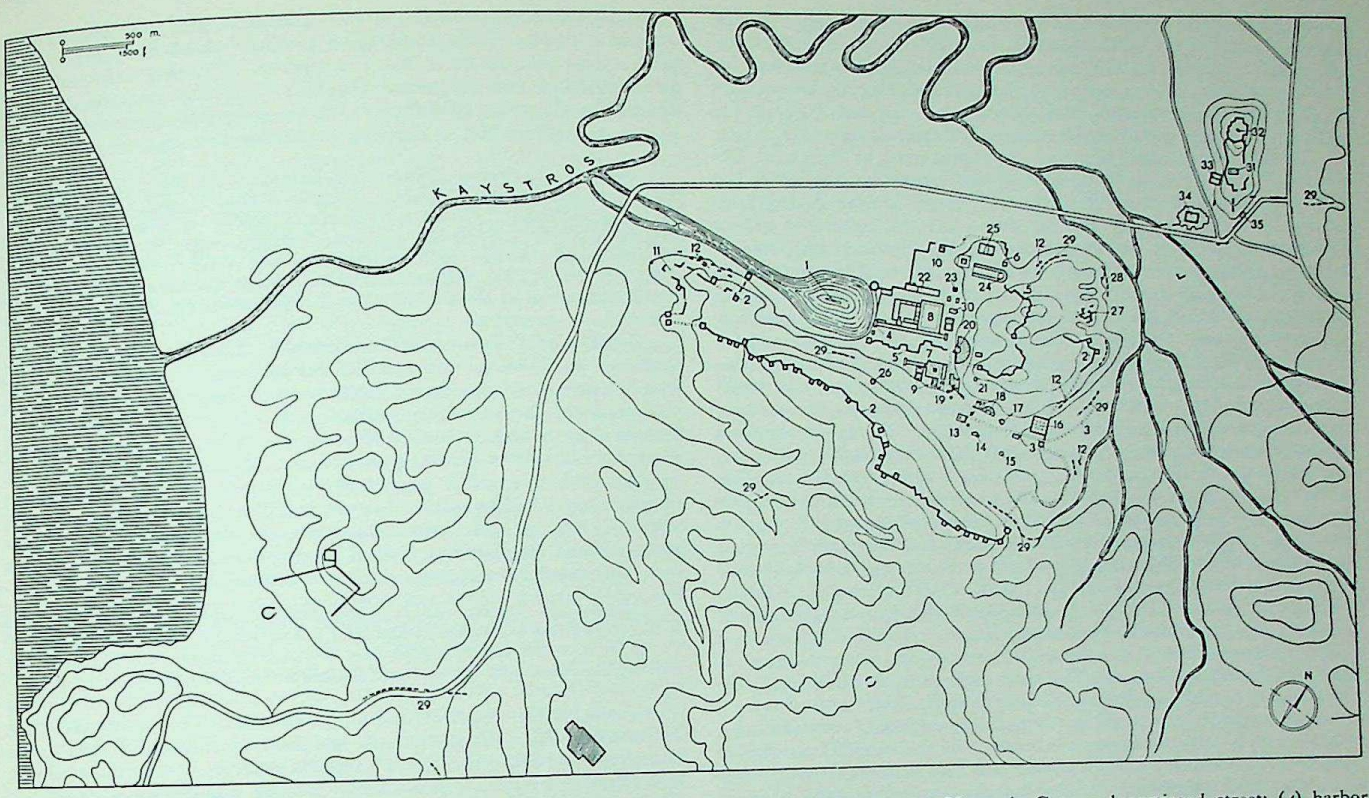
Eflatun Pınar. This site lies southwest of Konya, near Lake Beyşehir, next to a mound bearing evidences of Late Chalcolithic occupation. There is a small hollow with the pool of a large spring from which a stream flows toward the lake; on the northern bank of this stream is a construction (altar?) built of stone blocks, the front of which is adorned with sculptured figures. The central group consists of two enthroned deities (sun god and sun goddess?) surrounded by smaller figures, two of which support a large winged disk that fills the entire width of the façade. It has been described as a monument of victory raised by Tudhaliyas IV (Bittel and Naumann, 1951) and as having a religious significance (Mellaart, 1962), but according to Seton Lloyd (1956) only the character of the masonry justifies the classification of this work as Hittite. According to Mellaart, the unfinished statue at Fasillar, along with another female figure, now lost, is to be considered the crowning piece of Eflatun-Pınar structure. The work was probably erected sometime during the 13th century B.C..

Bibliog. H. G. Güterbock, Alte und neue hethitische Denkmäler, Halil Edhem Hatira Kitabi, I, Ankara, 1947, pp. 59–70; K. Bittel, Beitrag zu Eflâtun-Punar, Bib. Orientalis, 1953, pp. 2–5; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, p. 187, 382; E. Laroche, Eflatun Pinar, Anatolia, III, 1958, pp. 43–47; J. Mellaart, The Late Bronze Age Monuments of Eflatun Pinar and Fasiller near Beyşehir, Anatolian S., XII, 1962, pp. 111–17.

Ephesus (Gr. Ephesos; mod. Selçuk). According to tradition, Ephesus was founded in the 11th century B.C. by a group of Ionian settlers headed by Androcles on a site near the mouth of the River Cayster (Küyük Menderes), at the head of the great "royal highway" into Anatolia. It was enormously important, both historically and culturally, throughout antiquity; a by no means negligible element in the immense prestige enjoyed by Ephesus was the temple dedicated to a goddess of fertility, subsequently identified with Artemis, built in the plain northeast of the city. Conquered by Cyrus after having been subject for a time to Lydia, it lay for two hundred years under the Persian yoke, except for brief intervals of independence; it regained its freedom only with the arrival of Alexander the Great. As of 278 B.C., it was reorganized by Lysimachus in accordance with a new plan, which included a vast *enceinte* wall and the putting of the harbor system into order. The city then suffered the fate of the other Ionian cities: in 196 B.C. it was conquered by Antiochos III who, upon suffering defeat at the hands of the Romans, was forced to give it to the kings of Pergamum. Bequeathed in 129 B.C. to the Romans, Ephesus became the capital of the province of Asia and, except for the interval of the Mithridatic wars, retained a position of absolute supremacy and unrivaled prestige until A.D. 263, when the Goths sacked the Temple of Artemis. Even so, during the 5th and 6th centuries, Ephesus remained the most important city of the Byzantine Empire after Constantinople. During the expansion of Christianity, the urban district and the hill overlooking the Artemision (now Selçuk) were enriched in the 5th century by several large churches; in 431 it was the scene of the ecumenical council, which was held in St. Mary's Cathedral. After the Arab incursions of 700 and 716, the city attempted to reestablish itself at the heart of the ancient urban complex, running a small *enceinte* wall around the rebuilt inhabited area. At the same time, another independent center must have sprung up in the vicinity of St. John's Basilica (II, FIG. 772), equipped with its own aqueduct; but new incursions quickly destroyed this city, so that by the time of the Crusades it was practically deserted. Local harbor activities were transferred to the Gulf of Kuşadasi, and in the vast area once occupied by Ephesus the only inhabited area was a small village, centered around St. John's Basilica, which continued to exist through the conquests of the Seljuk and Ottoman Turks down to the present day, at first under the name of Ayasouk and then under that of Selçuk. The ruins were first excavated by J. T. Wood and then by D. G. Hogarth, who explored the site of the Artemision; since 1895, systematic excavations have been undertaken by the Austrian Archaeological Institute. Perhaps the earliest settlement sprang up on the hill where the present-day village of Selçuk is located, a small height, part of it with steeply sloping sides, commanding the road between Smyrna and Anatolia. Recent excavations in the neighborhood of the Byzantine "Gate of the Persecution" have brought to light remarkable earthenware vessels from the Helladic Age. On the plain below Selçuk stood the great Temple of Artemis, of which, unfortunately, little more than the site remains. Excavations by English archaeologists have uncovered traces of its various stages: remains of the foundations of the central *naiskos*, ivories, goldwork, and pottery dating from the 8th–7th century B.C. However, important elements were found of the great temple designed by the Cretan Chersiphron and Metagenes with the help of Theodoros of Samos (560–546 B.C.), and which benefited from the generosity of Croesus, the king of Lydia. The temple apparently had 8×20 Ionic columns on the outside (9×21 according to others) and measured 370×180 ft. It was hypaethral, dipteral, and had three rows of columns along the front (a double colonnade also ran along the pronaos and in the opisthodomos); in the *sub divo* courtyard stood a small temple with the statue of the goddess. Some of the columns had reliefs on the lower part and were set on dados, also carved. The temple, which had burned down in 356 B.C., was rebuilt in Hellenistic times in the same form, with the lower part of the columns also decorated with sculptures, one of them ascribed to Skopas (q.v.).

The Hellenistic and Roman city spread over the slopes of two hills lying towards the sea, Mt. Coressus and Mt. Pion (mod. Bülbül Daği and Panayir Daği respectively); the harbor, an oval basin communicating with the sea by means of a canal, was built in the hollow between the two hills. The city limits were delineated by the Hellenistic walls, considerable portions of which are still standing. This protective fortification, which wound upward along the crest of the two hills, was built of stone blocks with square towers and was five miles in perimeter; two of the city gates, known as the Magnesia Gate and the Coressus Gate, have been identified. In the more

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Ephesus, archaeological plan. (*1*) Ancient harbor; (*2*) walls dating from the time of Lysimachus; (*3*) Magnesia Gate and porticoed street; (*4*) harbor gate; (*5*) Byzantine walls; (*6*) site of the Coressus Gate; (*7*) agora and porticoed street; (*8*) porticoed square, harbor baths, and gymnasium; (*9*) Celsus Library and temple dedicated to Serapis (?); (*10*) Hellenistic temple; (*11*) site of the Temple of Hermes; (*12*) necropolises; (*13*) Temple of Domitian; (*14*) fountain; (*15*) so-called "Tomb of St. Luke"; (*16*) east gymnasium; (*17*) baths of Varius; (*18*) odeum and prytaneum; (*19*) baths of Scholastikia, temple of Hadrian, and, across the street, nymphaeum and octagon; (*20*) large theater and gymnasium; (*21*) round building; (*22*) Council church; (*23*) Byzantine baths; (*24*) stadium; (*25*) gymnasium of Vedius; (*26*) domed tomb; (*27*) Grotto of the Seven Sleepers; (*28*) cliff sanctuary with votive niches; (*29*) aqueducts; (*30*) Byzantine building. In the Selçuk area: (*31*) Church of St. John; (*32*) citadel; (*33*) Isa Bey Cami and baths; (*34*) Artemision; (*35*) museum (*from J. Keil, 1957, updated*).

level area opening onto the harbor stood the nucleus of the city, with a broad arcaded marble-paved street known as the Arcadian Way (because of restorations made in the time of Arcadius, 383–408) running alongside the public baths; a parallel street further south led to the agora. Monumental gates were set at the beginning and end of these streets, so that the Arcadian Way started at the harbor and was marked by monumental portals with Ionic columns; the street leading to the agora began at another gate of two orders. Another important street, the so-called "Marble Street," descended from the Magnesia Gate to the town center and was also lined with arcades, which underwent radical changes after the Arab destruction; the thoroughfare followed its course amidst tombs, public baths, temples, public buildings, and residential quarters along the valley between the two hills. The Hellenistic agora, a vast square covering some 524 sq. ft. and with a clepsydra in the center, had a double-aisled stoa all around and probably simple two-storied shops on three sides; the agora was connected on the east side to an outside stoa of the Doric order; the west side had a propylaeum with a double Ionic colonnade; to the south was a triple gateway, built by Mazaeus and Mithridates in honor of Augustus in the years 40–30 B.C., which gave entrance to the magnificent library erected by Julius Celsus Aquila in honor of his father, Celsus Polemeanus, Roman consul in A.D. 92. The library was a rectangular hall with a tripartite façade, adorned with two stories of colonnades, in the guise of a theatrical *frons scaenae*; it was converted in late Roman times into a nymphaeum (from which came the well-known historical reliefs of the Aurelian period); inside were three floors of bookshelves served by galleries and colonnades, as well as a large central niche with a cell beneath it containing the sarcophagus of Celsus. The imposing Temple of Serapis (2d cent. of our era) was situated west of the agora, with a barrel-vaulted cella preceded by an immense octastyle colonnade and a monumental staircase set at one end of an arcaded courtyard. Given the political position of Ephesus in the Eastern Roman Empire, the temples for the religious cult of the emperor and the works they contained assumed particular importance. The Temple of Domitian stood in the southern part of the city on an enormous substructure and had a tetrastyle *cella* with a peristasis of 8×13 columns with a freestanding altar in front; the head and one arm of the enormous statues of the emperor have also been found. The small, recently reconstructed Temple of Hadrian (XII, PL. 189) faced onto the "Marble Street" with a two-storied colonnade and a central arcade (four columns on the lower and six on the upper). Interesting carvings, partly from Hadrian's time, partly from the late Roman period, are to be seen in the pronaos. A Hermaion stood on the northwest slopes of Mt. Coressus. Among the numerous public baths of Ephesus, those dating from Roman times follow the plan typical of Asia Minor with several parallel rows of rooms, with the tepidariums aligned on the south and west sides. The largest baths (near the harbor), of truly colossal dimensions, had a triple-portico area in front (the square of Verulanus; A.D. 150–200) and consisted of a colonnaded exercise yard with two open rooms on either side leading to the rooms for bathing. The bathing rooms themselves were laid out in the usual manner, with the caldarium projected out from the neighboring rooms. The contemporaneous gymnasium of Vedius (2d cent. A.D.) conceived as a gymnasium-bath, also had an open space for exercising, surrounded by arcades and with a lavatory on one side, halls for public gatherings, dressing rooms, a swimming pool, and tepidariums. Worthy of special note is the hall of the imperial cult in the middle of the main courtyard. Other gymnasiums (*palaestrae*) of the same type were to be found in front of the theater and near the Magnesia Gate; like the gymnasium of Vedius, they all date from the 2d century. Another public bath, recently uncovered near the library, was rebuilt in the 4th century by one "Scholastikia" along the same general lines, that is with parallel rows of rooms. The theater (XII, PL. 188), of vast dimensions, is situated on the slopes of Mt. Pion, near the agora; the *skene*, consisting in Hellenistic times of a double row of rooms and a logeion in front, was changed in Roman times (2d cent. of our era) into a complex and towering *frons scaenae* with three stories of columns, niches, architraves, and a high *pulpitum*. The odeum, still well preserved, was entered from the "Marble Street"; it was built at the time of Antoninus Pius by P. Vedius Antoninus, who also commissioned the gymnasium bearing his name. The stadium, in the northern part of the city, was hollowed out of the side of Mt. Pion during the reign of Nero. The necropolises were located on the rear slope of Mt. Pion, where the remains of a tower from Hellenistic times (probably a funeral monument) have been found, consisting of a round tower of two orders, Doric and Ionic, resting on a heavily bossed dado. Dating from the Roman

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

period are a large sepulcher (the so-called Fontäne) and a nearby round colonnaded tomb, known as St. Luke's. Of particular historical and artistic interest is the magnificent Hellenistic mausoleum at Belevi (northeast of the present village of Selçuk), modeled along the lines of the Mausoleum of Halicarnassus, and perhaps built for Antiochus II, who was assassinated at Ephesus in 246 B.C.

Christian art is most impressively represented at Ephesus. Excavations of the city have unearthed the successive phases of the principal and oldest church, St. Mary's (Hagia Maria), dating from the end of the 2d century and set into a colossal columned gallery (the *Mouseion*). After the destruction by the Goths in 263, one of the outer sections was made into an atrium, the middle section into a place of worship (where the Council of 431 was held), and the remaining section, at the further end, into a bath and living quarters. At one side stands the twelve-sided baptistery, with a circular pool set inside a round domed room adorned with niches. In the 8th century, after the destructions brought about by the Arabs, two small churches were built within the perimeter of the 5th-century basilica; the more important one, of brick and vaulted, was constructed on an inscribed-cross plan. Another early Christian basilica was uncovered in the vicnity of the Magnesia Gate and a small church has come to light along the Arcadian Way, almost in front of the side entrance to the large public baths. A Christian graveyard of great interest is the Byzantine necropolis, the legendary cemetery known as the "Grotto of the Seven Sleepers." The nucleus consists of a burial place dating from Roman times, a chamber with arcosoliums carved partly out of the rock and partly constructed and roofed with a dome. Between the 5th and 6th centuries, a church, burial chamber, and rooms with arcosoliums, decorated with frescoes or mosaic pavements, were added to the fore part. The most important church of Ephesus was that, on the hill of Selçuk, dedicated to St. John and conceived as a martyrium of the Apostle. It perhaps originally consisted of a square nucleus with a dome containing the relics and four lightly colonnaded arms (only the foundations are known). In the 6th century, Justinian replaced it by an imposing vaulted cruciform structure. The nave, the two aisles, and the transept were covered with six domes; gynaecea dominated the smaller naves. In the 8th century defensive walls with a massive gate flanked by towers ("Gate of the Persecution") were built on the same hill as St. John's, at the top of which stood a castle which remained in use until the time of the Crusades.

After the Islamic occupation, an important monument of Seljuk art was built at the foot of St. John's: the Sultan Isa Bey Mosque, dating from 1375 and notable for its magnificent doorway with stalactites. Designed by a certain 'Ali of Damascus, it bears clear analogies to Syrian mosques, consisting as it does of a walled courtyard and two intersecting naves. Fourteen other mosques, an impressive turbeh, and a many-domed bath (all dating from Seljuk times) completed the splendors of the Islamic city.

BIBLIOG. E. Falkener, Ephesus and the Temple of Diana, London, 1862; J. T. Wood, Discoveries at Ephesus, London, 1877; O. Benndorf et al., ed., Forschungen in Ephesos, 5 vols., Vienna, 1906–53; V. Schultze, Altchristliche Städte und Landschaften, II, Gütersloh, 1926, passim; R. Vallois, L'Artémision d'Ephèse, Mél. Glotz, II, Paris, 1932, pp. 839–50; F. Krischen, Das Artemision von Ephesos, Festschrift W. Dörpfeld, Berlin, 1933, pp. 71–77; S. Guyer, Les monuments chretiens en Asie Mineure, Atti III Cong. int. archeol. cristiana (1932), Rome, 1934, pp. 433–58; B. Trell, The Temple of Artemis at Ephesos (Numismatic N. and Monographs, 107), New York, 1945; G. Rodenwaldt, Mausoleum von Belewi, AAnz, 1946–47, cols. 38–43; J. Keil, Das Serapeion von Ephesos, Ankara, 1947; A. M. Mansel, Türkiyenin arkeoloji . . . bibliografya, Ankara, 1948, pp. 158–71; J. Keil, Der Grabherr des Mausoleums von Belevi, AnzÖAk, LXXXVI, 1949, pp. 51–60; K. Otto-Dorn, Die Isa Bey Moschee in Ephesus, Istanbuler Forsch., XVII, 1950, pp. 115–31; C. Picard, Les "symplegmata" du gymnase d'Ephèse, CRAI, 1955, pp. 20–32; F. Fasolo, La basilica del concilio di Efeso, Palladio, VI, 1956, pp. 1–30; M. Demus Quatember, Zur Konstruktionsweise der "Tomba di Pitagora" bei Cortona, Palladio, VII, 1957, pp. 49–53; F. Miltner, Ephesos, Vienna, 1958; W. Alzinger, Die Stadt des siebenten Weltwunders, Vienna, 1962; F. Fasolo, L'architettura romana di Efeso, Rome, 1962; R. Maccanico, Ginnasi romani ad Efeso, AC, XV, 1963, pp. 32–60; J. Keil, Führer durch Ephesos, 5th ed., Vienna, 1964; P. Romanelli, EAA, s.v. See also the preliminary reports of excavations by O. Benndorf, R. Heberdey, J. Keil and F. Miltner in ÖJh, Beiblatt, 1898 ff.

Erzurum (Ar. Ars el-Rūm, "land of the Romans"). This was the Byzantine city of Theodosiopolis; it changed names many times — under the Armenians, Sassanians, Seljuks, Mongolians, and Turkomans — until it became a part of the Ottoman Empire in 1515. The important remaining monuments date from the Seljuk period, except for an Ottoman mosque which some have attributed to Sinān. The Çifte Minare Medrese (double-minaret madrasah), or Hatuniye Medrese, which today houses a small museum, was built in 1235 by Hatun, the daughter of Alaeddin Kaykubad. It consists of a rectangular courtyard surrounded by two levels of arches; at the center of each side is a liwan which cuts through to the top of the upper story. A round turbeh, with a conical roof and blind arches around the body of the building, is located behind the further liwan on the long side; in front, there is a portal decorated with stalactites and flanked by two minarets. The Ulu Cami also dates from Seljuk times, like the group of turbehs with conical roofs situated behind it. It has seven bays and is severely geometrical in aspect.

BIBLIOG. L. Texier, Notice sur Erzeroum, B. Soc. de Géographie, XX, 1843, pp. 213–28; V. Cuinet, Turquie d'Asie, I, Paris, 1891, pp. 181–90; Mehmet Nusret, Ta'rikhce-i Erzerum (History of Erzerum), Constantinople, A.H. 38; A. Ş. Beygu, Erzerum, Istanbul, 1936; K. A. C. Creswell, A Bibliography of the Architecture, Arts and Crafts of Islam, London, 1961, col. 470; J. M. Rogers, The Çifte Minare Medrese at Erzerum and the Gök Medrese at Sival, Anatolian S., XV, 1965, pp. 63–85.

Gavurkalesi ("Fortress of the Infidels"). The site, situated 35 miles southeast of Ankara, contains the remains of a cyclopean wall in which basalt was introduced and, in the enclosed space, a burial chamber with an imitation vaulted ceiling. Toward the south the terrace is sustained by a wall of natural rock into which was carved a relief showing two Hittite gods approaching a seated goddess. The connection between this scene and the burial chamber would seem unquestionable. The sanctuary was completed by an entrance road set on terracing walls and a monumental flight of stairs. These remains have also been attributed to the Phrygian period, in which case they would amount to a true *enceinte* wall.

BIBLIOG. G. Perrot and E. Guillaume, Ghiaurkalessi: Ses murailles cyclopéennes, ses bas-reliefs taillés dans le roc, RA, N.S., XII, 1865, pp. 1–14; H. H. von der Osten, Discoveries in Anatolia 1930–31, Chicago, 1933, passim; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, passim.

Gordium (Gr. Gordion; mod. Yassihöyük). The site of Gordium is located a short distance from the modern town of Polatlı, west of Ankara. In 1889 the Körte brothers sank two test probes in the hill where the city was presumably located and explored several of the numerous mounds scattered over the Sakarya valley. One of them, an immense tumulus over 150 ft. high, was the so-called "Tomb of Midas." Since 1949, excavation has been carried out by a team from the University of Pennsylvania which explored mainly the city area. On the basis of preliminary reports, certain conclusions may be drawn. The earliest traces of occupation seem to date from the Early Bronze Age. During the Middle and Late Bronze Ages, a necropolis (located between mounds H and I) was laid out; nonstratified material from the Hittite period has also come to light in the urban area. The most interesting excavations were undertaken in the neighborhood of the city gate, which underwent three radical transformations. The original gate may be dated from before the 8th century and, for the moment, it is the most important ruin of the earliest Phrygian period. Subsequently there took its place the great 8th–7th century gate, still preserved up to a height of 26 ft., with a paved area with a series of buildings facing onto it. Beween the invasion of the Cimmerians and the Persian occupation, the royal seat was very likely transferred to some nearby spot, probably just outside the destroyed city. In Persian times, the city gate was filled in and a layer of earth thrown over the entire area to create a uniform terracing. The last reconstruction of the gate follows more or less the same architectural plan. Though largely rebuilt after the destruction of 684, the city apparently followed, to a certain extent, the lines of the preexistent living area. Inside the gate was a square with numerous buildings and an altar for fire worship. In Hellenistic times the city lost stature and eventually became a farming village with perhaps a few workshops of an artisan nature. The excavation of several by no means humble tombs raises the suspicion, however, that there is still a great deal to be discovered in this respect. The remains of a Galatian village date from slightly before the site was abandoned; by about 200 B.C. Gordium was practically deserted. Signs of occupation in Roman imperial times were found in only one part of the urban area. The tumuli, artificial mounds of earth used to hide the tombs, are numerous; the Körte brothers excavated five of them and more than a dozen have been explored by American archaeologists. The tombs have yielded a rich abundance of material and in addition to such relatively imperishable objects as bronzes, numerous wooden furnishings have come to light. In the 7th century and later the interred body was protected by a wooden chamber, whereas in the 6th century cremation on individual pyres was used. Both methods have been found in the graves of the lower classes.

BIBLIOG. G. and A. Körte, Gordion: Ergebnisse der Ausgrabung im Jahre 1900 (JdI, Ergänzungheft, V), Berlin, 1904; D. H. Cox, A Third Century Hoard of Tetradrachms from Gordion, Philadelphia, 1953; S. Lloyd, Early Anatolia, Harmondsworth, 1956, passim; M. Mellink, A Hittite Cemetery at Gordion, Philadelphia, 1956; A. Götze, Kleinasien, 2d ed., Munich, 1957, passim; R. S. Young, Gordion of the Royal Road, Proc. Am. Philosophical Soc., CVII, 1963, pp. 349–64; W. Ruge, RE, s.v. See also the preliminary excavation reports of R. S. Young and G. R. Edwards in

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

AJA, 1954 ff.; Anatolian S., 1951 ff.; Archaeology, 1950 ff.; Expedition B. Univ. Mus. of the Univ. of Pennsylvania, 1958 ff.

Göreme, Valley of. In the province of Nevşehir, near Urgüp, is a complex of rock monasteries, very likely the ancient Korama mentioned in the records of St. Hieronymus. The valley is strewn with pyramids and cones of volcanic tufa that achieved their strange forms through the action of erosion caused by wind and water. These cones were probably inhabited by ascetics during the early centuries of Christianity, and they certainly formed a sort of monastic stronghold during the time of the Arab invasions between the 8th and 11th centuries. Abandoned after the Turkish conquest, they were used, and in part are still used, by the local inhabitants as storerooms and pigeon-lofts. There are also architectonic structures — churches, chapels, funeral chapels, refectories, dormitories, cells — hewn out of the rock and adorned with façades with two or three orders of blind horseshoe-shaped arches; the inner rooms sometimes have a large mosaic cross stretching over the entire surface of the flat ceiling and friezes set into the upper walls. There are, too, rooms with barrel and hemispherical vaults, also carved out of the rock (i.e., the monastery adjoining the Karanlık Kilise). There are innumerable churches and chapels, and they have been only partly explored; the early stages are difficult to date with any certainty. Various plans were utilized, the most common being that with a barrel-vaulted nave and one or three apses; less common, but by no means rare, are free-cross and inscribed-cross churches with a central dome and small domes at the corners (St. Barbara; II, PL. 433). The horseshoe arch prevails everywhere. The earliest decorations, aniconic in character (crosses and geometric designs painted in red), probably date from the Iconoclast period (8th cent.). The aniconic paintings were later covered by layers of figured paintings whose subject matter was very frequently taken from the apocrypha. The largest and most important of the churches, Tokalı Kilise, has a narthex, a transverse nave with a ribbed barrel vault carved out of the rock, and three horseshoe-shaped apses opening onto a narrow corridor parallel to the nave and connected to it by means of archways; the many paintings date from the time of Nicephorus Phocas (963–67). Tokalı Kilise is surrounded by chapels at different levels. Notable among these is the Chapel of St. George, decorated with scenes from the life of the saint. Other churches with frescoes include Saklı Kilise, Karanlık Kilise, and Elmali Kilise.

BIBLIOG. W. J. Hamilton, Research in Asia Minor, Pontus and Armenia, II, London, 1842, pp. 250–58; C. Texier, Description de l'Asie Mineure, II, Paris, 1849, pp. 75–85; A. M. Lewidis, *Αἱ ἐν μονολίθοις μοναὶ τῆς καππαδοκίας καὶ λυκανίας*, Constantinople, 1899, passim; J. Ficker and H. Rott, Kleinasiatische Denkmälern aus Pisidien, Pamphylien, etc., Leipzig, 1908, pp. 210–36; G. de Jerphanion, Une nouvelle province de l'art byzantine: Les églises rupestres de Cappadoce, 2 vols., Paris, 1925–42; E. Wiegand, Zur Datierung der kappadokischen Höhlenmalereien, Byz. Z., XXXVI, 1936, pp. 337–98; M. Hadzidakis, A propos d'une nouvelle manière de dater les peintures de Cappadoce, Bizantion, XIV, 1939, pp. 95–113; E. Kirsten, Cappadocia, Reallexikon für Antike und Christentum, II, Stuttgart, 1954, pp. 862–91; C. and G. Holzmeister, Bilder aus Anatolien, Vienna, 1955; L. Budde, Göreme, Düsseldorf, 1958; M. S. Ipşiroğlu and S. Eyubouğlu, Sakli Kilise, Istanbul, 1958; L. Budde, Die Johanneskirche von Göreme, Pantheon, XIX, 1961, pp. 263–71; J. Lafontaine, Sarisa Kilise en Cappadoce, CahA, XII, 1962, pp. 263–84; P. Verzone, Gli monasteri de Açik Serai in Cappadocia, CahA, XIII, 1962, pp. 118–36.

Hacılar. A site in the vilayet of Burdur, Hacılar was excavated by J. Mellaart between 1955 and 1960. Seven city levels have come to light, in which no pottery but many marble vessels were found. Of particular interest is the evidence of skull worship (as was also found in Palestine, Natufian era). After an interruption, the duration of which is, for the moment, impossible to estimate, there is a sequence of nine levels which take the city from the Late Stone Age to the Early Chalcolithic Age. The Stone Age pottery is monochrome, but at the end of the period — contemporary with Mersin XXVI — decorations consisting of geometric designs against a light background began to appear and this new style was to be characteristic from that time until the site was abandoned; dark red lozenges, zig-zags, and broken-line triangles, all against a cream-colored background, commonly adorn vessels that are almost rectangular in shape. On Level I the decoration is airier and less heavy; the technique of painting the usual geometric patterns in white on a dark ground also appears. Of considerable interest are various examples of anthropomorphic vessels. Also interesting are a series of female figurines, often steatopygous, which testify to the existence of some sort of fertility cult; set in various poses and sometimes associated with wild animals, they were common in the Late Neolithic Age; in the Early Chalcolithic Age, only the standing type survived. On Level II, the houses, consisting mostly of two rooms and a shrine, are grouped together into a single large rectangular block. Level I is characterized by a fortress proper which encircled the summit of the hill, leaving a large open space in the middle. According to Mellaart, the dates, based in part on carbon 14 tests and excluding the pre-pottery period, are as follows: Late Neolithic (Levels IX–VI), 5600–5400 (with destructions); Early Chalcolithic (Levels V–I), 5400–4800/4750. It is to be noted that the Level I fortress and the pottery painted in the new style are apparently to be ascribed to an influx of new populations.

BIBLIOG. J. Mellaart, Excavations at Hacılar, Anatolian S., VIII, 1958, pp. 127–56, IX, 1959, pp. 51–65, X, 1960, pp. 83–104, XI, 1961, pp. 39–75.

Halicarnassus (Gr. Halikarnassos; mod. Bodrum). A Dorian colony on the Carian coast, Halicarnassus in the 6th century became subject to Persia; under the hegemony of Athens in the 5th century, it subsequently became the capital of a Persian satrapy administered, however, by pro-Hellenic satraps. Conquered by Alexander the Great, it became a possession of the Ptolemies, of Rhodes, and lastly of Rome as a part of the province of Asia. The archaic and classical city possibly extended over the two promontories which enclose the small bay; a temple of Apollo perhaps stood on the promontory known as "St. Peter's," originally an island. The Hellenistic and Roman city was laid out on a slope which ended in a deep inlet. Above was the acropolis with a temple of Ares at the center, a temple of Hermes and Aphrodite on the right, and the palace of the satrap Mausolus on the left; farther down, in the center and next to a road, was the renowned mausoleum, the burial place of Mausolus; at the bottom, by the harbor, was the agora. Of all the ancient monuments, there remain only the ruins of the massive, polygonal and (on the west side) isodomic walls (4th cent. B.C.), the foundations and part of the decorations of the mausoleum (III, PLS. 377, 378), the foundations of the Ionic temple of Ares, various elements of a Doric stoa dating from Ptolemaic times, a building thought to be a shrine of Demeter and Kore, and scanty remains of a theater. The archaic and classical necropolises lie at the heart of the city of Mausolus, whereas the Hellenistic and Roman ones, with underground tombs, are situated outside the walls to the north and west of the city. An interesting late Roman house west of the mausoleum is richly adorned with mosaics and marbles (4th–5th cent. A.D.). Outstanding among the monuments of the medieval and modern city (Bodrum) are a Byzantine monastery, in ruins (Hagia Marina), and St. Peter's Castle, built in 1402 by the Knights Hospitalers, who occupied it until 1523.

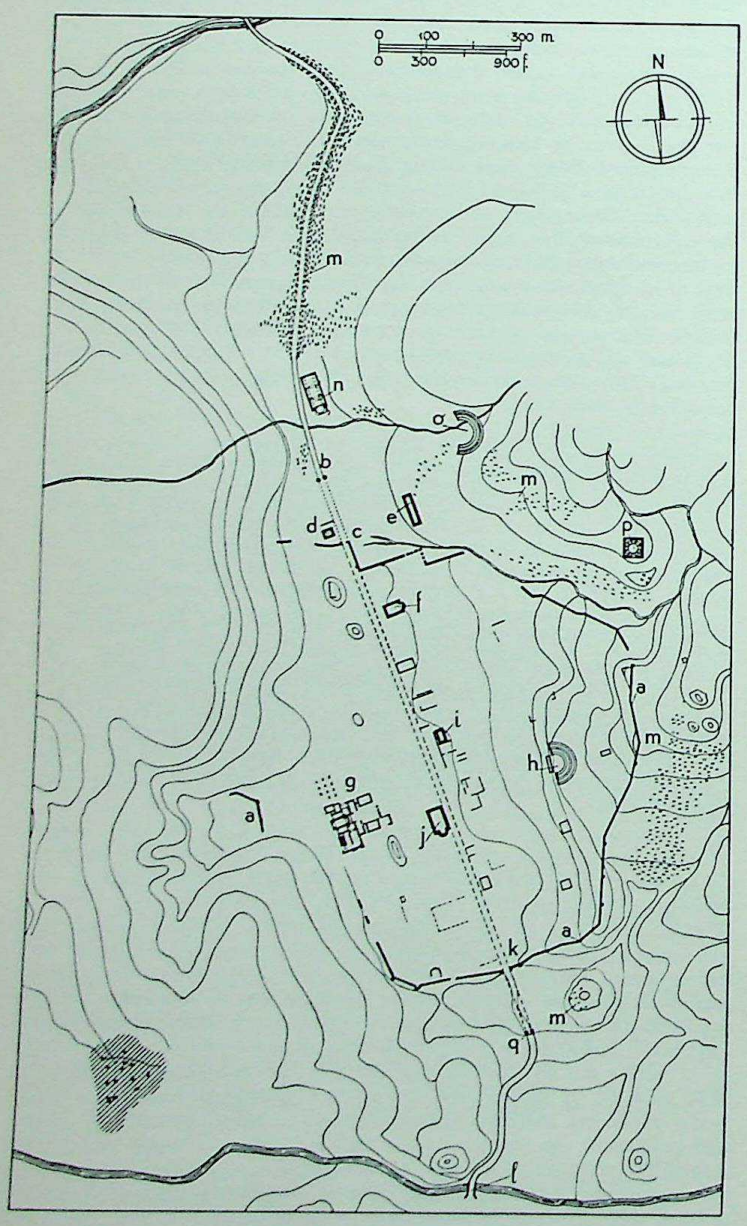
BIBLIOG. C. T. Newton, A History of Discoveries at Halicarnassus, Cnidus and Branchidae, II, 2, London, 1862–63; W. R. Paton, Excavations in Caria: Report on a Tomb in the Neighborhood of Halicarnassus, JHS, VIII, 1887, pp. 66–78; F. V. von Holbach, Felsgräber in Halikarnass, ÖJh, VI, 1903, pp. 101–08; F. W. Hasluck, Datch-Stadia-Halikarnassos, BSA, XVIII, 1911–12, pp. 211–15; U. von Wilamovitz-Möllendorff and G. Karo, Aus Halikarnassos, AM, XLV, 1920, pp. 157–62; A. Maiuri, I castelli dei cavalieri di Rodi a Cos e a Budrum, ASAtene, IV–V, 1921–22, pp. 275–343; A. Della Seta, Budrum, BArte, N.S., II, 1922–23, p. 284; J. Van Breen, Het reconstructienplaan voor het Mausoleum te Halikarnassos, Amsterdam, 1942 (bibliog.); E. Buschor, Maussollos und Alexander, Munich, 1950; G. E. Bean and J. M. Cook, The Halicarnassus Peninsula, BSA, L, 1955, pp. 85–108; G. E. Bean and J. M. Cook, The Carian Coast: III, BSA, LII, 1957, pp. 58–146; G. Dormay, L'Amazonomachie du Mausolée d'Halicarnasse, AntC, XXVI, 1957, pp. 383–403; K. Jeppesen, Paradeigmata, Aarhus, 1957 (thesis); G. F. Bass, Mycenean and Protogeometric Tombs in the Halikarnassos Peninsula, AJA, LXVII, 1963, pp. 353–61; L. Rocchetti, EAA, s.v. Alicarnasso.

Heraclea of Latmos (mod. Kapı Kırık Yaylasi). The city, of Carian origin, stood on the slopes of Mount Latmos, which at that time descended into the Aegean (later, the body of water known as Bafa Lake was formed). Conquered by the Ionians during the 11th-century migrations, it took part in the Ionian revolt and was subsequently conquered by Alexander the Great. It was for a short period of time the capital, under the name of Plistarcheia, of an independent kingdom ruled by the brother of Cassander (350?–297 B.C.), Plistarch. Particularly prosperous in Roman times, it continued to be so under the Byzantines, but the Turkish occupation marked the beginning of its decline, Of the greatest importance are the excellently preserved Hellenistic fortifications installed around the plains and heights of the city proper as well as on the two hills (north and east of the city) which served, to all intents and purposes, as bastions for controlling the road. The *enceinte* wall, consisting of a double curtain of stone blocks filled in with boulder chips, was some 4½ miles around and included numerous gates and posterns, two-storied square towers of various sizes and a sentry walk with arrow slits. Dating from a later period, though still Hellenistic, is the retrenchment of the east wall by means of a cross wall fitted with semicircular towers. Remaining of the city are the ruins of the colonnaded agora, a temple of Athena, a bouleuterion, and the theater. There are many remains, however, of buildings from the Byzantine period, such as monasteries, rock-cut churches and chapels on the Lake Bafa islands.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

BIBLIOG. O. Rayet and A. Thomas, Milet et le Golfe Latmique, II, Paris, 1880; F. Krischen and T. Wiegand, Milet, III, 1–2, Berlin, Leipzig, 1913–22; A. von Gerkan, Griechische Städteanlagen, Berlin, Leipzig, 1924, passim; P. Romanelli, EAA, s.v. Eraclea al Latmo.

Hierapolis (mod. Pamukkale). Founded perhaps by the Seleucids around the hot springs which constituted the characteristic feature of the site (described at length by ancient geographers) and which were probably the center of some ancient sanctuary, this city was closely linked to Laodicea, primarily because, like Laodicea, it was a wool producer. After a considerable period of prosperity under Roman rule and following the various Arab invasions in Byzantine times, the city, already seriously diminished, was destroyed in the 12th century, perhaps by the Seljuk Turks; by the time of the Third Crusade it had been completely abandoned. Very little remains of the Hellenistic city. In the second half of the 1st century A.D., Hierapolis was enlarged along its main axis; to the north new residential districts were built on either side of the main street, along an uninterrupted front, covering part of the former necropolises, and a monumental gate, known as the Frontinus Gate, was erected (A.D. 80) at the edge of the new city. Dating from the 4th–5th century of the Christian Era are the *enceinte* walls, built of rubble, which eliminated entire quarters to the north and south from the fortified inhabited area. The urban center is very difficult to distinguish, because it is covered with heavy lime deposits; to be found there are two large, well-preserved nymphaeums; one, restored, has a rectangular base surrounded on three sides by a niched wall, projecting columns, well-preserved tympanums and reliefs, and the other (2d cent. A.D.), near the north Byzantine gate (largely destroyed), has colonnades jutting from a smooth wall finishing at either end in two small projecting sections. There are also two groups of baths, one of them, imposing and well-preserved, with parallel rooms and a gymnasium (2d cent. A.D.) and the other (converted into a church, 5th cent.) with a caldarium of three large archways (3d cent. A.D.), and a theater from the 2d century (the late Hellenistic theater, north of the necropolis, was soon abandoned and dismantled), excellently preserved, set against the side of the hill and equipped with a *frons scaenae* composed of various orders of columns. In 1963 the remains of the Temple of Apollo were excavated in the neighborhood of the Plutonion, the famous sanctuary of the Gallic priests. The city numbered three necropolises and hundreds of tombs, perhaps the largest known group in all of classical antiquity, representing all the various types; most of them are very well preserved. The Christian monuments are of great importance; a large martyrium (early 5th cent.), built in honor of St. Philip, has an octagonal nucleus 67 ft. in diameter, with a wooden-frame dome sheathed in lead and eight radiating chapels separated by arches and columns from the central area, which was enclosed on the outside by four wings set at right angles, each with a central door and portico. A church set into the baths lying outside the city walls (early 5th cent.) is a massive structure covered perhaps by three axial domes; a basilica in the town center with brick vaults resting on arches and a dome, lacking gynaecea, and with thick masonry pillars, dates from Justinian's time. The excavations of the city are the work of Italian archaeologists, active since 1957, under the direction of P. Verzone.



Hierapolis, archaeological plan (the modern village indicated in hatched lines). Principal Hellenistic, Roman and Byzantine monuments: (*a*) walls; (*b*) Frontinus Gate, main street; (*c*) Byzantine gate and nymphaeum; (*d*) patrician tomb; (*e*) Domitian quarter and supposed civil basilica; (*f*) Early Christian basilica; (*g*) baths; (*h*) Antonine theater; (*i*) nymphaeum and Temple of Apollo; (*j*) lower urban basilica; (*k*) Byzantine gate; (*l*) bridge; (*m*) necropolises; (*n*) Early Christian basilica; (*o*) remains of late Hellenistic theater; (*p*) martyrium; (*q*) gate at the southeast end of the main street (*from C. Humann, C. Cichorius, W. Judeich, and Fr. Winter, updated*).

BIBLIOG. C. Texier, Description de l'Asie Mineure, I, Paris, 1838, pp. 137–44; C. Texier, Asie Mineure, Paris, 1862, pp. 439–44; W. M. Ramsay, Les trois villes phrygiennes Brouzos, Hiérapolis et Outros, BCH, VI, 1882, pp. 503–20; W. M. Ramsay, The Cities and Bishoprics of Phrygia, I, Oxford, 1895, pp. 84–121; C. Humann et al., Altertümer von Hierapolis (JdI, Ergänzungheft, IV), Berlin, 1898; F. Sartiaux, Villes mortes d'Asie Mineure, Paris, 1911; V. Schultze, Altchristliche Städte und Landschaften, II, Gütersloh, 1926, passim; P. Verzone, Le chiese di Hierapolis in Asia Minore, CahA, VIII, 1956, pp. 37–61; D. Levi, Missioni in Levante, ASAtene, XXXV–XXXVI, 1957–58, pp. 395–402; P. Verzone, Il Martyrium ottagono a Hierapolis di Frigia, Palladio, X, 1960, pp. 1–20; P. Verzone, Le campagne 1960 e 1961 a Hierapolis di Frigia, ASAtene, XXXIX–XL, 1961–62, pp. 633–47; P. Verzone, Hierapolis christiana, Corsi di cultura sull'arte ravennate e bizantina, XII, 1965, pp. 613–27; A. Giuliano, EAA, s.v.

Horoztepe. This is a small village in the vilayet of Tokat, explored in 1957. Several test probes in the inhabited area have yielded material datable from the Central-Anatolian Chalcolithic Age and from the Early Bronze Age. The pottery of the earliest period is related to that of the Samsun region and of the area included in the Kızıl Irmak crescent. The more recent pottery, however, bears close comparison to both Dundartepe and Alaca Hüyük. Distinct levels of habitation have been impossible to identify because of changes in the terrain. Extremely rich in its yield was the sounding effected in the modern cemetery, where Turkish archaeologists unearthed two Early Bronze Age tombs. One of them was intact and its grave furnishings consisted of numerous metal and pottery vessels and a series of cult objects ("standards," disks, castenets, systrums). There were also discovered a statuette of a woman nursing a baby, quite realistically rendered, with white paste eyes and black pupils; several figurines of bulls, their muzzles of yellow amber; pieces of wooden furniture with metal trimmings; two gold double-spiral earrings, a silver scepter, and numerous weapons. The similarities to the royal tombs of Alaca Hüyük are distinct; the Turkish excavator felt an authentic *Kulturkreis* could be delineated in the Tokat-Amasya district, more or less independent of Sumer, the Caucasus, and North Syria and slightly more recent (about 2100 B.C.) than Alaca Hüyük.

BIBLIOG. T. Özgüç and M. Akok, Horoztepe: An Early Bronze Age Settlement and Cemetery, Ankara, 1958.

Iasos (anc. Iasus). This Carian city, founded by the Argives on the shores of the Gulf of Bargylia, took part in the Ionian revolt and became a member of the Delian League. Destroyed in 405 B.C. by Lysander, it was rebuilt and absorbed into the kingdom of Mausolus. Declared a free city by Rome (168 B.C.), it was incorporated (129 B.C.) into the province of Asia and led a modest existence throughout the imperial and Byzantine periods. The location of the city before the 4th century B.C. is still uncertain; among the remains of the late-classical and Hellenistic city are large stretches of the isodomic walls with semicircular towers, a gate, and numerous posterns (4th cent. B.C.), notable remains of the 4th-century theater

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

(which was, however, heavily restored and enlarged in Roman times), and a series of ruins, identified by C. Texier as a palace, a stadium, and a stoa. North of the city are the arches of an aqueduct that terminate in a building which is known as the "fish market" but which was probably a funerary monument. All around the city are the necropolises containing tombs of various types, among them a Roman tomb of particular importance. An Italian archaeological expedition (headed by D. Levi), active since 1960, has uncovered necropolises of successive eras, from an early Cycladic one to the Roman period (rich late-4th-cent. goldwork was discovered in a Greek tomb), a city quarter near the Greek theater, a gate in the walls, and a boundary inscription of a temple of Zeus Megistos. The castle at the center of the inhabited district on the peninsula is medieval.

Bibliog. D. Levi, Le due prime campagne di scavo a Iasos, ASAtene, XXXIX–XL, 1961–62, pp. 505–71; N. Bonacasa, EAA, s.v. (bibliog.).

Isaura Vetus. This important Isaurian city was situated on top of a plateau with steep, broken cliffs. The Isaurians, against whom the Pergamenes had fought in vain, were vanquished only by Publius Servilius in 75 B.C. and Isaura was shortly after placed under the dominion of Aminta (35–25 B.C.), a client-king of Rome. After Aminta's death the city became definitively subject to Rome. The double walls, still in a state of excellent preservation, were probably built by King Aminta and include the remains of two gates and 13 towers; at one end of these fortifications is a later wall which marks the limits of the citadel. The ruins of the city include the remains of a basilica and three tributary arches: one, simple in structure and devoid of columns, dedicated to Hadrian, a second, similar one, dedicated to Marcus Aurelius, and a third to Alexander Severus. There are also numerous Christian monuments, all of them dating from the 5th and 6th centuries: an octagonal martyrium with apses, the main church with a single nave, and, located in the suburbs, though still within the city walls, four other small churches. Outside the city stand the Hellenistic-Roman necropolises, with interesting rock-cut façades.

Bibliog. W. J. Hamilton, Researches in Asia Minor, Pontus and Armenia, II, London, 1842, pp. 332–38; L. Duchesne, Les nécropoles chrétiennes de l'Isaurie, BCH, IV, 1880, pp. 195–205, VII, 1883, pp. 230–46; A. C. Headlam, Ecclesiastical Sites in Isauria, London, 1892; H. Swoboda, J. Keil and F. Knoll, Denkmäler aus Lykaonien, Pamphylien und Isaurien, Brünn, 1935, passim; P. Verzone, Città ellenistiche e romane dell'Asia Minore, Palladio, IX, 1959, pp. 1–18; G. Ambrosetti, EAA, s.v.

İvriz. This is a cliff carving south of Nigde, near a stream in the Taurus mountains. It represents King Urpalla of Tyana (known to have paid tribute to Tiglathpileser III of Assyria in 738 B.C.) in adoration before the god Tarhundas. The figure of the god is about 13½ ft. high. Whereas the robes and headdress of the divinity show characteristics to be found in the Hittite art of the imperial period, the King is distinguished by the Assyrian cast of his features. R. D. Barnett considers it an archaic Phrygian work. According to Frankfort, although the work possesses elements derived from the art of the neo-Hittite and Assyrian reigns, it does not pertain to either. Akurgal believes it to be a work executed by Aramaean elements which prevailed among the subject Luvian-Hittite people; this would explain the inscription in hieroglyphic Hittite.

Bibliog. R. E. Davis, On a New Hamathite Inscription at Ibreez, Tr. R. Soc. of Biblical Archaeol., IV, 1876, pp. 336–46; W. M. Ramsay, Bas-relief of Ivriz, AZ, XLIII, 1885, pp. 203–08; H. T. Bossert, Santaš und Kupapa, Leipzig, 1932, p. 26; L. Delaporte, Le bas-relief rupestre d'Ivriz, Rev. hittite et asianique, IV, 1936–38, pp. 49–57, 131–47, 201–02; B. Hrozný, Inscriptions "hittites"-hiéroglyphiques des rois de Tuvana-Tyana, Archiv Orientální, IX, 1937, pp. 217–18; R. D. Barnett, Early Greek and Oriental Ivories, JHS, LXVIII, 1948, pp. 1–25 at 8; H. Frankfort, The Art and Architecture of the Ancient Orient, Harmondsworth, 1954, p. 185; M. Vieyra, Hittite Art: 2300–750 B.C., London, 1955, p. 76; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, p. 121.

Karahüyük (near Elbistan). This mound was excavated in 1947 by the Turkish archaeologists T. and N. Özgüç. Three phases, consisting of six inhabited levels, have come to light. The latest phase dates from the Roman period (1st–3d cent. A.D.). Pottery includes the so-called "terra sigillata" ware and other types as well, which on the highlands have been identified as Hellenistic. The middle phase, described as post-Hittite by the excavators, consists of four levels of habitations with houses built of unbaked brick and isolated on stone foundations. Tombs were found inside the houses containing bodies in contracted positions, a practice followed among the earliest Anatolian populations. Another detail which distinguished Karahüyük from the Phrygian area was the use of pottery decorated with geometric patterns, which appears for the first time only in the second level of this phase. Moreover, 2d-millennium types continue to appear in the monochrome earthenware. The most important discovery was undoubtedly that of the Level II stele, inscribed on three sides in Hittite hieroglyphics, whose sacred character was apparent from the respect with which it was regarded in subsequent periods (during which the area around it was kept free of buildings). In front of the stele was a repository hewn out of a block of stone. The earliest period uncovered during excavations has been described as Hittite. Only one level of habitation was located; there were, moreover, no buildings of a monumental character. The material culture is similar to that of central Anatolia; note should be made of the presence of imports from northern Syria and of decorated pottery, of the kind known as "Cappadocian" as well as that typical of the Bronze Age. It is likely that the period in question is more complex than appears from the series of excavations carried out in a limited area of the hill.

Bibliog. T. and N. Özgüç, Ausgrabungen in Karahöyük: 1947, Ankara, 1949.

Karaman (anc. Laranda). Situated in the province of Konya, perhaps on the site of the Hittite city of Landa, the city took its name from the Turkoman Karamanoğlu beys, who, following the downfall of the Seljuks, ruled it until the 15th century, when it became a part of the Ottoman Empire. Those monuments, extremely damaged, remaining from the time of the beys include: the Akçasar Mosque, which had, parallel to the *qibla* wall, four aisles, the first narrower than the others, and a portico along the front; the Davgandos Mosque, which consisted of a single square room with a domed roof and, along the front, a portico of three bays covered by an equal number of small cupolas. The Hatuniye Medrese (1382), designed by the architect Lokman Bin Hoca Ahmet, consisted of a courtyard surrounded by colonnaded porticoes and of various halls covered by domes. The lower half of the stalactite doorway is of marble.

Bibliog. B. Ünsal, Turkish Islamic Architecture in Seljuq and Ottoman Times, 1071–1923, London, 1959.

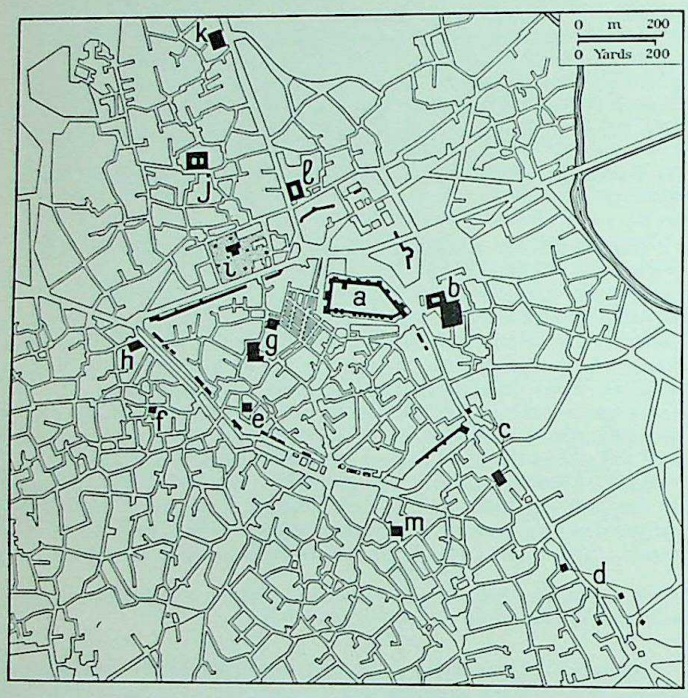
Karatepe (Asitawanda). Situated about 50 miles northeast of Adana, this was the headquarters of Asitawandas, who was at first vassal to the king of the Danunians and then lord of the Adana plain. The building of the citadel covered a rather short period of time and it was very soon to be abandoned as the result of an enemy attack in the second half of the 8th century B.C. The walls of the fortress, with a circumference of about 1,245×575 ft., were built of massive stone blocks, some 13 ft. thick, with battlemented towers jutting out at regular intervals. The two main gates were designed with a right-angle entryway and an inside room. The remains of the palace, at the top of the hill, include a spacious central courtyard with rooms around the sides. The exceptional interest of this site consists in the fact that set along the walls of the two city gates were several series of dados decorated with varied designs, and two inscriptions, one in Phoenician and the other in Hittite hieroglyphics. By comparing these two almost identical texts it has been possible to verify the accuracy of what is known about Hittite hieroglyphics and to penetrate further into their interpretation. The sculptural decoration, which includes orthostats and statues, is interesting not so much for its execution as for its widely varied iconographic content. The works of at least two different schools, operating contemporaneously, have been detected, related more to neo-Hittite art (especially Zincirli) than to supposed Assyrian and Phoenician influence. Another *enceinte* wall, more carved orthostats, and fragmentary statues have been unearthed in the nearby mound of Domuztepe.

Bibliog. H. T. Bossert and H. Çambel, Karatepe: A Preliminary Report on a New Hittite Site, Istanbul, 1946; H. T. Bossert and U. B. Alkim, Karatepe, Kadirli and Its Environments: Second Preliminary Report, Istanbul, 1947; H. T. Bossert et al., Die Ausgrabungen auf dem Karatepe, Ankara, 1950; P. Matthiae, Studi sui rilievi di Karatepe, Rome, 1963 (bibliog.); L. Vlad Borrelli, EAA, s.v.

Kayseri (anc. Caesarea). Kayseri, the ancient Caesarea, lies at the foot of Mt. Argus, which towers above the Cappadocian plain. Its importance derived from its position as a strong point on the roads between Anatolia and Cilicia-Syria. Procopius described it as "a great city since ancient times." After the defeat of Valerian (260 B.C.) at Urfa it was sacked by the Persians, but it soon recovered. In the 4th century it became an important Christian center, boasting the presence of both St. Basil and the Christian historian Bishop Eusebius. In the 6th century, during the Byzantine period, the city became a military base against the Arabs, who took it time and again but were unable to hold it. Only the Seljuk Turks succeeded in conquering it permanently (1082), except for perhaps a brief period of occupation by the Crusaders. Under the Konya sultans, Kayseri became a city of exceptional importance. Occupied by the Mongols (1241), it finally passed (end of 14th cent.) into the hands of the Ottomans

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

who, however, consolidated their dominion over it only in 1515. Several years ago, in the confused structure of the city, it was still possible to distinguish the ancient walls, laid out in a roughly hexagonal plan, dating in part from an earlier period (two sides) and in part from Seljuk times, with a turreted castle on one side and a large protruding bastion. The earlier sections, possibly classical, had smooth revetments on the outside, with two tiers of arches inside and gal-



Kayseri, plan of the central area. Principal monuments: (*a*) citadel; (*b*) Huant Cami and Medrese (Museum); (*c*) turbeh and Han Cami; (*d*) Döner Kümbet and Sırçalı Kümbet; (*e*) Hatuniye Medrese; (*f*) Boyalı Kapısı (gate); (*g*) Ulu Cami and *bedesten*; (*h*) Külük Cami; (*i*) Kurşunlu Cami; (*j*) Çifte Medrese; (*k*) Haci Kılıç Cami; (*l*) Sahibiye Medrese; (*m*) Lala Paşa Cami.

leries for the defenders. The other walls (and probably the citadel as well) were rebuilt in Seljuk times (ca. 1220), as indicated by an inscription. The citadel was protected by double *enceinte* walls; the inner wall, almost 10 ft. thick, was provided with high towers, the outer one was low, with only a few towers. All that remains of the Roman monuments of the city is the base of a tomb; and from Byzantine times there are only the scattered remains of a church.

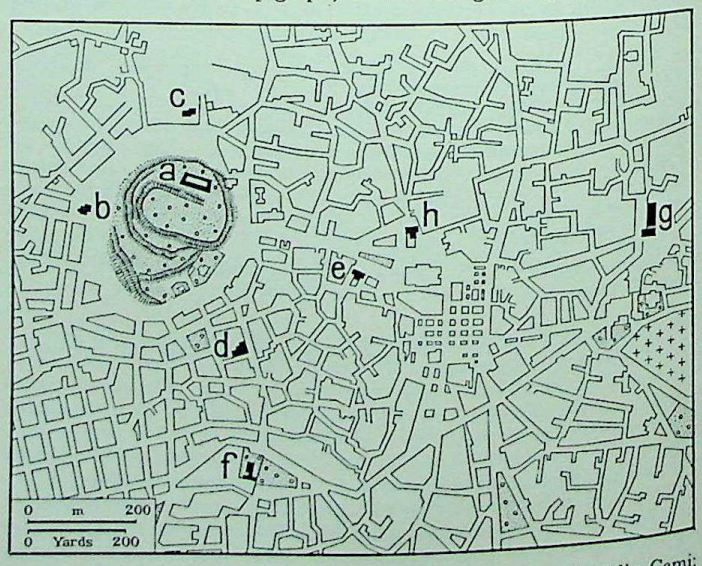
The Seljuk monuments are, however, both numerous and rich, since Kayseri in the 13th century was, after Konya, the second most important city of the Sultanate of Rum. The oldest mosque is probably the Ulu Cami (1140), dating from the time of the Danişmendids. It has four rows of pillars of various shapes; the dome in front of the mihrab is original, but the central dome is modern. It has a minaret in the form of a round tower, the upper part of which dates from Ottoman times. In the Külük Cami, built in 1210–11, the stalactite doorway anticipates the others of the Kayseri school, but it is relatively simple. On the inside, the mihrab is decorated with a magnificent square frame of stucco with greenish-blue and purplish-black ceramic tiles. The other important mosques all have similar façades of stone with stalactite doorways and rich frames minutely inlaid with geometric patterns; they represent, together with the madrasahs and turbehs, the largest, most homogeneous, and richest body of Seljuk art in Turkey. The Princess Hand Hatun foundation includes a mosque (1237–38) connected to a hospice, the madrasah, and the turbeh of the princess, built at a later date. The mosque is covered by a system of barrel vaults with an open space at the center and a dome in front of the mihrab; two rich doorways adorn the façade. The madrasah, also provided with a handsome doorway, has a single liwan, two lateral halls and a series of rooms served by a portico. The turbeh is octagonal, and it too is lavishly ornamented. The Sahibiye Medrese, dating from 1267, with a large doorway similar in type to the others, has two small towers set at either corner of the façade. The courtyard has a central liwan, flanked by two rooms, and two smaller liwans on two of the other sides. The Haci Kılıç Cami with attached madrasah (1275) has a single façade, with small round towers at either corner containing the twin doorways to the mosque and madrasah. The mosque has five aisles with a dome in front of the mihrab; the madrasah, as it stands today, retains little of the original structure. The Seljuk turbehs of Kayseri are both numerous and important. The richest and most interesting is the Döner Kümbet Türbe, a dodecagonal structure with delicate blind arcading decorated with geometrical patterns and arabesques, variegated with palms and lions in relief. The conical roof is also adorned with a pattern of arches, etched in delicate relief on the surface. The Sırçalı Kümbet (the Faïence Tower) is round in shape. The Sifaye Medrese (1206) is an ancient hospital with a medical school attached, interesting in plan though ruined. Kayseri also possesses an important Ottoman mosque, the Kurşunlu Cami (1585). Attributed by some to Sinān, it is square in plan, with a dome and a portico along the front.

Bibliog. W. J. Hamilton, Researches in Asia Minor, Pontus and Armenia, II, London, 1842, pp. 259–68; C. Texier, Description de l'Asie Mineure, II, Paris, 1849, pp. 47–74; G. de Jerphanion, Mélanges d'archéologie anatolienne, Beirut, 1928, pp. 103–06; A. Gabriel, Monuments turcs d'Anatolie, I, Paris, 1931, pp. 3–74; S. Stucchi, EAA, s.v. Cesarea presso il Monte Argeo.

Klaros. A site on the gulf of Ephesus, near the ancient city of Kolophon, this city was well known in antiquity for its oracle of Apollo. Its period of greatest prosperity, however, dates from Hellenistic-Roman times, when famous public figures (among them, Germanicus) came to consult the oracle. The sanctuary was entered through large propylaeums (2d cent. B.C.); these were followed by a double-aisled portico that has been only partially investigated. There was a marble altar of monumental proportions standing in front of the temple, a peripteral structure of 6 × 11 Doric columns (4th–3d cent. B.C.), with a series of underground corridors leading to the adytum where the oracles were pronounced. Parts of the great statue of the god have recently been discovered. Farther north, the remains of an Ionic temple (perhaps of Artemis) were discovered. The sanctuary was excavated by a French archaeological expedition (headed by L. Robert).

Bibliog. C. Picard, Ephèse et Claros, Paris, 1922; A. Wilhelm, Athen und Kolophon, Anatolian S. Presented to W. H. Buckler, Manchester, 1939, pp. 295–368; L. Robert, Les Fouilles de Claros, Paris, 1954; L. Robert, Rapport sur les fouilles de Claros, Türk tarih arkeologya ve etn. dergisi, VII, 1957, pp. 5–8, VIII, 1958, pp. 28–30, IX, 1959, pp. 35–36; E. Lissi, EAA, s.v. (bibliog.).

Konya (anc. Iconium). The city, already inhabited in the 3d millennium B.C., belonged to the Seleucids, then to the kings of Pergamum, and ultimately became subject to the Romans, who later made it a colonia (Augustus Iconiensium Claudiconium and Colonia Aelia Adriana). It was occupied by the Seljuks (ca. 1087) and at the end of the 11th century became the capital of the Sultanate of Rum; it remained so, except for a brief interruption, until the middle of the 13th century. This was the period in which the Islamic city enjoyed its greatest prosperity, and when it also took on religious importance, beginning in the first half of the 13th century, as the headquarters of the dervishes. Nothing remains *in situ* of the classical and Byzantine Iconium; the Seljuk monuments, however, are of the greatest importance. The great Alaeddin Cami was completed by Alaeddin Kaykubad in 1220 (inscription on the façade). According to another epigraph, it was designed by Mehmet ben



Konya, plan of the central area. Principal monuments: (*a*) Alaeddin Cami; (*b*) Ince Minare Cami; (*c*) Qaratay Medrese; (*d*) Sırçalı Medrese; (*e*) Archaeological Museum; (*f*) Sahip Ata Cami and Türbe; (*g*) Selimiye Cami and Mevlâna Tekke, Islamic Museum; (*h*) Seref al-Din Cami.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Havlan of Damascus. The monument, in fact, is Syrian in style and most of the columns were taken from earlier Christian monuments. The mihrab is of stucco and varicolored marbles; the mimbar dates from 1156. One of the domes is decorated with glazed tiles, and one of the two turbehs was also built by Alaeddin. The mosque stood near a palace (built 1220 by Alaeddin), one side of which is surmounted by a gallery in which columns taken from Christian monuments were used. The city gate, decorated with carvings of djinns, was also razed to the ground (drawings by de Laborde, 1838, and Texier, 1849, remain). Next to the ancient walls of the citadel is a small but interesting Seljuk structure, the Ince Minare Cami (Slender Minaret Mosque) built in 1262. All that remains of the minaret is the base, ornamented with colored tiles. In plan, the mosque (actually a mosque-madrasah) consists of a large, square central hall, domed and with a niche for the mihrab and two lateral rooms with small domes; the large central hall is flanked on either side by four small rooms. The building was used primarily as a school. The façade is decorated with stone bands in an interwoven pattern ornamented with arabesques and inscriptions; the name of the architect, Keluk ben Abdullah, is also to be read there. The outer covering of the dome, possibly of wood and lead, has been lost. The Sırçalı Medrese (School of Ceramics, 1243) consists of a courtyard with rooms for the students facing onto it; it has a richly ornamented doorway with lateral niches. Across from the entrance, inside the courtyard, is the liwan, covered by a pointed barrel vault; the intrados of this vault is decorated with rich ceramics in an interwoven-band motif. The name of the artist, Mehmet of Tus, also appears in the vault. The Büyük Karatay Medrese (built 1251 by Mir Celaleddin) has a doorway in the form of a pointed arch, which is surrounded by small interlaced arches in *opus sectile* marble, and framed by ornamental bands and a rich inscription above. Various rows of stalactites hang down over the top of the small entranceway and two small spiral columns stand on either side; in the tympanum three medallions in the form of perforated half-spheres project from the wall. Set symmetrically at either side are two fountains in which the motif of the large doorway is repeated. Inside the mosque, which faced onto the inner courtyard, the mihrab, ornamented with colored tiles, is worthy of note. The mausoleum of Sahip Ata, which is next to it, also has an interior decorated with tiles. The Tekke of Mevlâna, the ancient convent of the Whirling Dervishes (now an Islamic museum) is a remarkable architectural complex. The earliest building is the cylindrical mausoleum of the founder (1295), with a typical domed roof surmounted by a cone, gadrooned on the exterior with green tiles. The Sahip Ata Cami (1262–83) was designed, according to an inscription, by Keluk, the son of Abdullah. The central hall of the madrasah is covered by a dome set on a 24-sided polygon. The dome is decorated with colored ceramic tiles, which are spread over the double-curved surface in a star pattern.

Bibliog. L. de Laborde, Voyage en Asie Mineure, Paris, 1838; C. Texier, Description de l'Asie Mineure, II, Paris, 1849, pp. 140–50; F. Sarre, Reise in kleinasien, Berlin, 1896; F. Sarre, Konia: Seldschukische Baudenkmäler, Berlin, 1921; B. Pace, Ricerche nella regione di Conia, Adalia e Scalanova, ASAtene, VI–VII, 1923–24, pp. 343–452; F. Sarre, Der Kiosk von Konia, Berlin, 1936; K. A. C. Creswell, A Bibliography of the Architecture, Arts and Crafts of Islam, London, 1961, col. 471.

Korigos (anc. Corycus, Korykos). This city of Cilicia Trachea had already assumed a certain importance in Roman times. Cicero and Pliny, for example, both mention it, but in Byzantine times (also because it was protected by the peninsula and by the island which stood in front of the harbor) it grew considerably in size and enjoyed a further period of prosperity (1199–1221) as a city of Armenia Minor. The medieval city boasts of four churches; the fortress, set on a sort of peninsula, contains structures dating from the Crusades and a Roman gate. Two of the four churches are of great interest in terms of the history of art; they were laid out on an axis outside the walls and connected by a street with tetrapyle which continued on through the necropolis and along the valley all the way to the sea. The first church is square in plan with three apses and an inner structure of three columned aisles. The other is a basilica with nave, two side aisles, and a transept; each has a portico in front. A third church, dating from the Early Christian period, formed part of a small monastery; the fourth dates from the period of Armenia Minor. The necropolis abounds in pagan and Christian sarcophagi and small tombs. The island facing Korigos is occupied by an Armenian fortress (ca. late 11th cent.).

Bibliog. V. Langlois, Voyage en Cilicie: Corycus, son île et son antre, RA, XII, 1855–56, pp. 129–47; L. Duchesne, Les nécropoles chrétiennes de l'Isaurie, III: Korykos, BCH, VII, 1883, pp. 230–46; G. Alishanian, Sissouan ou l'Armeno-Cilicie, Venice, 1899, pp. 394–409; E. Herzfeld and S. Guyer, Meriamlik und Korikos (Mon. Asia Minoris Antiqua, II), Manchester, 1930; A. J. Gurevich, Iz ekonomicheskoi istorii odnogo vostochno-rimskogo goroda (From the Economic History of One Eastern Roman City), Vestnik drevnei istorii, 1955, 1, pp. 127–35.

Kültepe (anc. Kanesh). Excavations by Turkish archaeologists were begun in 1948. The existence of a city, Kanesh (or according to others, Neša), already inhabited in the Early Bronze Age II, has been determined. Monumental buildings, palaces and temples were found on numerous levels. The city was destroyed, together with the Assyrian commercial colony (*karum*), about 1900 B.C., but its monumental character, which seems to foreshadow the buildings of Hattushash, remained. A palace, which is perhaps to be attributed to Anittas, and a temple, both of them remarkable in structure, should be mentioned. A fortification with square towers dates from the Phrygian period, and continued in use down to Roman times. The *karum* was situated next to the city, which was apparently the seat of some local potentate. The activities of these Assyrian colonies are known in detail through the thousands of cuneiform tablets discovered in the private archives of the various merchants; the merchandise which passed through the city was subjected to a state tax. Four archaeological levels have been determined: Levels II and IB, which apparently suffered violent destruction, represent the period when the merchants were active. Fortifications around the commercial quarters have not been discovered, nor the various public buildings mentioned in the texts. The period of activity of the Assyrian traders — with whom local merchants were also associated — may be said to have covered the period from about 2000 to 1800 B.C.

Bibliog. B. Hrozný, Rapport préliminaire sur les fouilles tchécoslovaques du Kültepe, Syria, VIII, 1927, pp. 1–12; T. Özgüç, Ausgrabungen in Kültepe, 1948, Ankara, 1950; F. Schachermeyr, Alischar und Kültepe in ihren Beziehungen zu Troja und zum aegaeischen Bereich, Archiv für Orientforschung, XVI, 1952–53, pp. 83–94; T. and N. Özgüç, Ausgrabungen in Kültepe, 1949, Ankara, 1953; N. Özgüç, Vorbericht über Siegel und Siegelabdrücke, Belleten, XVII, 1953, pp. 123–27; K. Balkan, Observations on the Chronological Problems of the Kārum Kaniş, Ankara, 1955; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, passim; S. Lloyd, Early Anatolia, Harmondsworth, 1956, pp. 31–32, 47–49, 112–26; K. Balkan, Letter of King Anum-khirbi of Mama to King Warshama of Kanish, Ankara, 1957; A. Götze, Kleinasien, 2d ed., Munich, 1957, pp. 67–81; J. Mellaart, Anatolian Chronology, in the Early and Middle Bronze Age, Anatolian S., VII, 1957, pp. 55–58; N. Özgüç, Marble Idols and Statuettes from the Excavations at Kültepe, Belleten, XXI, 1957, pp. 71–80; T. Özgüç, Kültepe-Kaniş, Ankara, 1959; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, p. 26. See also the preliminary reports in Anatolian S., 1951 ff.

Kusura (former Akroenus). W. Lamb excavated (1935–37) this settlement (near Afyon), which existed from the Early to the Late Bronze Age. Material was found related both to the highlands and to the Aegean coast. During the Late Bronze Age, however, the area underwent considerable influence from the material culture of the Hittites: among other things, the city had double-chamber walls, as at Boğazköy and Alişar. The earliest levels date from Early Bronze Age I and II (the same culture spread over various phases). About 2300, this, like other Anatolian sites, was involved in the well-known devastations which swept the highlands and the western coasts at the end of the Early Bronze Age II and which some scholars identify with the passage of the Luwians. After a transitional period, the Late Bronze Age shows, as has been said, a distinct propensity, for a way of life characteristic of the inland and Hittite areas. Mention should be made of the necropolis with *pithos* and stone coffin-tombs.

Bibliog. W. Lamb, Excavations at Kusura . . . , AAnz, 1936, cols. 406–11; W. Lamb, Excavations at Kusura, Archaeologia, LXXXVI, 1937, pp. 1–64, LXXXVII, 1938, pp. 217–73.

Lagina (near mod. Yatağan). This was a Carian site a few miles from the ancient city of Stratonikeia, where (perhaps in the last decades of the 2d cent. B.C.) a famous temple of Hecate, the goddess of the underworld, was located. The temple, of which few ruins remain *in situ*, was pseudodipteral with 8×11 Corinthian columns, a cella without opisthodomos, and, along the front, two Ionic columns set between exceptionally deep antae. The frieze (removed to Istanbul, Archaeol. Mus.) contains representations of myths bearing reference to Stratonikea and the goddess Hecate (VII, PL. 187).

Bibliog. A. Chamonard, Les sculptures de la frise du temple d'Hécate à Lagina, BCH, XIX, 1895, pp. 235–62; A. Schober, Der Fries des Hekataions von Lagina, Vienna, 1933 (bibliog.); A. Giuliano, EAA, s.v.

Laodicea (Laodicea ad Lycum; mod. Denizli). This city was built by Antiochus II in honor of his wife, Laodice, between 261 and 253 B.C. on the site of ancient Dispolis. The city stood on a hill near the great trade route of the ancient Maeander, where the road branched off to Cibyra, Pisidia, and the coast. In the 2d century B.C. the city passed from the Seleucids to the kings of Pergamum and then to Rome. It was, together with nearby Hierapolis, known for its textile industry (the famous Ladik carpets were made there).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Brought early to Christianity, it was in 380 the scene of the Council of Laodicea and enjoyed considerable importance in the early Middle Ages. Though seriously damaged by the Arab invasions, it was still inhabited in the 12th century. Following its transformation into the Islamic city of Denizli, it was sacked and abandoned. The most important monument is the imposing and well-preserved stadium dating from the reign of Vespasian. It is attached on the northeast side to a large gymnasium. There are also scanty remains of two baths and two theaters, the ruins of a triple-arched gate (probably dating from Domitian's time), and the piers of a bridge, at present crossed by the road to Hierapolis. The aqueduct, with conduits reinforced in limestone, is interesting. The apse and a few pillars of a church remain; from their massive size, it was presumably vaulted. The most recent excavations have brought to light the remains of an unsual nymphaeum, reconstructed in late Roman times. Materials are preserved in the Denizli archaeological depository.

Bibliog. Society of Dilettanti, Antiquities of Ionia, II, London, 1797, pp. 31–33; G. Weber, Die Hochdruckwasserleitung von Laodicea ad Lycum, JdI, XIII, 1893, pp. 1–13; W. M. Ramsay, The Cities and Bishoprics of Phrygia, I, Oxford, 1895, pp. 32–83; W. Ruge, RE, s.v. Laodicea; W. Buckler and W. M. Calder, Monuments and Documents from Phrygia and Caria (Mon. Asiae Minoris Antiqua, VI), Manchester, 1939, passim; A. Giuliano, EAA, s.v. Laodicea.

Larisa on the Hermus. An Aeolian city on the road between Pergamum and Smyrna, Larisa became a Persian possession (6th cent. B.C.) and then a member of the Delian league (5th cent. B.C.). After the Peloponnesian wars, it reverted to Persian control; in 279 B.C., it suffered severe damage from the Celtic invasions and by the 1st century A.D. it had been abandoned. Swedish and German excavations have determined that Larisa was already inhabited at the end of the 3d millennium. From the middle of the 2d millennium up to the Greek conquest (end of 8th cent. B.C.) it was a local strong point with a fortified inhabited center and a temple. In the archaic period, a peripteral temple of 6×9 columns (perhaps with a double row in front) with "Aeolic" capitals, an altar, and a simple portico were built on the fortified acropolis (ca. 570 B.C.), to which were added, at the end of the century, two palaces, one consisting of a pair of large rooms, with two towers on the façade connected by a colonnade, and the other of a megaron which, in the middle of the 5th century, was changed through the addition of three rooms set crosswise around a small courtyard. In the middle of the 5th century B.C., the walls were rebuilt in polygonal work, while in the 4th century B.C., aside from a further restoration of the fortifications, interesting enlargements were introduced into the palace to the north, through the addition of a series of megarons with a peristyle on either side. An important group of terra-cotta slabs decorated with various figures and designs and dating from around 525 B.C. were determined to have belonged to the archaic palaces.

Bibliog. J. Böhlau et al., ed., Larissa am Hermos (Die Ergebnisse der Ausgrabungen), 3 vols., Berlin, Stockholm, 1940–42; R. Naumann, Zum Kabiren-Tempel in Larisa am Hermos, RM, LIX, 1944, pp. 183–84; J. Pouilloux, Les fouilles et les découvertes de Larisa, RA, XXVII, 1947, pp. 240–51; M. Senyürek et al., Trial Excavation at Höyücek near Larisa, Belleten, XIV, 1950, pp. 487–503 (in Turk.); A. Åkerström, Architektonische Terrakottaplatten in Stockholm, Lund, 1951; A. M. Mansel, EAA, s.v.

Maden Şehir and Değile (Bin Bir Kilise). This was a group of small religious communities in the area commonly known as the "valley of a thousand churches." The few remaining traces are scattered over the area occupied by the village of Maden Şehir and the hamlet of Değile on the slopes of Kara Dag, a mountain near Karaman overlooking the Konya plain. The group is not mentioned in any historical source; the only elements at the disposal of scholars, therefore, are the stylistic character of the buildings and a few inscriptions, which indicate a period somewhere between the 7th and the 10th century. The churches of Bin Bir Kilise were generally vaulted; some were provided with constructions that may be construed as defense works, probably against the periodic invasions of the Arabs. Of all the innumerable basilicas uncovered by Bell and Ramsay in 1907, the ruins of only a few buildings still remain. The most important and best-preserved building in Maden Şehir is Church N.1, with three barrel-vaulted aisles, a semicircular apse and a two-story narthex; the cracks in the structure, caused originally by inefficient buttressing, made necessary the addition of reinforcement arches in all the naves. The building is well constructed in freestone and several traces of frescoes are still visible. Practically all that remains of the other basilicas, similar to Church N.1 but smaller, are the apsidal structures. A simple and earlier (probably late Roman) mausoleum is also preserved at Maden Şehir. In the upper village of Değile, which was more sparsely inhabited, there is less destruction. The ruins of three monasteries still remain and include several more or less ruined churches. The small monastery of Mahaleç (probably St. Michael) stood at the top of Kara Dag. (See II, PLS. 432, 433, FIG. 778.)

Bibliog. L. de Laborde, Voyage en Asie Mineure, I, Paris, 1838, pls. LXVI–LXVII; W. J. Hamilton, Researches in Asia Minor, Pontus and Armenia, II, London, 1842, pp. 316–20; J. Strzygowski, Kleinasien, Leipzig, 1903, passim; C. Holzmann, Binbirkilise: Archäologische Skizzen aus Anatolien, Hamburg, 1905; W. M. Ramsay and G. L. Bell, The Thousand and One Churches, London, 1909.

Magnesia-on-the-Maeander (Magnesia ad Maeandrum). This Carian city first stood on the banks of a tributary of the Maeander. Founded, according to tradition, by a group of Thessalian colonists at the same time as the other Magnesia (ad Sipylum), it was subject to Lydia and Persia (530 B.C.). Passing under Spartan control (end of 5th cent. B.C.), the city was moved because of frequent floods. Freed by Alexander, it passed into the hands of the Seljuks, then to the Ptolemies, and finally (190 B.C.) became subject to Pergamum. The monumental plan of the city, carried out by the architect Hermogenes of Alabanda, dates from Hellenistic times. A free city under Rome, it became an Anatolian metropolis whose importance continued through the Byzantine period. Nonetheless, devastated by the Arab invasions and beset by serious economic difficulties between the 9th and 13th centuries, the city gradually diminished in population until it became completely deserted, as it is today. Vast ruins of the Hellenistic city remain, scattered along the valley and over the slopes of Mt. Thorax, which rises above it. The town center was laid out around the great sanctuary of Artemis Leukophryene, of archaic origin (a few remains pertaining to a phase of the 6th cent. B.C. are known), but in the definitive form that has come down to us, it dates from the Hellenistic period. The temple, built entirely of marble, was pseudodipteral with 8×15 Ionic columns set on a high crepidoma, with a triple-nave cella, a deep pronaos with two rows of columns, an opisthodomos *in antis*, and a tympanum free of sculptural decoration (there are, instead, three openings). However, the frieze, which ran around the entire outside of the temple, was carved with scenes of Amazons fighting (VII, PL. 175), executed by artists of classical schooling. An altar, similar to the one in Pergamum, stood in front of the main side of the temple (the west flank); a flight of stairs led to the center of a high podium decorated with a frieze and having antae enclosing an Ionic colonnade surmounted by a small frieze in low relief. The temple and the altar are commonly attributed to Hermogenes and his school, generally accepted to have been between the late 3d and the early 2d century B.C. The sanctuary was enclosed on three sides by a Doric colonnade; on the west side, it communicated with the neighboring agora by means of a rich Ionic propylaeum. The agora had double stoai on three steps, with an inner row of Ionic and an outer row of Doric columns. All the stoai, except for the one along the east side, had shops; in the middle of the west portico two of the shops were replaced by a room, preceded by two Doric columns, identified as a shrine of Athena. At the center of the agora was the small Ionic temple, prostyle tetrastyle with an opisthodomos of two columns set *in antis*, dedicated to Zeus Sosipolis (remains of the statue of the god) and also attributed to Hermogenes. Lying outside the agora, but attached to its south side, was the Hellenistic prytaneum; nearby, to the west, are the remains of a Roman odeum. Though the theater south of the agora is a Hellenistic construction (end of 3d cent. B.C.), it was largely refashioned in late Roman times (the stage and *versurae*). The remains of the stadium, set against the slope of a hill, are particularly interesting; Hellenistic in plan, it was almost completely rebuilt during the Roman period (1st cent. A.D.) with tiers of marble seats and a covered passageway of blind arches above, similar to the one in the stadium of Aphrodisia. The gymnasium on the hill, the aqueduct on arches and the so-called "barracks," which were more likely a public bath, are entirely Roman (2d cent.). There are scanty remains from the Byzantine period, the most conspicuous among them being the defense walls, parts of which are still visible.

Bibliog. O. Kern, Die Inschriften von Magnesia am Meander, Berlin, 1900; E. Herkenroth, Der Fries des Artemision von Magnesia, Berlin, 1902; G. Humann, J. Kohte and C. Watzinger, Magnesia am Meander, Berlin, 1904; A. von Gerkan, Der Altar des Artemis-Tempels in Magnesia am Meander, Berlin, 1929; T. Wiegand, Das Pergamonmuseum, Berliner Museen, LI, 1930, pp. 94–100 at 97; C. Bürchner, RE, s.v.; L. Vlad Borrelli, EAA, s.v. (bibliog.).

Malatya (anc. Milid). The hill of Arslantepe, about 5 miles north of Malatya, has been excavated at length but at irregular intervals. Between 1932 and 1938 Delaporte uncovered the entrance to a neo-Hittite palace adorned with reliefs and statues of lions. In 1947–48, and again in 1951, Schaeffer explored the area of the older palace and the remains of the gate where the above decorations were probably originally located. The earliest cultures have been revealed by deeper soundings; they contain pottery similar to the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

pottery of el-'Ubaid, Susa I and II phases, as well as to that of the early Anatolian Bronze Age II and III. Since 1961, the excavations have been carried out by Italian archaeologists. The transitional phases between the end of the Hittite empire and the establishment of the neo-Hittite kingdoms are of particular interest. The Gate of the Lions and the city walls are, in fact, laid out on various levels and pass through different phases of reconstruction. The various decorative elements in the last reconstruction were juxtaposed, but it is, even so, possible to detect a chronological sequence. On the basis of their style and iconography, E. Akurgal has dated the lions to 1050–900 B.C., the carvings with the stag hunt to 900–850 B.C., those with the lion hunt to 850–800 B.C., while the large statue of the king, clearly Assyrian in cast, is dated to between 713 and 700 B.C. These last dates coincide with the Assyrian occupation.

BIBLIOG. J. Garstang, The Winged Deity and Other Sculptures of Malatya, Liverpool Annals of Archaeol. and Anthr., VI, 1914, pp. 116–18; H. H. von der Osten, Explorations in Hittite Asia Minor, 1927–28, Chicago, 1929, passim; L. Delaporte, Malatya, Rev. hittite et asianique, II, 1932–33, pp. 129–54, 257–85; H. T. Bossert, Zur Geschichte Malatyas, Archiv für Orientforschung, IX, 1933–34, pp. 330–32; V. Christian, Untersuchungen zur nordsyrisch-"hethitischen" Kunst, Archiv für Orientforschung, IX, 1933–34, pp. 1–34 at 20; L. Delaporte, Fouilles de Malatya, 1932, AAnz, 1933, cols. 183–87; J. Przyluski, Les monuments mégalithiques de Malatya, RA, N.S., VI, 1935, pp. 3–7; L. Delaporte, La troisième campagne de fouilles à Malatya, Rev. hittite et asianique, V, 1938–39, pp. 43–56; L. Delaporte, Tête de statue colossale provenant d'Arslantépé (Malatya), Rev. hittite et asianique, V, 1938–39, pp. 85–86; L. Delaporte, Malatya, Arslantepe, I: La porte des lions, Paris, 1940; R. Dussaud, Datation de bas-reliefs hittites de Malatya, CRAI, 1945, pp. 432–42; E. Akurgal, Remarques stilistiques sur les reliefs de Malatya, Istanbul, 1946; H. T. Bossert, Zur Chronologie der Skulpturen von Malatya, Felsefe Arkivi, II, 1947, pp. 85 ff.; C. F. A. Schaeffer, Fouilles à Enkomi (Chypre) et à Arslan-Tépé (Turquie), CRAI, 1948, pp. 338–45, 1951, pp. 325–26; E. Akurgal, Späthethitische Bildkunst, Ankara, 1949, passim; C. F. A. Schaeffer, Arslan Tepe, Archiv für Orientforschung, XVI, 1952–53, pp. 151–52; H. Frankfort, The Art and Architecture of the Ancient Orient, Harmondsworth, 1954, passim; M. Vieyra, Hittite Art, 2300–750 B.C., London, 1955, passim; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, passim; P. Matthiae, Das hethitische Malatya: Ausgrabungen einer italienischen Mission 1961–62, Raggi, IV, 2, 1962, pp. 15–26; P. Meriggi, Alcuni monticoli di Kataonia, Oriens Antiquus, I, 1962, pp. 265–81; S. M. Puglisi, Campagna di scavi a Malatya, Oriens Antiquus, I, 1962, pp. 130–33; S. M. Puglisi, Malatya, I, Oriens Antiquus, III, 1964, pp. 99–128; P. Matthiae, EAA, s.v.

Mersin (Yümüktepe). This Cilician site was excavated by J. Garstang, who uncovered 33 archaeological levels containing material that covers a period from the Neolithic to the Islamic age. The site is particularly interesting because it permits the establishment of a connection with the cultures of Mesopotamia and North Syria. The gradual shift in neolithic times from pottery with imprinted decoration to pottery with painted decoration is notable. In the Chalcolithic Age the successive influence of the cultures of Hassuna, Tell Halef (to an overwhelming degree), and, lastly, el-'Ubaid are, in fact, visible. A fortress was found on Level XV with elaborate defense systems, the residence of the chief and lodgings for the garrison. The period between the end of the Chalcolithic Age and the beginning of the 2d millennium is poorly represented, but corresponding excavations at Tarsus have made it possible to complete the data. Level VII presents a fortification with towers and double curtain walls of the Hittite type, datable from around 1500. Even so, Mersin did not become an integral part of the Hittite empire until the kingdom of Kizzuwatna lost its political independence. The architectural remains and, to a greater extent, the pottery afford evidence that the site was occupied during the 13th–12th century (perhaps by the Mycenaeans) and uninterruptedly from the 7th to the 4th century B.C.

BIBLIOG. J. Garstang, Prehistoric Mersin, Oxford, 1953; S. Lloyd, Early Anatolia, Harmondsworth, 1956, passim; J. Mellaart, Anatolia, c. 4000–2300 B.C., Cambridge, 1962, passim; C. A. Pinelli, EAA, s.v.

Miletus (mod. Balat). A city situated at the end of a peninsula at the mouth of the ancient Maeander, between the sea and the Gulf of Latmos, in an area formerly inhabited in the 2d millennium B.C. (Kalabaktepe Mound). In the 11th century, after a long struggle with the Carians it was settled by Greeks of Ionian stock. In the 7th and 6th centuries it was the most active and prosperous of the 12 cities of the Ionic League and it founded numerous colonies along the Hellespont, the Propontis, and the Black Sea. During the Persian invasion of 546, under Cyrus the Great, it succeeded, with the consent of the conqueror, in gaining control over the important sanctuary of Didyma, some 13 miles away. After the failure of the Ionian revolt in 496 B.C., the city was destroyed and later rebuilt only after it had been liberated from the Persian domination (479 B.C.) and made a member of the Delian League. Once again subject to the Persians (402 B.C.), it recovered its independence after the conquest by Alexander the Great (334 B.C.). Incorporated into the Seleucid states (301 B.C.), after 190 B.C. it passed to the kings of Pergamum and then to Rome. In the Hellenistic and Roman periods it enjoyed prosperity, though as a result of the silting up of the Maeander and the competition of Ephesus, its commerce gradually decreased. Though having fallen into considerable decay, it became a Christian metropolis and then shared the fate of the other Byzantine coastal cities. It was devastated by the Arab invasions, and again by the Seljuks (end of the 11th cent.). Temporarily reconquered by the Byzantines, it was lost to the Turks in 1328. In 1352, the Venetians obtained permission from the Turks to set up a commercial base in Miletus, and they also built a church there. After the temporary conquest by Tamerlane, it was reoccupied by Murat II. Meanwhile, the city and its harbor continued to deteriorate until, reduced to a poor village, it was given the name of Balat (from the Greek *Palatia*). The history of the city is more or less summed up in the history of its walls; traces of the first circuit of walls have been discovered near the theater (ca. 650 B.C.). Between 411 and 402, Miletus was rebuilt on a checkerboard plan, and at that period was encircled by new walls with four gates. At the beginning of the 2d century B.C., the south crosswall, extending in a sawtooth line and with posterns set between projecting towers, was built; the gates were flanked by towers and the one in the south wall, facing the mainland, where the principal road entered the city ("Sacred Gate"), was preceded by an outgate, it, too, flanked by two towers set crosswise. The south wall and the "Sacred Gate" were rebuilt in the 1st century B.C., while other restoration and reconstruction was undertaken following the invasion of the Goths (A.D. 263). In Byzantine times, perhaps during the reign of Justinian, a retrenching wall was built against the theater and the Baths of Faustina, which became two strongholds. The castle, which was built behind the theater, is relatively recent (after 1493). The city was centered around three agoras, the north, the south and the west. Those at the north and south, facing the main street, were separated by a small temple dedicated to the cult of Augustus and Rome and the bouleuterion. The north agora (295×34 ft.), the oldest of the three, consisted of a two-storied Doric quadriporticus with shops around it and a small Ionic tetrastyle prostyle temple (2d century B.C.) on the west side; the plan is Hellenistic, with various modifications dating from Roman imperial times. The bouleuterion, built between 175 and 164 B.C., consisted of a rectangular hall containing the hemicycle for the assembled leaders and of a forecourt with porticoes on three sides; the fourth side, the façade of the assembly hall, was left open. Entrance to the building was through a Corinthian tetrastyle propylaeum, open toward the inner courtyard, in the center of which was a rich altar and a tall structure of two columns between antae. The Doric columns of the colonnade were shorter. Doric semi-colonnades and clypei decorated the outer walls of the bouleuterion. In front of the north agora was the "Delphinion," an important sanctuary of Apollo built in the 4th century on the area formerly occupied by a group of archaic religious buildings. In the Hellenistic period, it consisted of a precinct, rectangular in plan, with three gates on the west side and double porticoes (stoai with two rows of Doric columns) along the other three. The *sub divo* central area contained an altar, three exedras, statues and *cippi*. In Hadrian's time, the porticoes, reduced to a single nave with composite columns, were set around all four sides and had a Corinthian propylon. The entrances to the two agoras, the nymphaeum, a Hellenistic gymnasium (2d cent. B.C.), the so-called "Capitus" stoa, two stories high (reign of Claudius) and, later, the church, all faced onto the small square of the bouleuterion, the true center of the city. The nymphaeum consisted of a square pool and a back wall ornamented with niches and three stories of marble colonnades, while two rows of columns and open epistyles projected on either side. The pediments of the architraves of the two upper orders were triangular or with volutes; the lower order, instead, had flat blocks. The monument was built in honor of Trajan's father, proconsul of Asia in A.D. 78–80. The south agora (528×553 ft.) was begun in the 3d century B.C.; its construction covered a long period of time. There was a simple colonnade, about 23 ft. wide, along the east side with two rows of rooms opening onto the colonnade itself and onto the adjacent street, while double-aisled stoai occupied the other three sides; the south stoa was the only one serving a row of rooms. The gate of the south agora facing onto the small square of the bouleuterion, originally restrained in design with two columns, was rebuilt in the Antonine Age as a monumental triple-arched entranceway with a broad central pediment and small side pediments set on two orders of protruding colonnades. Lastly, at the back of the south agora stood a vast Hellenistic double-aisled storeroom (535×43 ft.) and the Serapeion (3d cent. A.D.) with a rich composite propylon and a triple-aisled columned hall. Another group of monuments, east of the agora, included the stadium, the west agora and the Temple of Athena; on the other side of the bridge was the theater. The stadium, a rectangular arena (96×638 ft.) flanked by two rows of seats, was built in the first half of the 2d century B.C.; in the 3d cen-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

tury A.D. a new monumental entrance was built on the east side with two stories of open colonnades. Near the stadium was the third agora, connected to a hexastyle peripteral Ionic temple of Athena (5th cent. B.C.), only the foundations of which are still visible. The west agora (544×259 ft.), still not completely investigated, was built in the late Hellenistic age with Doric stoai on three sides, apparently devoid of shops and an entrance propylaeum. A small temple, converted into a private house in the late Roman period, was set into the south side. The large theater, built up against a small hill and facing one of the four city ports, dates in its present form from the 2d century A.D. Large stairways led up from the entrances on either side of the *scaena* to the *praecinctio*. Of the *scaena*, only the lower part and the pillars of the hyposcenium remain. The bathing establishments in Miletus are both numerous and important. The oldest is the Hellenistic gymnasium, near the nymphaeum; the building, which was entered through a testrastyle propylaeum, consisted of a *palaestra* with five rooms along the back: along the front, the columns were taller and Ionic in order, whereas along the two sides they were shorter and Doric. The connecting Baths of Vergilius Capitus (2d cent. A.D.) consisted of a *palaestra* with a pool rounded at the end, an apodyterium, a frigidarium, and a large tepidarium. The Baths of Faustina (XII, FIG. 296), donated by the wife of Marcus Aurelius and rebuilt by a private citizen in the latter part of the 3d century, are important, both for their size and for their state of preservation; they included a large, nearly square peristyle, a long gallery with niche (apodyterium), a frigidarium, tepidariums, and a caldarium of imposing dimensions. The small baths, opposite the north agora, dating from the end of the 1st century A.D., consisted of a peristyle with an exedra at the back, through which the dressing rooms were entered, the tepidariums, and a central caldarium. In the late period (4th cent.), important restorations were undertaken: the original marble paving stones, among other things, were replaced by mosaics.

What was presumably the cathedral (late 5th to early 6th cent.), one side of which communicated with the nymphaeum, was not very large. Preceded by an atrium flanked by the baptistery, it consisted of a central hall or nave and two side aisles with marble piers and an ambulatory around the apse; the south end consisted of a small rotunda with five semicircular niches set into the thickness of the walls.

The Islamic city includes the Ilyas Bey Cami with its hammam; the remains of two other baths; two mosques; and two *lahans*. The Ilyas Bey Cami itself (1403) is the most important of these monuments; it is a square building covered by a dome resting on stalactites, and opens, by means of a large triple-arched doorway supported by two columns with rich perforated transennae, onto the adjacent atrium.

BIBLIOG. O. Rayet and A. Thomas, Milet et le Golfe Latmique, 2 vols., Paris, 1877–80; B. Haussoullier, Etudes sur l'histoire de Milet et du Didymeion, Paris, 1902; T. Wiegand et al., Milet, 13 vols., Berlin, 1906–35 (see also the preliminary reports by R. Kekule and T. Wiegand in SbBerlin and AAnz); A. Grund, Ephesus und Milet, Prague, 1911; F. Sartiaux, Villes mortes d'Asie Mineure, Paris, 1911; R. E. Wycherley, The Agora of Miletus, J. R. Inst. of Br. Architects, 3d Ser., XLV, 1938, pp. 1005–11; H. von Gästringer and M. Mayer, RE, s.v. Miletus; F. Krischen, Antike Rathäuser, Berlin, 1941, pp. 7–12; K. Bittel, Kleinasiatische Studien (Istanbuler Mitt., V), Istanbul, 1942, passim; C. Weickert, Antike Architektur, Berlin, 1949, pp. 5–15; A. von Gerkan, Zum Heiligtum des Apollon Delphinios im Milet, Kleinasien und Byzanz (Istanbuler Forsch., XVII), Berlin, 1950, pp. 35–39; F. Castagnoli, Ippodamo di Mileto e l'urbanistica a pianta ortogonale, Rome, 1956, passim; R. Martin, L'urbanisme dans la Grèce antique, Paris, 1956, pp. 97–106; C. Weickert, Die Ausgrabung beim Athena-Tempel in Milet, Istanbuler Mitt., VII, 1957, pp. 102–32; L. Sakellariou, La migration grecque en Ionie, Athens, 1958, passim; C. Weickert, Neue Ausgrabungen in Milet, Neue deutsche Ausgrabungen im Mittelmeergebiet und im vorderem Orient, Berlin, 1959, pp. 181–96; M. J. Mellink, Archaeology in Asia Minor, AJA, LXV, 1961, pp. 37–52 at 47; G. Colonna, EAA, s.v.

Mopsuestia (mod. Misis). A Cilician city on the banks of the ancient Pyramus, Mopsuestia was founded, according to legend, by the Greek hero, Mopsos, in the 11th century B.C. The city's history is, generally speaking, identical with that of the other Cilician centers: in Hellenistic times it was given the name of Seleucia, and under Roman rule it enjoyed a period of considerable prosperity. An episcopal see in the 6th century, it was sacked at various times by the Arabs in the 7th and 8th centuries. Disputed by the Armenians, Byzantines and Arabs, in 1375 it passed into the hands of the Mamelukes and in 1575 became a part of the Ottoman Empire. Today it is a modest center known as Misis. Little investigated, the classical remains of Mopsuestia visible to the eye include an *enceinte* wall with numerous medieval restorations, a theater, an amphitheater, a stadium and several ruins identified as a temple of the sun; all these monuments date from Roman times. The remains of an extramural church, dedicated to the martyrs (5th cent.), with interesting and rare mosaics (Noah's Ark), date from the Byzantine period.

BIBLIOG. E. Gjerstad, Cilician Studies, RA, III, 1934, pp. 155–203 at 197; M. V. Seton Williams, Cilician Survey, Anatolian S., IV, 1954, pp. 121–74 at 164; L. Guerrini and C. Bertelli, EAA, s.v. Mopsuhestia (bibliog.); W. Ruge, RE, s.v. Mopsuhestia.

Mylasa (mod. Milas). This Carian city, already inhabited in the 2d millennium, was the seat of a Persian-controlled tyranny in the 6th century B.C., and in the 4th century B.C. was the capital of the semi-independent satrapy of Caria, before the dynasts moved to Halicarnassus. After the Macedonian conquest it was disputed by Antigonus, the Lagids, and the Seleucids; liberated in 190 B.C. by the Romans, it passed under the control of the Rhodians and afterwards (129 B.C.) of Rome itself. Notably prosperous in imperial times, it became an episcopal see (A.D. 687). Occupied by the Seljuks in the 13th century, it became the capital of an independent emirate up until 1426, when it was occupied by the Ottomans. In the upper city (Hisarbaşi) there is an Ionic temple on a podium dedicated to Rome and Augustus; in the lower city there are the remains of walls with a Roman barrel-vaulted gate with Corinthian pilasters and of the Hellenistic Corinthian temple dedicated to Zeus Labrandeus. Near the city are the remains of a Roman aqueduct and of an interesting sepulchral monument, with a dado surmounted by a Corinthian peristasis (the corner pilasters are also Corinthian) covered by a dome (1st cent. A.D.).

BIBLIOG. H. L. Lorimer, Δίπαλτος, BSA, XXXVII, 1936–37, pp. 172–80; A. T. Akarca, Mylasa'da Hellenistik bir mezar, Belleten, XVI, 1952, pp. 367–405; A. T. Akarca, Milas, Istanbul, 1955; G. E. Bean and J. M. Cook, The Halicarnassus Peninsula, BSA, L, 1955, pp. 85–171 at 168; G. E. Bean and J. M. Cook, The Carian Coast: III, BSA, LII, 1957, pp. 58–146 at 141; A. T. Akarca, Les monnaies grecques de Mylasa, Paris, 1959; W. Ruge, RE, s.v.; N. Bonacasa, EAA, s.v.

Myra (mod. Demre). This Lycian city was of very ancient origins, but was particularly important in the Hellenistic period, when it was an influential member of the Lycian League, and in Roman times, when, under Theodosius II, it became the metropolis of Lycia. Of the greatest importance to the establishment and propagation of Christianity was the cult of the martyr St. Nicholas, whose remains were later removed to Bari, Italy. Ravaged during the Middle Ages, the city was reduced to a small village (Demre). The remains of the classical urban monuments include the ruins of a temple attributed to Hadrian and the Roman theater with 47 rows of seats (the *scaena* has almost completely fallen into ruins). The Basilica of St. Nicholas, a domed structure with a large apse and a few traces of frescoes, was largely rebuilt by Russian monks. The well-preserved rock-cut necropolises, including tombs with architectural façades and richly decorated with reliefs, are datable to the 5th century B.C.–3d century A.D.; there are also a number of monumental Roman sepulchers nearby.

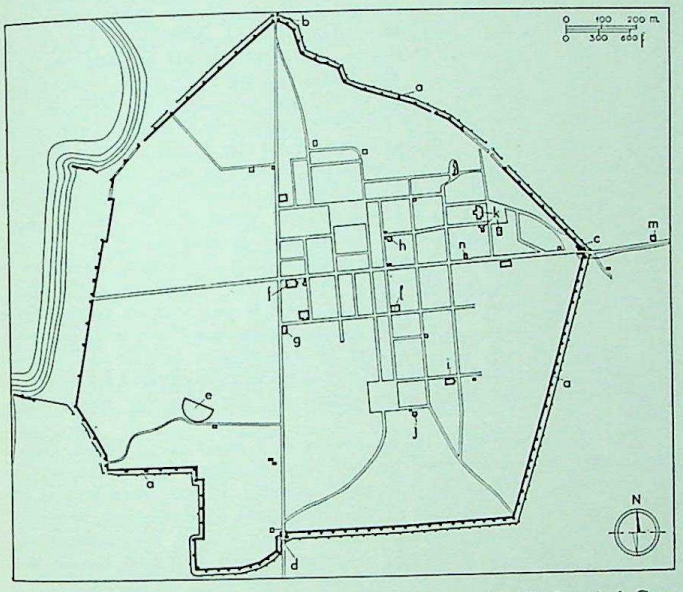
BIBLIOG. C. Fellows, Discoveries in Lycia, London, 1841, pp. 196–203; C. Texier, Description de l'Asie Mineure, III, Paris, 1849, pp. 205–09; G. Niemann and E. Petersen, Reisen in südwestlichen Kleinasien, II, Vienna, 1889; J. Ficker and H. Rott, Kleinasiatische Denkmälern aus Pisidien, Pamphylien, etc., Leipzig, 1908, pp. 324–41; W. Ruge, RE, s.v.; C. A. Pinelli, EAA, s.v.

Nicaea (mod. İznik). Situated in a strategically important position at one end of the lake of the same name, Nicaea, founded by Lysimachus in honor of his wife (301 B.C.) on a formerly inhabited site, enjoyed its greatest importance beginning with the Roman period (from 74 B.C.), when it rivaled the Bithynian capital of Nicomedia. Devastated by an earthquake in A.D. 123, it was soon rebuilt, but it suffered even more severe damage in 258 from the invasion of the Goths. For a long time the city maintained considerable standing; it was the scene of ecclesiastical councils (325 and 787) and remained Byzantine until 1081, when it fell into the hands of the Seljuks. Afterwards, it was conquered time and again, alternately by the Turks, the Crusaders (1097), and the Greeks. Peace returned under the Lascarids (1204–61), when it gained extraordinary prestige as the capital of the empire. In 1331 it was conquered by the Ottoman sultan, Orhan, and enjoyed its last moments of prosperity. With the Ottoman conquest of Constantinople, Nicaea lost all importance and was reduced to a village, which occupied only one part of the ancient inhabited area. The walls, which followed the original Hellenistic layout, date from the period between the reign of Domitian (78–79) and that of Claudius the Goth (268–69), with various medieval alterations. Except for the above-mentioned sections of the walls, all that remains of the Roman monuments of Nicaea is the poorly preserved Hellenistic theater, set on a vaulted substructure, and a monumental portico.

A large, relatively well-preserved church (St. Sophia, 8th cent.) dates from Byzantine times; the ruins of the Koimesis Church (6th and 10th cent.) are scanty and are limited to the foundations.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

The Islamic monuments, all of them Ottoman of the earliest period, are especially important. Outstanding among them is the Yeşil Cami (Green Mosque), a square building with a large cupola preceded by a portico, with the doorway, the capitals and the marble windows, as well as the inside of the mihrab, decorated with refined carvings. The glory of the monument, however, is the magnificent enamel-tiled minaret. Other 14th-century mosques include the Kutbeddin and Candarli Ibrahim Paşa mosques dating from the time of Mehmet Çelebi; also important are the imarets — T-shaped buildings with a portico in front (Nilufer Hatun Imaret, 1389, and Yakub Çelebi Zaviye) — and lastly the open-plan Medrese of Süleyman Paşa (1336?), with domed rooms, and the mausoleums of Reyhan, Çandarli Hayrüddin Paşa (1379) and Halil Paşa (1455). Between the end of 1400 and 1700 İznik was famous for its ceramic workshops, which produced articles of outstanding quality, both for the excellence of the materials and the fineness of their decoration and forms, as well as for the richness of their colors.



Nicaea (İznik), plan. Principal monuments: (*a*) walls; (*b*) Istanbul Gate; (*c*) Gate of Lefke; (*d*) Yenişehir Gate; (*e*) theater; (*f*) St. Sophia; (*g*) Mahmut Çelebi Cami; (*h*) Esref Cami; (*i*) Koimesis; (*j*) Yakub Çelebi Imaret; (*k*) Yeşil Cami, Kutbeddin Cami, Nilufer Hatun Imaret; (*l*) Süleyman Paşa Medrese; (*m*) Hayrüddin Paşa Türbesi; (*n*) Halil Paşa Türbesi.

Bibliog. D. Sestini, Lettere odeporiche, ossia Viaggio per la penisola di Cizico per Brussa e Nicea, 2 vols., Livorno, 1785; C. Texier, Description de l'Asie Mineure, I, Paris, 1839, pp. 29–58; O. Wulff, Die Architektur und die Mosaiken der Kirche zu Mariae Himmelfahrt in Nikaia, Vizantiisky Vremennik, VII, 1900, pp. 315–425; O. Wulff, Die Koimesiskirche in Nicaea und ihre Mosaiken, Strasbourg, 1903; C. Gurlitt, Die islamitischen Bauten von Isnik (Nicaea), Orientalisches Archiv, III, 1912–13, pp. 49–60; T. Schmitt, Die Koimesis-Kirche von Nikaia, Berlin, 1927; H. Grégoire, Encore le monastère d'Hyacinthe à Nicée, Byzantion, V, 1929–30, pp. 287–9?. A. M. Schneider and W. Karnapp, Die Stadtmauer von Iznik, Berlin, 19?3; K. O. Dorn, Die islamische Iznik, Berlin, 1941; A. M. Schneider, Die römischen und byzantinischen Denkmäler von Iznik-Nicea, Berlin, 1943; A. Lane, Later Islamic Pottery, London, 1957, pp. 37–61; K. A. C. Creswell, A Bibliography of the Architecture, Arts and Crafts of Islam, London, 1961, cols. 470–71; N. Bonacasa, EAA, s.v.; W. Ruge, RE, s.v. Nikaia.

Niğde. This is the city, almost 4,000 ft. above sea level on the Anatolian plateau, which some authorities identify with the ancient Kadena. Conquered by the Seljuks at the end of the 11th century, it formed part of the Sultanate of Rum. Passing, after the Mongolian dominion, into the hands of the Karamanoğlu beys, it became at the end of the 15th century a part of the Ottoman Empire. The citadel, dating from Seljuk times, was restored under the Ottomans. Among the more outstanding monuments are the Ak Medrese (1409), built by the Karaman beys, with a courtyard surrounded by pilasters joined by pointed arches; the polygonal Türbe of Hadabend Khātūn (1312), especially interesting for its decoration, which includes the usual geometrical and floral designs and unusual figures of birds and animals with human heads; and the Alaeddin Cami (1203), with a prayer hall consisting of three parallel aisles, the last bays of which are covered over with domes.

Bibliog. A. Gabriel, Les monuments turcs d'Anatolie, I, Paris, 1931; A. S. Ulgen, Niğde'de Ak Medrese, Vakiflar dergisi, II, Ankara, 1942.

Nimrud Dagh. A mountain in the vilayet of Malatya with an enormous tumulus, some 525 ft. in diameter on top (6,888 ft. above sea level), this point is visible from a great distance. At the base of the tumulus are three terraces, two (on the east and west sides) very large and similar in structure, and a third, on the north side, smaller. The architectural complex, defined in numerous inscriptions as the hierothesion of King Antiochus I of Commagene, was a temple-tomb built about the middle of the 1st century B.C.; access was by means of two sacred ways with gigantic flights of stairs. On the two large terraces (the west terrace is steeply declining) were steles with human figures, a gallery of the forebears of Antiochus (Persian paternal ancestors on the east side, Seleucid maternal ancestors on the west side) and colossal statues of Antiochus among Greco-Persian divinities (Zeus Oromasdes, Apollo Mitra, Artagne Herakles, the personification of Commagene). The altar of the cult stood on the east terrace among sculptures of eagles and lions.

Bibliog. K. Humann and O. Puchstein, Reisen in Kleinasien und Nordsyrien, Berlin, 1890; M. I. Rostovtsev, The Social and Economic History of the Hellenistic World, Oxford, 1941, passim; T. Goell, Nimrud Dagh: The Tomb of Antiochus I, King of Commagene, Archaeology, V, 1952, pp. 136–44; F. K. Dörner, Die Entdeckung von Arsameia am Nymphenfluss und die Ausgrabungen im Hierothesion des Mithradates Kallinikos von Kommagene, Neue deutsche Ausgrabungen in Mittelmeergebiet und in vorderen Orient, Berlin, 1959, pp. 71–88; F. K. Dörner and T. Goell, Arsameia am Nymphaios, Berlin, 1963; F. K. Dörner, EAA, s.v. Nemrud Dagh.

Nyssa (mod. Sultanhisar). A Carian city on a plateau overlooking the Maeander, this was founded, according to legend, by Laconian colonists, or, according to another version, by Antiochus I of Syria. Already important under the Seleucids and the Attalids, it became even more so under Roman rule, especially in the 1st century B.C., when many of its monuments were built. Sorely tried by the course of events in the late Middle Ages and by the simultaneous growth of the nearby city of Aydın (anc. Tralles), it was gradually deserted and only a part of the population remained, forming the modern city of Sultanhisar at the foot of the ancient city. On the plateau impressive remains from the classical period are still visible. Among them, the amphitheater with its shorter sides curved into a semicircle and the arena overlooking the River Thymbros, is particularly outstanding for its originality. Farther north are the remains of the late Hellenistic theater. The eastern part of the plateau was occupied by a large rectangular square, of which only a very small part has been excavated, containing a simple Doric portico along the south and west sides and double-aisled stoai with Ionic marble columns along the north and east sides; the entire architectural complex seems to date from the late Hellenistic period. Directly west of the agora are the well-preserved ruins of the *gerontikon*, a building used for the meetings of the council of elders, with a semicircular auditorium supported by annular vaults and divided into four sections by stairways; at the back stand the remains of a small portico. The remaining part of the plateau was occupied by other public buildings such as the gymnasium and the library. All that remains of the gymnasium (or baths) are several vaulted rooms made of brick; a little farther north was the Roman library (imperial period), a small building consisting of a series of vaulted rooms opening onto a central hall; it was entered from the south, and various tiers of niches, where the rolls of parchment were kept, were set into the walls to the right and left of the entrance. West of the plateau, there are the remains of a vast Roman necropolis with two-storied mausoleums, one of the stories partly underground.

Bibliog. M. Clerc, Inscription de Nysa, BCH, IX, 1885, pp. 124–31; W. Judeich, Inschriften aus Karien: Nysa, AM, XV, 1890, pp. 281–82; G. Radet, Inscriptions de la région de Méandre, BCH, XIV, 1890, pp. 224–39; F. Hiller von Gärtringen, Inschriften von Nysa, AM, XVIII, 1893, pp. 333–34; W. Diest, Nysa ad Maeandrum, Berlin, 1913; B. Schweitzer, Archäologische Funde in den Jahren 1916–22: Nysa, AAnz, 1922, cols. 340–43; B. Pace, Relazione preliminare dei lavori archeologici del Centro di studi italiani in Turchia (1954), RendLinc, 8th Ser., X, 1955, pp. 3–24 at 14; W. Ruge, RE, s.v. Nysa ad Maeandrum; N. Bonacasa, EAA, s.v. Nisa (bibliog.)

Patara (near mod. Kınık). A city on the Lycian coast at the mouth of the ancient river Xanthus (mod. Koca Çayı), Patara is recorded as existing only from the end of the 4th century B.C.; it was the main harbor of the region, and in the 1st century B.C., the capital of the Lycian League. It was particularly prosperous in the Roman period; in this respect, it might be remembered that Patara was one of the cities mentioned in the Acts of the Apostles. It suffered a sharp decline in the late Byzantine period and was completely abandoned. The sanctuary of Apollo, in which a sculptural group by Bryaxis stood, must have been an important monument of the city, but it has been impossible to identify. The monumental triple-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

arch gate, however, is well preserved; it dates from the late Hellenistic period. A rather large Roman theater, including the *frons scaenae*, was still well preserved until a few years ago. There are remains of Roman baths, a Roman temple, large horrea, and a cistern partly sunk into the rock of the acropolis. In the surrounding countryside, there are various ruins of Lycian-type tombs from a vast necropolis, and several large Roman mausoleums.

BIBLIOG. G. Rusini, Patara, ASAtene, XXX–XXXII, 1952–54, pp. 350–53; G. Radke, RE, s.v. (bibliog.); N. Bonacasa, EAA, s.v.

Pazarlı. A site in a mountainous region of the vilayet of Yozgat. Excavated in 1937–38, four different periods of occupation have been identified. The earliest traces of habitation date back to Early Bronze Ages I and II, revealing cultures similar to those on the central highlands. In Hittite times, the locality was sparsely settled. The really important ruins date from the Phrygian period; at that time a fortified stronghold was built, as well as private houses, probably two stories high, set on terracings. The outer walls of the houses were decorated with slabs of glazed terra cotta, with figures of centaurs, warriors on the march, and animals fighting. Most of the pottery is of the second Phrygian style, with decorations covering the entire surface of the vessel. Recent explorations such as that which uncovered the Ionic temple of Hemitheia (2d half of the 4th cent. B.C.) with 6×12 marble columns and a cella with a niaskos have established that Pazarlı is to be identified with the classical and Hellenistic city of Kastabos. The temple is encircled by a temenos with shrines ornamented with imitation incrustations and containing statues. Inside the temenos, around the temple, are several rooms which were perhaps treasuries.

BIBLIOG. H. Z. Koşay, Les fouilles de Pazarli, Istanbul, 1938; K. Bittel, Bericht über die Ausgrabungen von Pazarli, AAnz, 1939, cols. 133–44; E. Akurgal, Bemerkungen zu den architektonischen Terrakottareliefs aus Pazarli in Phrygien, Belleten, VII, 1943, pp. 1–43; K. Schefold, Die Tonfriese von Pazarli, Kleinasien und Byzanz (Istabuler Forsch., XVII), Berlin, 1950, pp. 137–48; E. Akurgal, Phrygische Kunst, Ankara, 1955, pp. 69–80; J. M. Cook, Pazarlik, Anatolian S., XI, 1961, pp. 23–24; A. Bisi, In margine a una terracotta di Pazarli, RSO, XXXVIII, 1963, pp. 219–30; A. Bisi, EAA, s.v.

Perga (Perge). A city of ancient origins on the trade route between Pisidia and Pamphylia, Perga belonged first to the kingdom of Lydia, and then to Persia. Vanquished by Alexander the Great (333), it was fortified with massive *enceinte* walls in Hellenistic times by the Seleucids. Conquered by the Romans after the battle of Magnesia (190), it enjoyed great prosperity in Roman times and remained prosperous under the Byzantines. The city extended partly over the plain and partly on the hill to the north (the acropolis and the original city). The Hellenistic walls in *opus quadratum* are almost completely intact; inside are the remains of a monumental gate consisting of two round towers, leading into a sort of inner courtyard adorned in Roman times by two stories of colonnades. This led, in turn, to a large tributary arch, dating from the reign of Hadrian, and then on into a vast colonnaded street (1st cent. A.D.) with two rows of porticoes on gradins and a row of fountains down the middle. To one side of this monumental gate was a small marketplace, laid out around a peristyle with a central tholos; on the other side are baths (2d–3d cent.). There is also a well-preserved theater dating from the reign of Trajan (the *scaena* has fallen in ruin); part of the nearby stadium, built on vaulted substructures, is also in relatively good condition. At the far end of the colonnaded street is a palaestra; an inscription names a certain Julius Cornutus as the donor. The celebrated temple of Artemis Pergaia has not yet been located. The necropolises are important, and have yielded fine sarcophagi, dating generally from the 2d–3d century A.D.

The Christian period is represented by the ruins of two large basilicas; one was perhaps the cathedral, the other stands near the monumental gate. There was another small church along the colonnaded street, and the remains of a fourth church are visible on the hill southeast of the city.

BIBLIOG. C. Texier, Description de l'Asie Mineure, III, Paris, 1849, pp. 211–16; K. Lanckoronski, G. Niemann and E. Petersen, Städte Pamphyliens und Pisidiens, I, Vienna, 1890, pp. 33–63; R. Paribeni and P. Romanelli, Studi e ricerche archeologiche nell'Anatolia meridionale, MALinc, XXIII, 1914, cols. 5–274 at 48; B. Pace, Diana Pergaea, Ausonia, X, 1921, pp. 169–86; B. Pace, Inventario del tempio di Artemide Pergaea, ASAtene, VI–VII, 1923–24, pp. 402–12; A. M. Mansel, A. Akarca, Excavations and Researches at Perge, Ankara, 1949; A. M. Mansel, Bericht über Ausgrabungen und Untersuchungen in Pamphylien in den Jahren 1946–55, AAnz, 1956, cols. 34–119; A. M. Mansel, Les derniers résultats archéologiques et épigraphiques des fouilles de Pergé et de Sidé (Pamphylie), Acta Cong. Madvigiani, I, Copenhagen, 1958, pp. 369–73; A. M. Mansel, Türkische Entdeckungen und Ausgrabungen im Jahre 1959, FA, XIV, 78, 1959, pp. 8–9; W. Ruge, RE, s.v.

Pergamum (Gr. Pergamon; mod. Bergama). The city was centered around a fortress, built by Lysimachus on a rocky height which was to be the acropolis. After the death of Lysimachus (281 B.C.), it was taken over by the strategos, Philetairos, who repelled the attacks of Antiochus I. After Philetairos' death in 263 B.C. the principality passed into the hands of Eumenes I, and then to Attalus I (241–197) who, with the help of Rome, enlarged its territorial dominions. After the Roman victory at Magnesia in 190 B.C., Eumenes II succeeded in extending the kingdom until it spread from the Hellespont to Cilicia. This same king, Eumenes II (197–159), encouraged the construction of important monuments in the capital and the setting up of state industries and private enterprises. Pergamum became, therefore, a city of major importance, rivalling Antioch and Alexandria (the Pergamene library was one of the most important in the ancient world). The son of Eumenes II, Attalus III (133 B.C.), bequeathed his kingdom to Rome. Pergamum thus became the first base of Roman influence in the East, and the city grew beyond the walls that enclosed the acropolis and the palace of the Attalids; its vitality was to diminish only with the waning of Byzantine power in the 8th century. In 716 it was besieged by the Arabs and the Byzantines repaired the city and the fortifications as best they could, utilizing much ancient material; even so, further assaults and pillaging reduced the ancient metropolis to a small village. After the Crusaders conquered Constantinople in 1204, the city was fought for by the second Latin emperor, Henri de Hainaut and the king of Micaea, Theodore I Lascaris (1206–22). It ultimately fell to the Turks in 1306; Ibn-Battūtā, who visited it in 1336, described it as a city in ruins overlooked by a fortress. It passed to the Ottomans (Orhan I) in 1336 and, except for the brief interval of Tamerlane, remained in their possession. The monuments of Pergamum were excavated by German archaeologists, who have been active on the site for more than eighty years.

The Hellenistic city, which overlooked the Caicus (mod. Sakir Çayi) valley and was served by two streams, grew up on the hill of the acropolis, crowned by the royal palace. It was surrounded by a wall and the foundations of the main gate (constructed, it would seem, at the time of Eumenes II); facing south, an entranceway with two towers, a porticoed courtyard, and a guard house still remain. Near the gate stood the lower agora, built by the same king. The square was quadrilateral, measuring 200×110 ft. surrounded by Doric porticoes with shops on three sides. The shops on the fourth (south) side, however, were about 13 ft. lower than the others, and faced outwards onto a separate portico. A paved street following an irregular and winding course up to the gate ran along two sides of the agora and then continued on to the upper city; a large public fountain faced onto this street. Over the lower agora a cistern, shops and houses, one of them identified as that inhabited by the Roman consul Attalus, have been excavated. Higher up there were three long terraces set above each other at equal distances against the hill; these were occupied by the various buildings of a large gymnasium. In Roman times part of the buildings were converted into public baths. The terraces were occupied by gymnasiums, the lower one for children (boys), the middle one for adolescent boys, and the upper one for young men. Each terrace had a large rectangular courtyard surrounded by Doric porticoes. In Roman times, the upper portico was rebuilt into two tiers of Corinthian columns and small baths were added on the right and left sides. An odeum and two large halls with apses used for the imperial cult were laid out along the north side of the courtyard, that is up against the mountain. Still another terrace, higher up, was occupied by a sanctuary of Demeter, the *prytaneion* (administrative headquarters of the city), and the Ionic temple of Hera Basileia (ca. 140 B.C.), set between a semicircular exedra and a square room. The sanctuary of Demeter was entered from the west side of the upper gymnasium; it consisted of a long courtyard with a portico along the south side (overlooking the gymnasium below); almost half the north side was taken up by nine rows of seats for the spectators of the mysteries; the rest of the north side was occupied by a portico with several rooms off it, in front of which stood the small Ionic temple *in antis* of the goddess with relative altar. These buildings have been attributed to the 3d century B.C. — to the reigns, that is, of Philetairos and Eumenes I; the propylaeum, instead, dates from the reign of Attalus I (2d cent. B.C.). Towering over these two architectural groups (the agora and the gymnasiums) to the north was the acropolis, whose buildings, set on the edge of a cliff overlooking the Selinos valley, were encircled by the isodomic walls of Eumenes II, and radiated out from the auditorium of the theater. This theater (VII, PL. 148), well preserved, has a steeply sloping auditorium hewn out of the side of the hill; the royal loggia was made of marble. There are practically no traces of the *scaena* dating from Roman times (it was temporary until the 2d cent. B.C.). Behind the stage was a long terrace supported by massive substructures, at the north end of which stood the hexastyle Ionic temple of Dionysos Kathegemon, of Hellenistic origin, which,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

following the restorations undertaken by Trajan, was rededicated to Caracalla at the beginning of the 3d century A.D. Laid out, then, from south to north, was the upper agora with porticoes around three sides, the south one, three stories high, opening both onto the agora and towards the outside and broken up by the passage of the street. This street led to a propylon which on the east side gave access to the temenos of the great altar of Zeus and Athena, part of which was built on an embankment. The great altar, whose date is uncertain (ca. 181–159 B.C.), consisted of a dado with two projections with a stairway between them, surmounted by a thick-set Ionic colonnade enclosing a wall. Both the dado and the upper part of the back wall were decorated with friezes containing, respectively, a gigantomachy and a running account of the myth of the Pergamene hero, Telephus. The two friezes, carved by various artists at different times, are among the masterpieces of Pergamene art, in which are also to be included the long row of small sculptures set up by some Attalid king (perhaps Attalus II) along a continuous base against the surrounding wall of the temenos (perhaps in substitution of a colonnade that was in the process of being built) and portraying battles between gods and giants, Greeks and Amazons, Greeks and Persians, Pergamenes and Galatians. Small copies of these sculptures existed in ancient Athens. To the north, in the junction between the terrace occupied by the great altar and that occupied by the sanctuary of Athena, there was an elongated double-aisled building with central colonnade as well as a series of porticoes facing the road, which then led up to the temenos of Athena Polias (built by Eumenes II), surrounded on three sides by a two-storied stoa, the lower story Doric, the upper Ionic, with great carved balustrades (arms and trophies). The Doric temple (peripteral hexastyle), from the 4th century B.C., dedicated to Athena Polias and converted into a church by Justinian, is not to be considered a part of the Hellenistic city, in that it existed before the acropolis was laid out. Various temple treasures existed on the terrace of Athena Polias, among them a rotunda built by Attalus I, where the "Dying Gaul" and the "Gaul killing himself and his wife" are commonly supposed to have been located. Opening off of the north portico of the temenos was the great library. The highest terrace, supported by a series of vaulted substructures from Hadrian's reign, contained the Traianeum, a Corinthian peripteral hexastyle temple of the Roman type, as well as stoai around three of its sides. Behind all these constructions and set up against the walls of the acropolis were numerous buildings: military storerooms lay to the north and in the middle stood the barracks and royal palaces, one of the most striking of them being the palace of Eumenes II with its great Doric peristyle; to the south, outside the walls of the citadel, however, and standing along the side of the road, was a group of rooms centered about a peristyle which some scholars consider a heroon, or dynastic sanctuary.

The Roman city, spread out over the plain, contained important monuments such as the circus, the theater, and the amphitheater. A well-preserved and important structure is the Kızıl Avlı, or Red Basilica, a rectangular hall with large lateral niches and on either side two peristyles leading into two round domed rooms. This group of buildings (2d cent. A.D.) was enclosed by a large wall which spanned the River Selinos on two large arches (623 ft. long). The main building, rightly considered a Serapeion, was converted during the late Empire into a basilica, with attached rotundas, dedicated to St. Paul. Lastly, on a small hill southwest of the city, was the celebrated Aesculapium, situated at the end of a porticoed sacred way, about half a mile long. The road terminated in a courtyard with Corinthian colonnades around three sides, which led, by means of a propylaeum dating from the reign of Hadrian, into a great sacred peristyle bordered by porticoes on the northwest (Ionic colonnade) and south sides (cryptoporticus and substructures). On the east side, together with the above-mentioned propylaeum, was the temple proper, a round structure with alternating semicircular and rectangular niches, and a tetrastyle *projectum* as well as a round two-storied hall (the so-called "Temple of Telesphorus"), with deep semicircular niches, while at the extreme north end was a library built in Hadrian's time. On the north side was a small theater, almost perfectly preserved, and the also well-preserved Ionic stoa to the south opened onto a gymnasium. At the center of the peristyle stood the fountain, and a cryptoporticus used for physical training led to the great circular hall on the east side. Most of the buildings of the Aesculapium are Roman, dating from the 2d century A.D.

BIBLIOG. R. Bohn et al., Altertümer von Pergamon, 10 vols., Berlin, 1885–1937 (see also the preliminary reports by A. Conze et al. in JhbPreuss KSamml, AAnz and AM, 1880–1928, passim); R. Wunsch, Antikes Zaubergerät aus Pergamon, Berlin, 1905; M. Collignon, Pergame, Paris, 1908; A. Conze and P. Schazmann, Mamurt-Kalen: Ein Tempel, der Göttermutter unweit Pergamon, Berlin, 1911; T. Wiegand, Die Ausgrabungen von Pergamon, in G. Rodenwaldt, Neue deutsche Ausgrabungen, Münster, 1930, pp. 49–64; C. Schuchhardt and T. Wiegand, ed., Der Entdecker von Pergamon: Carl Humann, 2d ed., Berlin, 1931; W. Massow, Führer durch das Pergamon-Museum, Berlin, 1932; T. Wiegand, II. Bericht über die Ausgrabungen in Pergamon 1928–32: Das Asklepieion (AbhPreussAk, Phil.-Hist. Klasse, 5), Berlin, 1932; O. Bayatli, Eski Bergamada Asklepieion (The Asklepieion of Ancient Pergamon), Istanbul, 1935; L. Crema, Pergamo, Palladio, II, 1938, pp. 68–70; O. Deubner, Das Asklepieion von Pergamon, Berlin, 1938; O. Deubner, Das ägyptische Heiligtum in Pergamon, VI, Int. Kong. für Archäol. (1939), Berlin, 1940, pp. 477–78; H. Hanson, Berichterstattung über die neuesten Ausgrabungen in Pergamon, VI. Int. Kong. für Archäol. (1939), Berlin, 1940, pp. 473–77; E. V. Hansen, The Attalids of Pergamon, Ithaca, N.Y., 1947 (bibliog.); H. Kähler, Der grosse Fries von Pergamon, Berlin, 1948; A. M. Mansel, Türkiyenin arkeoloji . . . bibliografya, Ankara, 1948, pp. 326–43; O. Bayatli, Bergama tarihinde, 3 vols., Istanbul, 1949–51; G. Bruns, Der grosse Altar von Pergamon, Berlin, 1949; A. Schober, Die Kunst von Pergamon, Wiesbaden, 1951; F. Eichler, Karische Aphrodite und ephesische Artemis, ÖJh, XLII, 1955, Beiblatt, cols. 1–22 at 19; E. Boehringer, Pergamon, Neue deutsche Ausgrabungen in Mittelmeergebiet und in vorderer Orient, Berlin, 1959, pp. 121–71 (bibliog.); E. M. Schmidt, Der grosse Altar zu Pergamon, Leipzig, 1961; E. Schulte, ed., Chronik der Ausgrabung von Pergamon: 1871–86, Dortmund, 1963; E. Rohde, Pergamon: Burgberg und Altar, 3d ed., Berlin, 1964; W. Zschietzschmann, RE, s.v. Pergamon.

Polatlı Hüyük. Situated west of Ankara and excavated in 1949, this site has yielded sequences of stratified materials covering most of the 3d and the 2d millennium. The settlement came into being in the Early Bronze Age (15 levels and two radical reconstructions) and continued on into the Middle and Late Bronze Ages (16 levels of occupation). According to A. Götze, Polatlı was, along with Demirci Hüyük, one of the representatives of the Sakarya group. The devastation which took place during the Early Bronze Age enabled excavators to distinguish two distinct phases that are also to be found in other sites on the plateau (Dundartepe, Etiyokuşu, Karaz, Karaoğlan), and to note the absence of any material from the postdisaster period in two such important Anatolian sites as Alaca Hüyük and Ahlatlibel. The Early Bronze Age pottery is the same as that found elsewhere in the same culture, but here earthenware with a glossy red surface gradually prevails over that with a glossy black surface; the decoration, consisting of broad riblike incisions, is of the most common type. Contacts with the Hellespont area are affirmed, not only by the jugs with obliquely cut spouts, but also by the characteristic depas which appears between Levels I and II, before the devastation, thus establishing a correlation between this historical event and the one which marked the downfall of Troy II. Pottery, usually decorated with white lines on a dark background, is not infrequent and sheds light on the possible relations which may have existed between the Beycesultan Chalcolithic and Mersin Level XII, as well as nearer sites such as Karaoğlan and Alişar. Polatlı II is distinguished, towards the end of the period, by the appearance of "Cappadocian" pottery and the curious so-called "red cross bowl"; this latter is generally characteristic of the end of the Early Bronze Age III all over the Anatolian peninsula. "Cappadocian" ware, together with pottery forms associated with the Assyrian *karum* of Kültepe, is present in Phase III, but at the end of this phase, monochrome types, characteristic of the early part of the 2d millennium, are already in evidence. The final levels, dating from the Late Bronze Age (Phase IV) cover the Hittite period up to the devastation which affected the entire Near East (about 1200 B.C.). The sepulchers are of the standard type; the presence of a cist tomb on Level VI is, however, to be noted. On the level immediately above, a circular structure, with an entrance dromos and a great deal of pottery material piled up nearby, was discovered over the grave itself. The similarity with the Etiyokuşu structure is great, though the latter has no grave beneath, and it is likely that both buildings were connected with funeral cults.

BIBLIOG. S. Lloyd and N. Gökçe, Excavations at Polatli: A New Excavation of 2d and 3d Millennium Stratigraphy in Anatolia, Anatolian S., I, 1951, pp. 21–75; S. Lloyd, Early Anatolia, Harmondsworth, 1956, passim; W. Orthmann, Die Keramik der frühen Bronzezeit aus Inneranatolien, Berlin, 1963, passim.

Priene. The city in existence today was founded about 350 B.C. by the inhabitants of an older city who had been forced to migrate as a result of the constant silting up of the Maeander. The older city, whose location is uncertain, was founded by the Ionians and sacked by the Cimmerians (645 B.C.); subject to the kings of Lydia and Persia (545–544 B.C.), it took part in the Ionian revolt and fought at Lade (495 B.C.). Briefly a member of the Delian League, it returned to Persian overlordship; it was during this period that the city was relocated. In 334 the new city was visited by Alexander, who dedicated the temple of Athena Polias. A Seleucid possession, it passed for a short period under Ptolemaic rule (246–196 B.C.). After becoming a Roman possession in 129 B.C. it led an undistinguished existence in imperial times and very few monuments were built or altered, so that Priene is almost completely Hellenistic in aspect. In the 13th century it was little more than a village amidst the ruins

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and was easily conquered by the Seljuks and then abandoned. The city was laid out on the slopes of Mt. Mycale on a series of four terraces of almost equal height, with a sharp rise of more than 1200 ft. between the inhabited center and the top of the acropolis, or Telonieion. The inhabited center was enclosed by a wall, reinforced by bastions, and, at the bottom, by 16 towers. The acropolis stood apart, enclosed by a wall with 10 towers and devoid of monuments. There were four gates into the city, corresponding to the large main streets which ran in an east-west direction; two of these gates were in the western sector. Six large streets running east and west were connected by sharply sloping alleyways crossing them at right angles and by steps forming blocks 160×120 ft. around. The four levels of the city were laid out as follows: the agora in the middle with its various accessories; above it, the temple of Athena and below it, the gymnasium and connected stadium, while the fourth and highest terrace, detached from the others, was occupied by the sanctuary of Demeter. The city was served by an aqueduct with interesting hydraulic works (clay pipes, a water tower and decantating basins). There are only a few religious buildings in Priene, but they are all of great interest. The sanctuary of Athena Polias included the famous peripteral temple made of limestone, with 6×11 Ionic columns, opisthodomos and a deep distyle pronaos *in antis*, designed by the architect Pytheos (who, with Satyros, also designed the mausoleum) and dedicated in 334 B.C. by Alexander. Standing in front of the temple is an altar dating from the 2d century B.C.; it is similar to the great Pergamum altar, consisting of a flight of stairs enclosed on three sides by a dado decorated with friezes of gigantomachy and surmounted by an Ionic colonnade. The temenos, which contained a thesauros as well as various statues, is entered through a propylaeum dating from Roman times, while the south side is occupied by a Doric stoa dating from the 2d century B.C. The much smaller sanctuary of Zeus Olympius was set into the east side of the agora. The temple, where Zeus and perhaps also Asklepios were worshiped, was an Ionic tetrastyle, dating from the 2d century B.C.; it stood at the end of a square bordered on the north and south sides by Doric stoai (with shops behind them). The sanctuary of Demeter and Kore (end of 4th cent. B.C.) consisted of an *enceinte* wall open on the east side and containing, aside from a subterranean chamber for offerings, a square building (the temple proper) oriented in a north-south direction, but with a small Doric entrance portico on the east side. In the eastern part of the city was the sanctuary of Egyptian divinities (middle of 3d century B.C.), consisting of a simple temenos set around an altar dedicated to Isis, Serapis, and Anubis. Two small private sanctuaries dedicated to Alexander and Cybele still exist. The agora was entered on the west side through an arch which rested on the enclosure dedicated to Zeus. The street entered the agora and skirted the north side. There were porticoes around all four sides of the square; along the west side, a Doric stoa with shops, along the east side, another Doric stoa, but without shops, along the south side, still another Doric stoa with the central columns engaged in the wall which protected a long double-aisled room at the center of the portico from the wind; the north side was occupied by the *hiera stoa*. This stoa consisted of a double row of columns, Doric on the outside, Ionic on the inside, and a line of 15 shops along the back. Its construction dates from the middle of the 2d century B.C. Behind this portico is the well-preserved *ekklesiasterion* (late 3d cent. B.C.), an almost square assembly chamber, with stairs rising at right angles around the three sides nearest the hill, and a niche on the fourth side furnished with a bench and framed by an arch. Next to the *ekklesiasterion* was the Roman prytaneum with the usual peristyle construction. The theater, contemporary with the founding of the city, is particularly important because of the extraordinarily well-preserved condition of the *proedria* (front) seats and, above all, of the stage, every alteration of which has been investigated, from the original phase (middle of the 2d cent. B.C.), with *logeion* having only one door, to the second, Hellenistic, phase with a freely accessible *logeion* having three *thyromata*. There were two gymnasiums in the city: one, on the same level as the Temple of Athena, almost completely in ruins, and subjected to radical alterations in Roman times (baths), and the other, known as the lower gymnasium, at the southern end of the city, which consisted of a palaestra with a portico of Doric columns with various rooms off it (the central room, or ephebeion, having two Ionic columns at the entrance), used for exercises or ablutions (basins with water spouts formed by lion protomas). Attached to the lower gymnasium was a stadium, approximately 625 ft. long, with a Doric stoa overlooking it on the north side; the stadium and the gymnasium probably date from the second half of the 2d century B.C. The houses are very important; they were of various types, but most of them were built around a central courtyard, often with columns on one or more of the sides. The main rooms were usually ranged along the back of the house and the entrance frequently consisted of a long corridor. Traces of pictorial decoration, in the so-called "Style I" and imitating marble facings are often encountered. There are relatively few buildings dating from the Byzantine period at Priene (two churches, one of them devised out of the baths, and the other out of the Temple of Athena, and a late-period castle).

BIBLIOG. Society of Dilettanti, Antiquities of Ionia, II, London, 1797; O. Rayet and A. Thomas, Milet et le Golfe Latmique, 2 vols., Paris, 1877–80; M. Collignon, Les fouilles de Priène, Rev. des deux mondes, VI, 1901, pp. 341–64; T. Wiegand and H. Schrader, Priene, Berlin, 1904; F. Koepp, Aus altgriechischen Städten, AAnz, 1905, cols. 141–49; W. Wilberg, Zum Athena-Tempel in Priene, AM, XXXIX, 1914, pp. 72–82; F. Krischen, Die Orophernes-Halle in Priene, JdI, XXXI, 1916, pp. 306–09; A. von Gerkan, Zum Gebälk des Athenatempels in Priene, AM, XLIII, 1918, pp. 165–76; A. von Gerkan, Das Theater von Priene, Munich, Berlin, Leipzig, 1921; F. Krischen, Das hellenistische Gymnasion von Priene, JdI, XXXVIII–XXXIX, 1923–24, pp. 133–50; W. Dörpfeld, Das Theater von Priene und die griechische Bühne, AM, XLIX, 1924, pp. 50–101; A. von Gerkan, Der Altar des Athenatempels in Priene, BJ, CXXIX, 1924, pp. 15–35; A. von Gerkan, Die Datierung der Statuenbasen vor dem Proskenion in Priene, AM, XLIX, 1924, pp. 225–30; G. P. Stevens, The Volute of the Capital of the Temple of Athena at Priene, MAARome, IX, 1931, pp. 135–44; B. Meyer, Das Propylon des sogenannten Asklepieions in Priene, JdI, XLIX, 1934, p. 109; M. Schede, Heiligtümer in Priene, JdI, XLIX, 1934, pp. 97–108; M. Schede, Die Ruinen von Priene, Berlin, Leipzig, 1934 (2d ed., 1964); C. Praschniker, Die Gigantomachie-Reliefs von Priene, ÖJh, XXX, 1936–37, pp. 45–49; A. Schober, Zur Gigantomachie von Priene, ÖJh, XXX, 1936–37, pp. 28–44; R. Martin, L'urbanisme dans la Grèce antique, Paris, 1956, passim; A. von Gerkan, Zum Skenengebäude des Theaters von Priene, Istanbuler Mitt., IX–X, 1959–60, pp. 97–108; G. Kleiner, RE, sup. IX, s.v., cols. 1181–1221 (bibliog.).

Sakçegözü. In 1907–11 J. Garstang explored several small artificial mounds on the plain around Sakçegözü. At Coba Hüyük, he discovered a small fortified neo-Hittite palace which occupied the full width of the mound. The palace was located in the northeast corner of the area inside the walls, furnished with bastions set at regular intervals; its entrance was decorated with figured orthostats and a central column resting on a finely sculptured base in the form of matching sphinxes. Another series of orthostats adorned the gate set into the walls. There were other buildings along the northwest side which opened onto the courtyard occupying most of the space inside the walls to the south. Various phases in the building of the palace have been determined. The most interesting aspect is offered by the reliefs, which, while remaining within the sphere of neo-Hittite art, show strong Assyrian or Aramaic influences. The carvings have been dated from the middle of the 8th century B.C. Particularly important is the relief on the city gate (now in Berlin, Staat. Mus.) showing a hunting scene which probably had some religious significance. Also unusual is the fact that the action unfolds not on one slab (as was normally the case) but on three. In the earliest levels, first explored by Garstang and examined in 1949, the sequence of cultures also turned out to be richer; ranging from the pre-Halab Chalcolithic period, through various successive phases, to the so-called "Habur" period, after which there is a jump to the 1st millennium B.C., and then to the classical period, 4th–1st century B.C. The site was again inhabited during the Middle Ages.

BIBLIOG. J. Garstang, First Interim Report on the Excavations at Sakje-Geuzi, Liverpool Annals of Archaeol. and Anthr., I, 1908, pp. 97–117; J. Garstang, Second Interim Report on the Excavations at Sakje-Geuzi in North Syria, 1911, Liverpool Annals of Archaeol. and Anthr., V, 1913, pp. 63–72; E. Pottier, L'art hittite, V: Sakjé-Geuzi, Syria, V, 1924, pp. 1–18; D. M. Vaughan, Some Notes on the Dado-Sculptures of Sakjegeuzi, Liverpool Annals of Archaeol. and Anthr., XXI, 1934, pp. 37–41; J. Garstang and W. J. Pythian-Adams, Third Report on the Excavations at Sakje-Geuzi; 1908–11, Liverpool Annals of Archaeol. and Anthr., XXIV, 1937, pp. 119–40; E. Tankard, The Sculptures of Sakjegeuzi, Liverpool Annals of Archaeol. and Anthr., XXVI, 1939, pp. 85–88; E. Akurgal, Späthethitische Bildkunst, Ankara, 1949, passim; J. Du Plat Taylor, V. Seton Williams and J. Waechter, The Excavations at Sakçe Gözü, Iraq, XII, 1950, pp. 53–138; J. Waechter, S. Göğüs and V. Seton Williams, The Sakçe Gözü Cave Site 1949, Belleten, XV, 1951, pp. 193–201; H. Frankfort, The Art and Architecture of the Ancient Orient, Harmondsworth, 1954, passim; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, passim; M. Vieyra, Hittite Art, 2300–750 B.C., London, 1955, passim; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, passim.

Sardis. This Lydian city, situated on the slope of a steep hill and served by the waters of the Paktolos and the Hermus, was already inhabited in neolithic times. It became, under Croesus (560–546 B.C.), the capital of the kingdom of Lydia and, from 546 B.C., the seat of an important Persian satrapy. Seriously damaged during the Ionian revolt (499 B.C.), it remained a Persian metropolis up to the Macedonian conquest (337 B.C.), after which it became a part of the Seleucid and (188 B.C.) Pergamene kingdoms. Incorporated into the Roman province of Asia (133 B.C.), it enjoyed great prosperity until it was sacked by Khusrau II during his two campaigns (A.D. 615–17). Going into a rapid decline, it continued to languish until the 15th century when the acropolis, the last inhabited part, was abandoned as

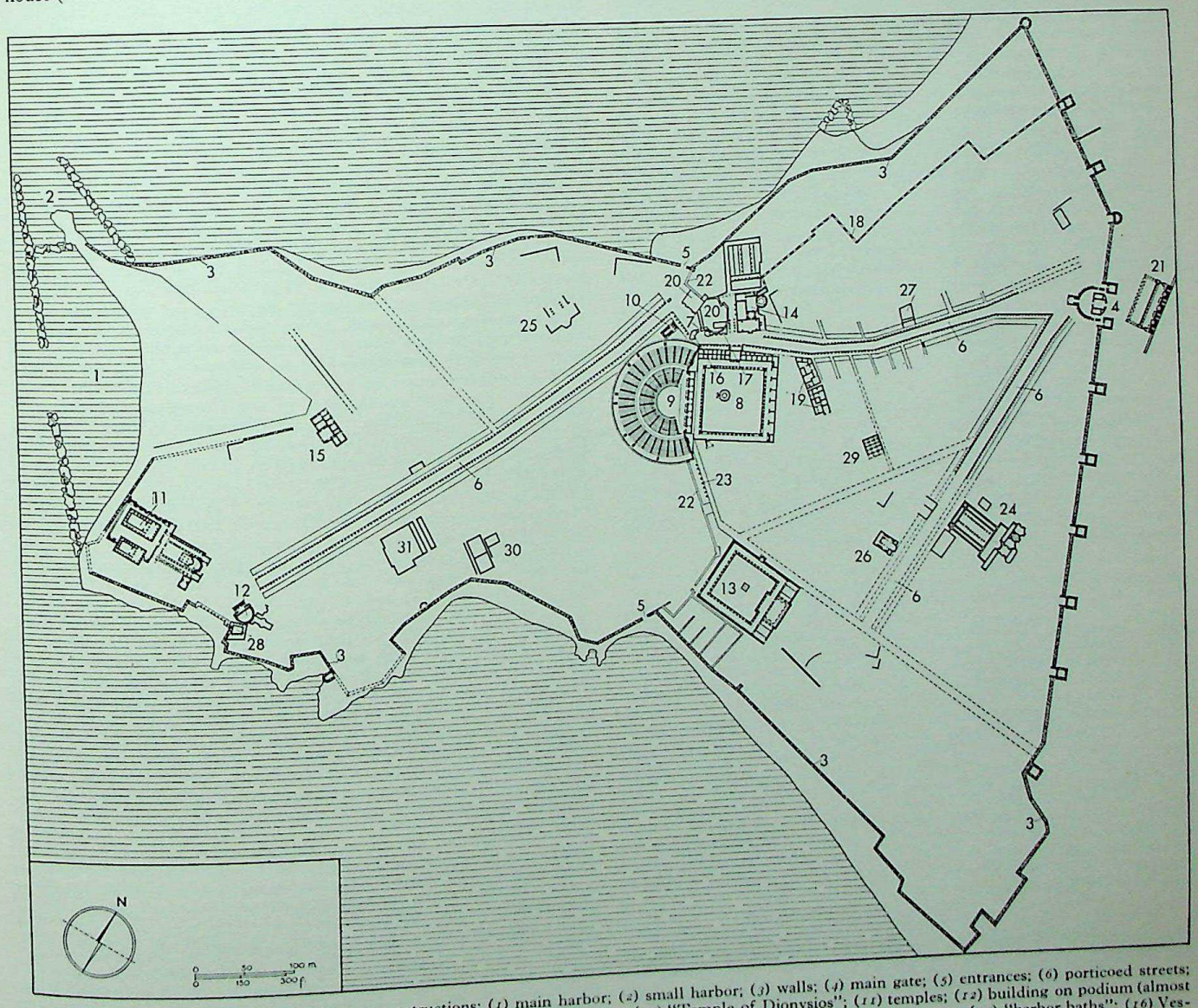
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

well. American excavators (active 1910–15 and from 1958 to the present) have brought considerable remains to light, and have established the long history of the site. The remains of the walls, dating from the 5th century B.C. (quite a large expanse of them still stand on top of the acropolis), frequently built over early foundations or embodying sections of earlier walls, are not particularly conspicuous. The most important monument is undoubtedly the sanctuary of Artemis, an ancient architectural complex rebuilt after the destructions brought about by the Ionians, with various additions and restorations dating from Roman times. The temple is Ionic pseudodipteral with 8×20 columns, a long amphiprostyle cella, an adytum and an opisthodomos; and a structure of archaic type, possibly the earlier altar, stood against the east façade. As to the Hellenistic-Roman city, which extended over the plain, what is known are the remains of a theater, a stadium, and an edifice with large pillars (thought to have been a gymnasium), as well as several sections of the walls. Recent explorations have proved that Butler's Building B (a great hall, 400 ft. long) was a gymnasium dedicated to Lucius Verus; along the east side, a large rectangular peristyle was connected to the long hall of Building B by a smaller courtyard with rich marble decorations, dating from the reign of Caracalla, while to the southwest was a porticoed street with shops (one of them identified as the workshop of a bronze founder). The discovery of a synagogue (A.D. 220–50, with restorations dating from the end of the 4th cent. A.D.), a long tripartite structure devised out of the rooms of a gymnasium, and the excavation of a rich early Christian house ("House of Bronzes"), are also of the greatest interest. Numerous burial mounds on the other side of the river (Bin Tepe, the thousand hills) constituted the Lydian necropolises, most of which were, unfortunately, plundered in ancient times. The other necropolises contain, aside from a number of painted early Christian tombs, an important mausoleum on steps, probably dating from the Persian period, and the chamber tomb with colonnaded *prothyron* of Claudia Antonia Sabina (A.D. 185–95), where parts of a fine sarcophagus of the Sidamara type have been found. Important, lastly, is the architectural terra-cotta work which has come to light during excavations and which formed a part of the protective decoration of private houses, as at Gordion and Pazarlı.

The remains of Byzantine churches are rather insignificant; one of the churches, of extremely modest dimensions, stood behind the Temple of Artemis, and another, very large and originally vaulted, in the valley. A third church has recently been discovered.

BIBLIOG. H. C. Butler et al., Sardis, 10 vols., Princeton, Leiden, 1922–32; G. M. A. Hanfmann, Prehistoric Sardis, Studies Presented to D. M. Robinson, I, St. Louis, 1951, pp. 160–83. See the annual preliminary reports of G. M. A. Hanfmann in BAmSOR, 1959 ff.

Side (mod. Eski Antalya). This was a colony founded near the Aeolian city of Cyme (7th cent. B.C.) along the shores of the Antalya Gulf, on a site already inhabited at the beginning of the 1st millennium. Conquered by Alexander the Great in 333 B.C., in the wars between Rome and Syria (197 and 190 B.C.) it was allied with Antiochus III and was later incorporated in the Roman state. It



Side, archaeological plan. Greek and Roman constructions: (1) main harbor; (2) small harbor; (3) walls; (4) main gate; (5) entrances; (6) porticoed streets; (7) arched gate; (8) agora with round building (probably a temple); (9) theater; (10) "Temple of Dionysios"; (11) temples; (12) building on podium (almost certainly a temple); (13) peristyle with hall of the imperial cult; (14) bathing establishment, now converted into a museum; (15) "harbor baths"; (16) Vespasian monument; (17) fountains; (18) aqueduct; (19) private houses; (20) water tank; (21) nymphaeum. Byzantine constructions: (22) walls built by Philippus Attius; (23) porticoed street; (24) basilica; (25) basilica with cruciform domed church added later; (26) cruciform church with dome; (27) sacred area; (28) nymphaeum; (29) secular building; (30) house; (31) baths (*from A. M. Mansel, 1963*).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

was immensely prosperous in imperial times and continued to thrive up to the time of the Arab invasions (8th cent. A.D.). The rather large inhabited center was protected by turreted rubble walls which skirted the coast of the peninsula, then cut across the promontory; the inner face of the mainland walls was divided into three stories with two galleries and arrow slits. In the 2d century A.D. a lavish nymphaeum was built outside the old city gate; it consisted of three niches decorated with three superimposed architectural orders (more than a hundred columns), while two orders of open colonnades projected foward at either side of the pool. Inside, the gate opened into a hemicycle, also decorated with two superimposed orders of marble colonnades, giving access to two porticoed streets built in Roman times, one leading south, the other, considerably longer, toward the theater where, passing under an arch, it continued up to the top of the promontory, not far from the harbor. The theater is mostly Roman with substructures and vaulted passageways and a rich *scaena* with two stories of great marble colonnades; directly behind the stage was a porticoed agora with shops around three sides and a monumental columned entranceway off the street. In the open space was a small round temple (peripteral tholos with 12 Corinthian columns and a domed vault decorated with the signs of the Zodiac). Another quadriporticus (so-called "Building M") served three large rooms set along one side; the middle room, used for the cult of the emperor, opened onto the courtyard by means of a large colonnade surmounted perhaps by a pediment; the three inner walls of the room were decorated with niches and two superimposed orders of small marble columns. A 2d-century imperial statue was found in the central niche, images of gods in the others. The two rooms on either side were triple aisled with upper galleries. Another monumental center next to the harbor consisted of two peripteral Corinthian temples (6×11 columns) placed side by side (1st cent. A.D.), one dedicated to Athena, the other to Apollo. Still another smaller Roman temple with a semicircular cella stood at the end of the porticoed street. Equally important are the tombs, most of all the mausoleum in the form of a prostyle temple set in a large porticoed courtyard, outside the city walls (end of the 3d cent. A.D.); other tombs are interesting because of their structure, with sail vault or brick domes, or because of the magnificent sarcophagi they have yielded. A baths structure has recently been excavated and converted into a museum; two others, near the harbor, have yet to be investigated. The remaining classical monuments in Side are of lesser importance: private houses with peristyles, architectural structures that date from Hellenistic and late Roman times, fountains and ornamental buildings; of particular interest is the fountain with niche and colonnades near the theater dedicated to Vespasian. There are also remains of a Roman aqueduct.

The monuments dating from Byzantine times are equally important. At about the end of the 4th century another wall, furnished with towers, was built inside the city, branching off from the *scaena* of the theater. At the same time, numerous Christian churches were built. These include the cathedral (5th cent.), a five-aisled (later reduced to three) basilica with interesting subsidiary buildings for baptismal ceremonies, and the "Harbor Church," a complex basilica with the remains of two pagan temples incorporated into the atrium. There are other small churches near the cathedral and the remains of the bishop's palace have been identified south of it.

BIBLIOG. K. Lanckoronski, G. Niemann and E. Petersen, Städte Pamphyliens und Pisidiens, I, Vienna, 1890, pp. 125–52; R. Paribeni and P. Romanelli, Studi e ricerche archeologiche nell'Anatolia meridionale, MALinc, XXIII, 1914, cols. 5–274 at 120; V. Schultze, Altchristliche Städte und Landschaften, II, Gütersloh, 1926; A. M. Mansel, Side kazisina dair kisa rapor, Belleten, XIV, 1950, pp. 683–86, XVI, 1952, pp. 435–37, XVIII, 1954, pp. 400–01, XXIII, 1959, pp. 690–91, XXIV, 1960, pp. 711–12; A. M. Mansel, E. Bosch and J. Inan, Vorläufiger Bericht über die Ausgrabungen in Side im Jahre 1947, Ankara, 1951; J. Inan, Side'se bulunan beykeltraşi eserler (Sculpture Discovered at Side), Türk Tarih Kongresi, Ankara, 1952, pp. 72–79; A. M. Mansel, C. E. Bean and J. Inan, Die Agorà von Side, Ankara, 1956; A. M. Mansel, Bericht über Ausgrabungen und Untersuchungen in Pamphylien in den Jahren 1946–55, AAnz, 1956, cols. 34–119; S. Eyice, La ville byzantine de Side en Pamphylie, Actes Xe Cong. int. d'ét. byz. (1955), Istanbul, 1957, pp. 130–33; A. M. Mansel, Die Grabbauten von Side (Pamphylien), AAnz, 1959, cols. 364–402; S. Eyice, Historic-artistic Significance of the Byzantine Monuments of Side, Türk Tarih Kongresi, Ankara, 1960, pp. 53–60 (in Turk.); A. M. Mansel, Side Tyatrasu (The Theatre of Side), Belleten, XXVI, 1962, pp. 45–78; A. M. Mansel, Die Ruinen von Side, Berlin, 1963.

Sivas (anc. Sebastia, or Cabira). This was the imperial Roman city of Sebastia, of which no monuments remain, and was elevated by Justinian, who restored the fortified walls, to the position of capital of the province of Armenia Prima. After being fought for by the Byzantines, the Armenians, and the Persians, it was conquered by the Seljuks at the end of the 11th century. It then became the capital of the Danismen emirs, from whom it was once again seized by the Seljuks. It finally became a part of the Ottoman Empire, but it never recovered from the blows received, and it has remained an impoverished village. The Seljuk monuments, however, are worthy of note. Among them, the Gök Medrese (Blue Madrasah), the Bürciye Medrese and the Çifte Minare Medrese were all built at the same time (1271–72). The entrance of the Gök Medrese is in the form of a large niche adorned with stalactites and set into an elegantly decorated frame with two flanking minarets jutting out at either end of the façade. The ornament of these is constituted by tiles (once enameled) placed so as to form a network of lozenges; marble reliefs on the entrance are in the form of animal heads. The inner courtyard, with a fountain in the center, has porticoes around the sides. The Büriciye Medrese consisted of four wings set around a courtyard. Nothing but the façade of the Çifte Minare remains: it is lavishly, but harmoniously, decorated. Other monuments in Sivas worth mentioning are the Mausoleum of Hasan Bey (1347), a round structure with brick walls, and the largest known Seljuk mental hospital (1217), which also served as a medical school. The only remaining part is the hospital proper, but it is in ruins. The group of buildings was built by Izzettin Keykavus I, whose tomb stands nearby.

BIBLIOG. A. Gabriel, Monuments turcs d'Anatolie, II, Paris, 1934; J. M. Rogers, The Çifte Minare Medrese at Erzurum and the Gök Medrese at Sivas, Anatolian S., XV, 1965, pp. 63–85.

Smyrna (mod. İzmir). The city, situated at the mouth of the ancient Hermus, was founded, according to the sources, by the Leleges and subsequently taken over by Aeolian settlers (11th cent. B.C.) and then passed into the possession of Ionian settlers from Kolophon (9th cent. B.C.). At the beginning of the 6th century B.C., it was captured and razed to the ground by Alyattes, the king of Lydia, who prevented its reconstruction. Only at about the end of the 4th century B.C. was the new city of Smyrna built through the efforts of Lysimachus on the slopes of the Pagos (now Kadifekale, and which thus became the acropolis of the new city), about 5 miles from the ancient city (now Bayraklı). The new city flourished under the Seleucids and even more so under the Attalids; its lavish prosperity did not diminish in Roman times; on the contrary, favored as the city was by many emperors, it appreciably increased. In A.D. 178 it was almost completely demolished by an earthquake and immediately rebuilt by Marcus Aurelius at the insistence of the rhetorician Aelius Aristeides. Its importance grew again during the late Roman Empire and during the Byzantine period, to the detriment of Ephesus and despite repeated Arab invasions. Conquered by the Turks in 1076, it again became a Byzantine possession in 1097. It was then administered by the Genoese up until 1320, when the Turks regained possession for a second time, this time definitively, except for the brief overlordship of the Crusaders and the even briefer reign of Tamerlane. Though devastated by earthquakes in the 17th and 18th centuries, it remained one of the most important Anatolian cities. Several outstandingly important parts of the ancient city of Smyrna (Bayraklı) have come to light, namely a temple from the 7th century B.C., and in the vicinity of Bayraklı, the remains of a round structure known as the "Tomb of Tantalus." Not much is known about the Hellenistic-Roman city of Smyrna, over which the modern city has been built. There are, even so, important ruins of the agora with porticoes and shops around three sides (the west side is well-preserved) and a large Roman basilica on the fourth (north side). This basilica, particularly rich in marble decoration, consisted of a nave and two aisles and was supported by a series of vaulted substructures (well preserved). There are, moreover, a few remains of a theater and a stadium, while several sections of the walls would seem to date from Hellenistic times, despite many rectifications and changes undertaken in the Middle Ages. In the valley, some three miles southeast of the city, there are remains of three large Roman aqueducts, much restored by the Byzantines and Turks.

The modern city of İzmir has been considerably developed. The International Fair pavilions, standing in a magnificent park, are designed in keeping with the dictates of the international style of architecture.

BIBLIOG. K. Ikonomos, Etude sur Smyrne, Smyrna, 1868; E. Curtius, Beiträge zur Geschichte und Topographie Kleinasiens, AbhBerlAk, 1872, pp. 1–91; C. Robert, Das Schiedsgericht über Athena und Poseidon: Relief in Smyrna, AM, VII, 1882, pp. 48–58; G. Weber, Die Wasserleitungen von Smyrna, JdI, XIV, 1899, pp. 4–25; A. Fontrier, La topographie de Smyrne, REA, IX, 1907, pp. 114–20; F. W. Hasluck, The Tomb of St. Polycarp and the Topography of Ancient Smyrna, BSA, XX, 1913–14, pp. 80–93; O. Berg and O. Walter, Das römische Theater in Smyrna, AM, XLVII, 1922, pp. 8–24; F. and H. Miltner, Bericht über ein Voruntersuchung in Alt-Smyrna, ÖJh, XXVII, 1931, Beiblatt, cols. 127–88; P. Wuilleumier, Sur le Forum de Smyrne, RA, VI, 1935, p. 99; C. J. Cadoux, Ancient Smyrna: A History of the City from the Earliest Times to 324 A.D., Oxford, 1937; E. Akurgal, Smyrne à l'époque archaïque et classique, Belleten, X, 1946, pp. 72–80; R. Naumann and S. Kantar, Die Agorà von Smyrna, Klein-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

asien und Byzanz (Istanbuler Forsch., XVII), Berlin, 1950, pp. 69–114; J. M. Cook et al., Old Smyrna, BSA, LIII–LIV, 1958–59, pp. 1–193; Turkey Tourist's Guide, Ankara, 1963, pp. 114–20.

Soğanlı (Soğanlı Dere). This is the second most important group of rock-cut churches in Cappadocia and is situated in a deep and secluded valley. Generally speaking, the architectural types are the same as in Göreme: the churches are of one, two or three aisles with barrel vaults and apses at the far end or with a central dome and the four arms of a cross. In some cases (the churches of the Belli Kelise group, for example) the outside of the cone of rock has also been chiseled into the form of a dome. There are also numerous remains of frescoes, but they are in great disrepair. The only constructed church, Akkilise, has fallen into almost total ruin and its frescoes have been damaged; most of the churches are now used as pigeon cotes.

Bibliog. A. M. Lewidis, *Αἱ ἐν πογολίφοις ποναι γῆς καππαδοκίας καὶ λυκανία*, Constantinople, 1899, passim; G. de Jerphanion, Une nouvelle province de l'art byzantine: Les églises rupestres de Cappadoce, 2 vols., Paris, 1925–42; E. Kirsten, Cappadocia, Reallexikon für Antike und Christentum, II, Stuttgart, 1954, pp. 862–91.

Tarsus (mod. Gözlü Kule). When it was investigated by American archaeologists down to its earliest levels, the Gözlü Kule mound yielded an important series of finds covering the period from the Neolithic Age to the Roman period which have enabled archaeologists to piece together the data furnished by Mersin, especially with regard to that period from the end of the Chalcolithic Age to the beginning of the 2d millennium, thus making it possible for a complete picture of Cilician culture to be drawn. The Middle and Late Bronze ages, which are well represented, show the rise of the Kizzuwatna kingdom (of which Tarsus was probably the capital or, at least, an important center), its inclusion into the orbit of the Hittite empire, and, after the 12th-century destruction of the inhabited center, the presence of Mycenaean tribes (as was the case in the not-far-distant island of Cyprus). Very few changes took place in the Iron Age; the population was conservative and rather isolated. After the destruction effected by Sennacherib in 696, the city flourished once again, but there are very few Hellenistic and Roman remains. The famous monuments have all disappeared; only the bare truncated ruins of an archway — the so-called "St. Paul's Gate" — still stand. The Moslems took possession of Tarsus in A.D. 680.

Bibliog. H. Goldman, Tarsus: Preliminary Reports, AJA, XXXIX, 1935, pp. 526–49, XLI, 1937, pp. 262–86, XLII, 1938, pp. 30–54, XLIV, 1940, pp. 60–86, LIII, 1949, pp. 46–49; H. Goldman, Excavations at Gözlü Kule, Tarsus, 3 vols., Princeton, 1950–62; J. Mellaart, Anatolia, c. 4000–2300 B.C., Cambridge, 1962, passim.

Tekor (Digor). This village in the Ani region contains the ruins of an Armenian basilican church (5th cent.), rebuilt at the end of the 5th–6th century in the form of a domed basilica. The dome (destroyed in 1911), devoid of a drum, was the oldest dome of this kind in Armenian architecture. The building was cubic in structure on the outside with a faceted pyramidal roof.

Bibliog. T. Toramanian, The Church of Tekor, Tiflis, 1911 (in Armenian); J. Strzygowski, Die Baukunst der Armenier und Europa, Vienna, 1918.

Termessus. A Pamphylian city, 3,445 ft. above sea level on the slopes of the ancient Mt. Solymos, Termessus lies about 20 mi. (as the crow flies) from Adalia (Antalya). Its origins are unknown; it is mentioned for the first time in 334 B.C. in relation to the expedition of Alexander the Great, and in the succeeding Hellenistic period it enjoyed a fair amount of independence within the Pergamene kingdom. During the 3d century B.C. its rulers founded a colony known as Termessus Minor, situated near Oionoanda on the banks of the Xanthus in southwestern Pisidia. An ally of Rome in the wars against Antiochus, it was to regain its independence at the time of the wars against Mithridates (72 B.C.). Termessus continued to prosper until the 3d century A.D.; in the late Roman and early Middle Ages, the city went into a decline and by the 7th century it was completely deserted. The city, extremely well protected by its natural position, was fortified only at the points of easiest access; these various lengths of wall, furnished with several gates, were built at different times (the main sections date from the 2d cent. B.C.). Most of the public monuments, the agora, and shops were located in the western part of the city, and most of the numerous temples were located in the southeastern part. Architectural fragments and parts of a frieze with gigantomachy inspired by Pergamene art (2d–1st cent. B.C.) are all that remain of the Doric temple of Zeus Solymaeus. Only a few ruins are still standing of a large Hellenistic peripteral temple with 6×11 Ionic columns, pronaos *in antis* and a cella without opisthodomos: a frieze with representations of the myth of Iphigenia has been found and probably belonged to it, so that the temple is very likely to have been dedicated to Artemis. Dating from Roman times is the typical prostyle hexastyle Corinthian temple (of Asclepius and Hygieia?) with a so-called "Syrian" pediment and a cella with apse (Antonine period), the nearby small prostyle tetrastyle Corinthian temple set on a high podium (also Antonine), and the prostyle tetrastyle Temple of Artemis which stood near the odeum and of which only the walls of the cella (Severan period) remain. The theater and the odeum, both well preserved and distinctive, are very important. The theater, apparently Augustan in origin, stands on the mountainside east of the agora; the cavea consists of two *maeniania* divided into five *cunei* and the stage structure has five apertures (now framed by pairs of Corinthian columns surmounted by a continuous architrave. The odeum (ca. A.D. 200) south of the central gymnasium was a large hall with slightly curving tiers of seats; it was entered on the valley side and the windows were separated by pairs of Doric parastades. There were two gymnasiums in the city, one central (poorly preserved) overlooking the agora, with a large porticoed palaestra (1st cent. A.D.), and one to the northwest, typical of Asia Minor in its plan, with consecutive rooms and a rich façade decorated with niches (A.D. 220–30). There are numerous remains of Hellenistic-type dwellings with peristyles, dating from various periods of the Roman era (e.g., the house of Ktistes). The necropolises, north and south of the city, with rock-cut tombs or small heroa containing large sarcophagi (typical, the heroon of Mamastis dating from the 2d century A.D., set on a high podium with a small broken pediment supported by four Corinthian columns and a cella holding the sarcophagus) are extremely interesting. North of the city, at the top of a flight of steps, are the remains of a propylaeum dedicated to Hadrian, consisting of an architraved gate preceded by a pair of Corinthian columns terminating in pilasters.

Bibliog. K. Lanckoronski, G. Niemann and E. Petersen, Städte Pamphyliens und Pisidiens, II, Vienna, 1892, pp. 21–122, 196–223; G. Cousin, Termessos de Pisidie, BCH, XXIII, 1899, pp. 165–92, 280–303; R. Heberdey and W. Wilberg, Grabbauten von Termessos in Pisidien, ÖJh, III, 1900, pp. 177–210, J. Ficker and H. Rott, Kleinasiatische Denkmäler, Leipzig, 1908, pp. 29–30, 361–64; A. M. Woodward and H. A. Ormerod, A Journey in Southwestern Asia Minor, BSA, XVI, 1909–10, pp. 76–136; R. Paribeni and P. Romanelli, Studi e ricerche archeologiche nell'Anatolia meridionale, MALinc, XXIII, 1914, cols. 5–274 at 79; R. Heberdey, Gymnische und andere Agone in Termessos Pisidiae, Anatolian S. Presented to Sir W. M. Ramsay, Manchester, 1923, pp. 195–206; R. Heberdey, Termessische Studien, Vienna, Leipzig, 1929; R. Heberdey, Zur Geschichte von Termessos maior in römischer, AnzÖAk, LXVIII, 1931, pp. 18–28; W. Ruge, RE, s.v. Termessos.

Trabzon (anc. Trapezous; former Trebizond). The ancient city of Trapezous was founded toward the end of the first half of the first millennium B.C. by Greek settlers from Sinope. At the beginning of the 5th century, it grew into an important commercial center; the road which led across the mountains of Armenia, connecting the Black Sea and Persia, started there. Captured by the Romans in the 1st century B.C., it was considerably enlarged and embellished by Hadrian, who also built a new artificial harbor. In Byzantine times, Justinian set about strengthening the fortifications. In 1204, after Constantinople fell into the hands of the Crusaders, Trabzon became an imperial seat. In 1461, it fell to the Turks. The city is divided into an old upper city, still enclosed by the ancient bastions, and a new city which spreads from the bastions to the harbor. The old city contains several important monuments: the upper citadel with *enceinte* walls dating from the time of the Comnene dynasty and, inside, the remains of the imperial palace; the ancient church of Panagia Chrysoképhalos (now a mosque, the Ortahisar Cami), a Latin-cross building changed into its present form probably in the 13th century, when the dome over the crossing and the narthex with a loggia were built (the dome was covered with sheets of gilded bronze, whence the name of the church); the basilican church of Hagia Sophia, built a little after 1204 and later changed into a cross-in-square domed church (1248–63), when the three atriums (north, south, west) were added. In the south atrium are the remains of rather crudely executed sculptures with epic representations of ancestors. Byzantine fresco cycles are to be found inside. Located outside the bastions are the church of St. Anne, with three apses, dating from the beginning of the 8th century, then modified, according to an inscription, in 884–85; the church of St. Eugenius (now the Yeni Cuma Cami), it too with three apses and with a dome (built later) over the crossing (after 1340).

Bibliog. G. Millet, Les monastères et les églises de Trébizonde, BCH, XIX, 1895, pp. 419–59; N. Baklanov, Deux monuments byzantine de Trébizonde, Byzantion, IV, 1927–28, pp. 493–95; G. Millet and D. Talbot Rice, Byzantine Painting at Trebizond, London, 1936.

Troy (anc. Ilium, Trūva; mod. Hisarlık). Excavations were begun by H. Schliemann (1870–90), were continued by W. Dörpfeld (1893–

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

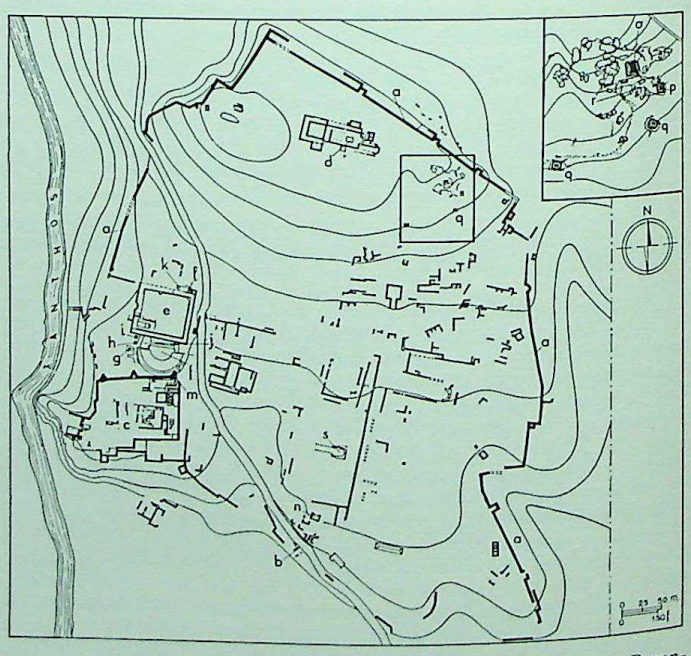
94), and were resumed by the University of Cincinnati, under the guidance of C. W. Blegen, between 1932 and 1938. Schliemann's credit lies in having identified the site of the Homeric city, or rather its acropolis, as the Hisarlık mound, within the precincts of the Temple of Athena, and in having distinguished its various phases. The American excavations, while admirably completing the data already obtained and solving a number of extremely important problems, have not brought about any substantial changes in the general outlines. All told, nine cities, subdivided into 46 distinct subphases, have been identified. From its foundation, Troy had been a fortified stronghold at an important crossroads between Europe and Asia; its culture was clearly northwest Anatolian in origin (antecedents at Kum-Tepe). The so-called "Treasure of Priam," discovered by Schliemann and probably hidden just before the destruction took place at the end of the period, is to be ascribed to Troy II, a much larger city in size, whose elaborate fortifications were frequently altered. Troy III, IV, and V follow the same sequence of cultural development which distinguished the Early Bronze Age of Troy; they were not, in any case, merely poor villages, as some authorities have maintained. Troy VI, built by a new population, flourished in the Middle and partly in the Late Bronze Age, showing gradual and considerable growth; the original area more than doubled and city walls were built of dressed stone. The conquest of the city by the Homeric heroes apparently took place at the end of that phase known as Troy VII A. From that moment on, the city failed to recover its former prosperity. During the Late Bronze Age, a very noticeable Mycenaean influence is found which epitomized all those cultural and commercial relations within the Aegean that distinguished Trojan culture from its very inception. Even so, both recent and earlier excavations have brought considerable remains of the Hellenistic-Roman city to light: among them, the Temple of Athena, of archaic origin, but extant in a late Hellenistic (or, according to better-grounded opinion, Augustan) form (it is a Doric peripteral temple with 6 × 12 columns, preceded by propylaea built in Roman times); two theaters, the smaller one better preserved; and a Roman amphitheater and baths. These are tangible evidence of the favor showed by the emperors towards what was considered the mother city of Rome.

Bibliog. H. Schliemann, Ilios, Leipzig, 1881; H. Schliemann, Troja, Leipzig, 1884; W. Dörpfeld, Troja 1893, Leipzig, 1894; W. Dörpfeld, Troja und Ilion, 2 vols., Athens, 1902; H. Schmidt, ed., H. Schliemanns Sammlung trojanischer Altertümer, Berlin, 1902; A. M. Mansel, Türkiyenin arkeoloji . . . bibliografya, Ankara, 1948, pp. 401–21; C. W. Blegen et al., Troy: Excavations Conducted by the University of Cincinnati, 1932–38, 4 vols., Princeton, 1950–58; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, passim; A. Götze, Kleinasien, 2d ed., Munich, 1957, passim; J. Mellaart, Anatolian Chronology in the Early and Middle Bronze Age, Anatolian S., VII, 1957, pp. 55–58; J. Mellaart, Notes on the Architectural Remains of Troy I and II, Anatolian S., IX, 1959, pp. 131–62; J. Mellaart, Anatolia c. 4000–2300 B.C., Cambridge, 1962; F. W. Goethert and H. Schleif, Der Athenatempel von Ilion, Berlin, 1962; C. W. Blegen, Troy and the Trojans, London, 1963; J. Levillain, Etude sur la localisation d'Ilion, Paris, 1963; R. Hachmann, Hissarlik und das Troja Homers, Vorderasiatische Archäologie: Studien und Aufsätze Anton Moortgat gewidmet, Berlin, 1964, pp. 95–112; B. M. Holden, The Metopes of the Temple of Athena at Ilion, Northampton, Mass., 1964.

Van. An eastern Turkish city, the seat of a vilayet, now stands on the shores of the lake of the same name. During the first half of the first millennium B.C., it was the capital of the Urartu kingdom which, with varying success, held out against Assyria. Near the modern city, there are three sites of particular interest: Vankale, the actual acropolis of the city, upon whose southern slopes flights of stairs and rooms are carved out of the rock (probably the monumental sepulcher of Argishitis I, r. ca. 789–766, and his family); Samiramalti, or Tilkitepe, a small artificial mound, standing southwest of the city; and Toprakkale, about 4 mi. west of the city, built on an outcrop of the hills whose steep sides make it a natural, almost impregnable fortress. It is this site which has yielded the most interesting finds. Following a series of accidental discoveries in 1879, H. Rassam worked the site on behalf of the British Museum and found the famous bronze shields with animals arranged in concentric bands and edged with cuneiform inscriptions, as well as other material. In 1898 Belck and Lehmann-Haupt resumed excavations of the acropolis along scientific lines and uncovered the Temple of Khaldis, which had already been explored by Rassam but from which they dug further material (later identified as temple furnishings; aside from the shields there were a throne and a stool trimmed in metal, bronze bowls, and candelabra, extremely helpful in providing a clearer idea of Urartian art, which proved to be greatly influenced by Assyrian art). Inside the temple (about 67 ft. by 44 ft.) was a square base, 14 ft. by 14 ft., which probably held the statue of the cult, and in front an open clearing some 65 ft. on each side, decorated with a geometric mosaic in black and white stone. Storerooms and houses for the priests were set around the temple. The foundations built of stone blocks, varied in depth according to the lay of the land. As to the citadel, it has been possible, on the basis of the inscriptions, to ascribe both it and the temple to Rusas I, though the temple, in its final form, was the work of Rusas III (ca. 605–585). The materials may be said, therefore, to date from the 7th century B.C. Toprakkale, or Rusahina, from the name of its founder, was probably destroyed by the Medes under Cyaxares in 585. In 1913 the Russian archaeological expedition headed by Marr and Orbeil worked at Toprakkale, uncovering a temple carved out of the rock at the foot of the hill, with an inscribed stele still standing in its cult niche.

Bibliog. F. F. C. Lehmann-Haupt, Materialen zur älteren Geschichten Armeniens und Mesopotamiens, Berlin, 1906, pp. 65–124; F. F. C. Lehmann-Haupt, Armenien einst und jetzt, 2 vols., Berlin, 1910–31; N. Farmakovski, Materialy po arkheologii Rossii, XXIV, St. Petersburg, 1912, pp. 15–78; J. Orbeli, Kolokol c ani'skimi ornamental'nymi notivami XII–XIII veka (Bell with Ani Ornamental Motifs from the 12th–13th Century), Zapiski Vostochnogo otdeleniya Imperatorskogo Russkogo Arkheologicheskogo Obshchestva, XX, 1912, pp. 023–039; N. Marr and J. Orbeli, Arkheologicheskaya ekspeditsiya v Van (Archeological Expedition to Van), Leningrad, 1922; W. A. Jenny, Schamiramalti, Prähistorische Z., XIX, 1928, pp. 280–304; E. B. Reilly, Tilki Tépé, Am. J. of Semitic Languages, LIV, 1937, p. 82; K. and S. Lake, The Citadel of Van, Asia, XXXIX, 1939, pp. 74–80; K. Lake, Vanda, yapılan hafrīyat (Excavations at Van), Türk Tarih Arkeologiya ve Etn. Dergisi, IV, 1940, pp. 179–91; E. B. Reilly, Test Excavations at Tilkitepe, Türk Tarih Arkeologiya ve Etn. Dergisi, IV, 1940, pp. 145–65; H. Otto, Die amerikanischen Grabungen am Burgfelsen von Van, Archiv für Orientforschung, XIV, 1941–44, pp. 87–95; R. D. Barnett, The Excavations of the British Museum at Toprakkale near Van, Iraq, XII, 1950, pp. 1–42; A. Götze, Kleinasien, 2d ed., Munich, 1957, pp. 187–200.

Xanthus (mod. Kınık). The most important city of Lycia, Xanthus, was set on two hillocks overlooking the Xanthus River. A Lydian possession until 545 B.C., it fell into the hands of the Persians, under whom it very quickly gained what was, to all intents and purposes, independent status. Conquered by Alexander, it became subject to the Seleucids and in 188 B.C. to the Rhodians. In 167 B.C., it freed itself from the Rhodians and later entered the Roman orbit as a free city. It enjoyed considerable prosperity in imperial times, but with the decline of Byzantine power it was completely abandoned. Numerous remains of the classical city were brought to light by English excavators in the last century and during the recent French explorations. The city walls include polygonal and isodomical stretches with monolithic corner stones (5th and 2d cent. B.C.), as well as sections dating from a late period (possibly Byzantine), distinguished by an extensive use of rubble. Remains of Roman gates have been found.



Xanthos, archaeological plan with indications of Greek, Roman and Byzantine monuments: (*a*) walls; (*b*) Hellenistic gate; (*c*) Lycian acropolis; (*d*) Roman acropolis, with Byzantine monastery built over a Roman temple; (*e*) Roman agora; (*f*) Roman theater; (*g*) funerary tower; (*h*) pillared sarcophagus; (*i*) "Harpy Tomb"; (*j*) Hellenistic necropolis; (*k*) polygonal wall; (*l*) funerary pillar with inscription; (*m*) the so-called "theater pillar"; (*n*) "Tomb of the Nereids". In the box: (*o*) the so-called funerary pillar of the acropolis; (*p*) sarcophagus of Payava; (*q*) sarcophagi; (*r*) rock-cut tombs; (*s*) Christian basilica (*from P. Demargne, 1958, completed by H. Metzger, P. Coupel, 1963*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

On the higher of the two hills ("Lycian acropolis") there is a vast terrace on the west side, upon which stood a building decorated with the frieze now in the British Museum; on the north side was a rectangular edifice with an adjoining enclosure containing an altar dedicated to Artemis (5th cent. B.C.); and on the southeast side there is a building (perhaps the royal palace), two phases of which have been identified, one (ca. 700–550 B.C.) with several rooms and the other (ca. 530–500 B.C.) distinguished by the presence of numerous secondary chambers (storerooms?) set around a central nucleus. In the depression between the two hills was to be found the Roman agora (2d cent. A.D.) with colonnades on all four sides and convex architrave. Particularly interesting is the double gate set in the east side connecting the large square with the main colonnaded street. Around the agora stand archaic tombs of the characteristic Lycian type, set on pillars (e.g., the "Harpy Tomb"); farther south is the theater, partially resting on substructures, with *frons scaenae* consisting of five rectilinear exedras, (2d half of 2d cent. A.D.); beneath the orchestra are traces of an earlier, possibly Hellenistic, theater.

In the east quarter can be seen the remains of a large Byzantine church to which was attached a building with a square courtyard, possibly the archbishop's palace. The Hellenistic-Roman necropolis northeast of the city abounds in the characteristic sarcophagi of the so-called "Lycian" type. There are the remains of a Byzantine monastery on the opposite hill.

BIBLIOG. C. Fellows, The Xanthian Marbles, London, 1843; O. S. Tonks, An Interpretation of the So-called Harpy Tomb, AJA, XI, 1907, pp. 321–38; W. R. Lethaby, Greek Buildings in the British Museum, London, 1908, pp. 178–85; G. Niemann, Das Nereiden Monument in Xanthos, Vienna, 1921; H. C. Broholm, Harpienmonumentet i Xanthos, Copenhagen, 1923; F. Krischen, Der Aufbau des Nereidenmonuments von Xanthos, AM, XLVIII, 1923, pp. 69–92; W. H. Schuchhardt, Die Friese des Nereidenmonuments von Xanthos, AM, LII, 1927, pp. 94–161; G. Rodenwaldt, Sarcophagi from Xanthos, JHS, LIII, 1933, pp. 181–213; P. Demargne and H. Metzger, Les fouilles de Xanthos en Lycie, CRAI, 1951, pp. 63–70, 1952, pp. 163–69, 1953, pp. 151–58, 1954, pp. 111–18, 1955, pp. 104–10, 1956, pp. 155–61; P. Demargne, H. Metzger, and P. Coupel, Fouilles de Xanthos, 2 vols., Paris, 1958–63; H. Metzger, Xanthos, FA, XIV, 2058, 1959, pp. 131–33; P. Demargne, Le soubassement du Monument des Néréïdes de Xanthos, Theoria: Festschrift für H. Schuchhardt, Baden-Baden, 1960, pp. 49–54; P. Coupel, and P. Demargne, Le monument des Néréïdes de Xanthos: Eléments d'une nouvelle restitution architecturelle, Atti VII; Cong. int. archéol. class., I, Rome, 1961, pp. 309–15.

Yazılıkaya (The Midas City). This city (not to be confused with the Hittite sanctuary of the same name, near Boğazköy) is situated southeast of Eskişehir, and was excavated by the French Archaeological Institute of Istanbul. It stands on a rocky mass whose level top is some 1,640 ft. long, at the center of an area strewn with Phrygian rock-cut monuments. There is proof that the site was inhabited before the arrival of the Phrygians. The latter settled on the acropolis in the second half of the 6th century, that is, after the Cimmerans had reached the central highlands; it is not, however, impossible that the fortifications of the citadel, and the stairs hewn out of the rock, date from the period when the Phrygian kingdom flourished, but in any case not earlier than the 7th century. A large quantity of gray Phrygian earthenware has been found. A second phase in the city's existence begins after the middle of the 6th century and ends in the second half of the 4th or the beginning of the 3d century. The inhabited center seems to have been suddenly abandoned under the imminence of some outside threat, possibly from the Galatians. Traces of several buildings have been found on top of the acropolis, among them a temple decorated with patterned terra cottas datable to the reign of Croesus. Signs of destruction may indicate that the city was captured by the Persians in 546, at the time of the conquest of Sardis. There is evidence of commercial contacts with the West during the 6th century. The channels of trade, opened during the Lydian domination, continued under the Persians. Standing on the hillside is the famous monument known as the "Tomb of Midas," consisting of a façade carved out of the rock in the form of a building with a ridged roof and decorated with elegant and intricate geometric designs in relief. Midas is mentioned in an inscription. Recent investigations have determined that it was a place of worship: underneath the façade is a subterranean chamber, and a nearby building was probably connected with the ritual ceremonies.

BIBLIOG. K. Bittel, Die Felsbilder von Yazılıkaya, Bamberg, 1934; K. Bittel, Yazilikaya, Leipzig, 1941; K. Bittel, Kleinasiatische Studien, Istanbul, 1942; C. G. E. Haspels, Phrigie III, La Cité de Midas: Céramique et trouvailles diverses, Paris, 1951; A. Gabriel, Phrigie II, La Cité de Midas: Topographie, le site et les fouilles, Paris, 1952; E. Akurgal, Phrygische Kunst, Ankara, 1955, passim; T. Beran, Das Felsheiligtum von Yazılıkaya: Deutung und Datierung, Stuttgart, 1962; A. Gabriel, Les énigmes de la cité de Midas, REA, LXIV, 1962, pp. 31–34.

Yortan. A site east of Pergamum, Yortan has yielded an extramural necropolis akin to the culture of Troy I and II. The inhabited centers relative to these burial grounds, of which little scientific data is known, have not been discovered except for one mud-brick house with right-angle walls, uncovered at Ovabayîndir. The bodies, lying in a contracted position, were almost always enclosed in *pithoi* with the mouth facing east. Enclosures formed by stone slabs driven upright in the ground were sometimes found. The cist tombs are rare and perhaps date from a later period. The sacred furnishings, set in and round the *pithoi*, included metal objects (gold, copper) and ceramics with white ribbing and zigzag lines painted on a dark background. Certain features of Yortan culture are found, during the Early Bronze Age II, in the Beycesultan area; this makes it possible to definitely establish the life span of the culture in question as being contemporary not only with Troy I, but with Troy II, as well.

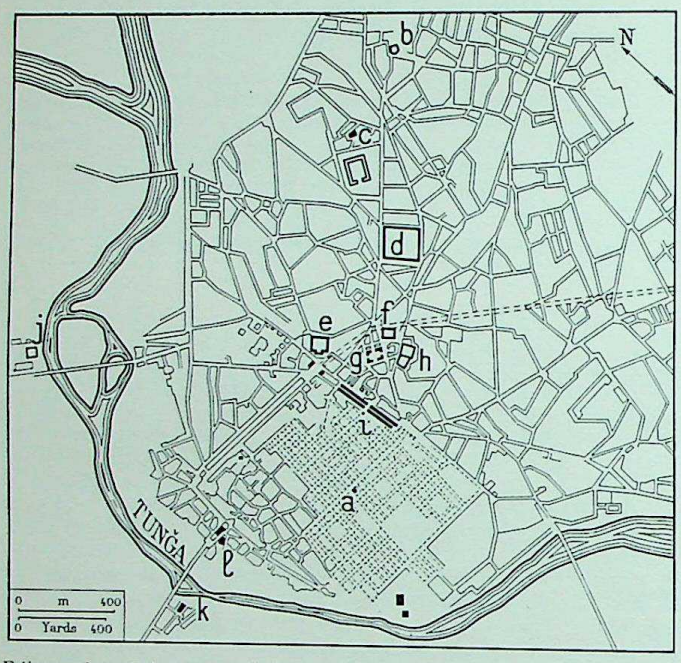
BIBLIOG. M. Collignon, Note sur les fouilles de M. Paul Gaudin dans la nécropole de Yortan en Mysie, CRAI, 1901, II, pp. 810–17; R. W. Hutchinson, Uruk and Yortan, Iraq, II, 1935, pp. 211–22; K. Bittel, Ein Gräberfeld der Yortan-Kultur bei Babaköy, Arch. f. Orientforschung, XIII, 1939, pp. 1–28; T. Özgüç, New Discoveries Pertaining to the Culture of the Yortan Necropoles, Belleten, VIII, 1944, pp. 53–70 (in Turk.); T. Özgüç, Die Bestattungsgebräuche im vorgeschichtlichen Anatolien, Ankara, 1948, passim; E. Akurgal, Yortankultur, Siedlung in Ovabayîndir bei Balikesir, Anatolia, III, 1958, pp. 156–64.

Zincirli. This was the capital of the Aramen state of Sam'al or Ya'udi, founded in the second half of the 10th century B.C. The most famous kings were Kilamura, who profited from the disorders following the death of Shalmaneser III (858–824) to enlarge the kingdom; Panamura I, whose inscription has been found on a statue of the god Hadad and who brought the kingdom to prosperity between the death of Adadnirari III and Tiglathpileser III (745–727); Barrekib, son of Panamura II, restored to the throne by Tiglathpileser III. After this period of vassalage no more mention is made of the state in the Assyrian annals, from the reign of Sargon II on; it was probably the seat of an Assyrian governorship until 676. Explored by German archaeologists, Zincirli has proved to be an essential link in the understanding of the art of those states improperly known as neo-Hittite. The city was fortified by a two-fold circuit of walls; the outer walls were doubled in Assyrian times and furnished with projecting bastions. Three double gates gave access to the inhabited area. The acropolis, surrounded by a wall and also reinforced by embattled towers, contained the most important buildings. Other internal partitions were built to strengthen the defenses. To the north and northwest were located public buildings, dating from various periods, their fundamental characteristic being that most of them were in the form of the *bît-hilani*: this was essentially a building consisting of an antechamber which was entered through a columned portico, a reception hall parallel to the antechamber, and several subsidiary rooms. The was no way for these buildings to be enlarged; when the need arose, another *bît-hilani* was built next to (but completely detached from) the first. Numerous sculptures, both in relief and in the round, attest to the art of the 9th and 8th centuries. The decorations on the south Gate A, with lions in full relief and carvings of mythical figures or scenes of every day life and those on Gate D of the inner wall may be ascribed to the reign of Kilamura. On this latter gate the lions are shown in low relief; also worthy of note is the representation of the storm god and the female divinity, Kubaba, holding a mirror in her hand. Also to be ascribed to this same first phase is the monumental statue of some royal or, in the view of some scholars, sacred personage, from Building J in the citadel, which shows peculiar iconographic and stylistic similarities with an analogous work from Carchemish. The second series of reliefs, found inside the citadel, may be dated to the reign of Barrekub. Here, especially in the reliefs of the king, of the scribe, and of the musicians, and on the stele of the queen, a greater technical refinement can be noticed and the spirit with which the subjects have been treated has become freer and less restrained. While borrowing Assyrian models and techniques, the reliefs do not lack originality. They represent the high point touched upon by the figurative arts in the late Hittite kingdoms under the pressure of Assyrian political power and of the obvious force of attraction generated by the more active Northern Mesopotamian centers.

BIBLIOG. F. von Luschan et al., Ausgrabungen in Sendscrhirli, 5 vols., Berlin, 1898–1943; E. Pottier, L'art hittite, IV–V; Zendjirli, Syria, II, 1921, pp. 6–39, 96–119; F. Wachtsmuth, Die Baugeschichte von Sendschirli (Samal), JdI, XXXVIII–XXXIX, 1923–24, pp. 158–69; B. Landsberger, Sam'al, Ankara, 1948; E. Akurgal, Späthethitische Bildkunst, Ankara, 1949; H. Frankfort, The Origin of the Bît Hilani, Iraq, XIV, 1952, pp. 120–31; H. Frankfort, The Art and Architecture of the Ancient Orient, Harmondsworth, 1954, passim; R. Naumann, Architektur Kleinasiens, Tübingen, 1955, passim; M. Vieyra, Hittite Art, 2300–750 B.C., London, 1955, passim, S. Lloyd, Early Anatolia, Harmondsworth, 1956, passim; E. Akurgal and M. Hirmer, The Art of the Hittites (trans. C. McNab), New York, 1962, passim.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

European Turkey. Edirne (Hadrianopolis). Founded by the emperor Hadrian in A.D. 125 at the confluence of three rivers, the city was the center of communications between Thrace and the Bosporus. Except for the temporary periods of occupation by the Bulgarians and the Crusaders, it remained Byzantine until the Turkish conquest in 1361, when it entered a period of prosperity. First capital of the Ottoman Empire, it lost this rank after the fall of Constantinople, though it retained its importance and prosperity up until 1913 when, as a result of the Balkan wars, it lost the provinces which supported it and the population dwindled until the city was reduced



Edirne, plan of the center of the city. Principal monuments: (*a*) site of the Roman city (Hadrianopolis), reconstructed with dotted lines; (*b*) Muradiye Cami; (*c*) Gulbahar Cami; (*d*) Selimiye Cami; (*e*) Uç Serefeli Cami; (*f*) Eski Cami; (*g*) *bedesten*; (*h*) Rüstem Paşa Han; (*i*) Ali Paşa çarsısi; (*j*) Beyazıt II Cami; (*k*) Beyazıt Yıldırım Cami; (*l*) Sahnelek Cami and Gazimihal Cami.

to the size of a small town. Of the Roman-Byzantine city, all that remains is the checkerboard plan. There are, however, a number of important Ottoman monuments: the Yıldırım Cami; the Eski Cami; the Uç Serefeli Cami; the T-shaped Muradiye Cami; the Beyazıt Cami; and the Selimiye Cami, the great architect Sinān's masterpiece, built between 1569 and 1575 by Sultan Selīm II. There are also numerous ruins in Edirne of the ancient *hans* as well as of arcades for commerce and trade (for descriptions of above monuments, see OTTOMAN SCHOOLS; SINĀN).

BIBLIOG. C. Gurlitt, Die Bauten Adrianopels, Orientalisches Archiv, I, II, 1910, pp. 1–4; N. A. Bees, Weiteres über die islamischen Bauten Adrianopels, Z. für Geschichte der Architektur, VIII, 1928, pp. 161–69; O. Aslanapa, Edirnede Osmanlı devri abideleri (Monuments of the Ottoman Period at Edirne), Istanbul, 1949; R. Osman, Edirne Sarayı (The Palace of Edirne), Ankara, 1957.

Istanbul (Byz. Constantinople). The name Istanbul had appeared in the form Stānbūl-Istānbūl in the writings of 10th-century Arabian authors. It entered into common usage after the Turkish conquest (see OTTOMAN SCHOOLS) along with the official form, al-Qusṭanṭīniyyah, Qosṭanṭīniyyeh. A Megarian colony founded about 660 B.C., it took part in the Ionian revolt of 496 B.C. Reoccupied by the Persians, it was delivered by Athens and became a member of the two Delian Leagues. As an enemy of the Macedonians, whose attack it resisted, the city was a faithful ally of Rome until the end of the 2d century A.D., when it was razed to the ground by Septimius Severus for having supported Pescennius Niger.

The original city occupied only the promontory, which contains the ancient palace of the sultan, Hagia Sophia, the Hippodrome, and the remains of the Byzantine Sacrum Palatium (Great Palace of the Emperors). The acropolis, the site of the imperial Ottoman palace, was protected by massive walls, now completely destroyed, while the inland walls of the city, destroyed by Septimius Severus, ran from the Propontis (Sea of Marmora) to the Golden Horn in the neighborhood of the Column of Constantine (the "Burnt Column"), where Roman tombs have, in fact, been found. Nothing remains of the Greek city, which abounded in temples and gymnasiums, or of the city which Septimius Severus built around the re-constructed Acropolis and the Hippodrome (completed by Constantine the Great).

Because of its highly strategic geographical situation, controlling both the Balkans and Anatolia, Constantine chose the city as his new capital. Reconstruction was begun sometime between 324 and 328, and the city was dedicated on May 11, 330. Constantine greatly enlarged the city, dividing it, like Rome, into 14 regions; he also built other walls much farther to the west (running from the present Atatürk Bridge to Isa Kapı Mesçiti), and constructed an imperial palace, a new forum, a praetorium, a capitolium, buildings for the quaestors and the senate, cisterns, baths, and possibly churches as well. All that remains of Constantine's building activities is the great column of prophyry drums which stood in the forum. The walls have completely disappeared and the Sacrum Palatium has also been destroyed; so far, except for a few scattered remains (architectural elements from the forum), none of the buildings has been proved to have been built by Constantine.

In the 4th century Constans II added baths and a library to the great group of buildings erected by Constantine; Julian the Apostate then had a large harbor built with a semicircular stoa, and Valens added several buildings for bathing and an elaborate aqueduct that solved the difficult problem of the city's water supply. Nothing remains of these constructions today except a part of Valens' aqueduct, a two-story limestone structure (much restored). Theodosius I (378–95) gave renewed impetus to the construction of monumental buildings; it was he, in fact, who had a new forum (Forum Tauri) built along the main street (the Mese) to the west of the Forum of Constantine and similar in plan to the Forum of Trajan in Rome, with a spiral column bearing reliefs of historical scenes, and a basilica; nothing remains of this great complex but a few bits and pieces of the decoration from the spiral column and elements from the substructures. Theodosius also built two new royal palaces (the Palatium Placidianum and the Palatium Flaccillanum; destroyed) and installed in the spina of the circus an obelisk from Heliopolis, which still stands on a marble base with low reliefs representing official events and ceremonies. Theodosius' son, Arcadius (395–408), had another forum built along the Mese, exactly like the one his father had built; nothing remains of this forum but the base of the spiral column. Also to be ascribed perhaps to the reign of Theodosius I or of Arcadius is the Arch of Taurus, with a single archway and four columns in the form of enormous Herculean clubs on every impost.

The capital enjoyed its greatest prosperity under Theodosius II (408–450), who greatly enlarged the city area, running a new and very strong wall along the east side (413) and completing the fortifications of the inhabited center by adding another wall along the coastline (439). These new walls enclosed an area so vast that over the centuries the city has never grown beyond the limits of these fortifications. The division into regions was kept, but the 10th, 11th, and 12th regions were greatly extended to include the additional space (the 14th region, traditionally associated with the suburb of Blachernae, became rather more identified with the Hebdomon, royal residence and military headquarters some seven miles from the city). The only remaining part of the works built by Theodosius II, aside from the portico of Hagia Sophia (excavated by A. M. Schneider in 1935) are the buildings excavated on the site identified as that of the imperial palace of the Boukoleion, which was, in fact, originally built by Theodosius II. These buildings included a large courtyard (obviously pertaining to the official quarter of the palatium) with four spacious colonnades (from 29½ ft. to 36 ft. long), which on the southeast side opened onto a large apsed hall preceded by a rectangular vestibule. Just what this group of buildings, adorned with large marble columns and an exceptional mosaic pavement with animals, grotesque scenes, and circus games on a white background, was used for has not yet been determined. The great rectangular Binbirdirek cistern, 210 by 178 ft., with 224 columns and domed crossings, was possibly also built by Theodosius. The Theodosian walls of the city are relatively well preserved, especially those facing inland; constructed with prodigious skill in 413 under the direction of the praetorian Antemius, they consisted of high, strong curtains with protruding towers preceded by a second, lower wall for the archers, it too provided with towers. A deep moat was dug along the double line of walls. The "marble tower," on the cape toward the Sea of Marmara, and the Blachernae fortress (which was to play such an important role in the final centuries of the Empire's existence) on the other cape facing the Golden Horn, served as the two pillars of this line of defense. Among the various gates, which were generally flanked by two towers, the Golden Gate was monumental in character; still standing are the two large tower bases, covered with finely laid marble blocks, and the section between the towers with three large archways, decorated with piers with Corinthian columns and surmounted at one time by a dedicatory inscription and bronze statues.

The topography of the Theodosian city, despite the abundance of literary sources, is largely unknown (very little of it remains).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

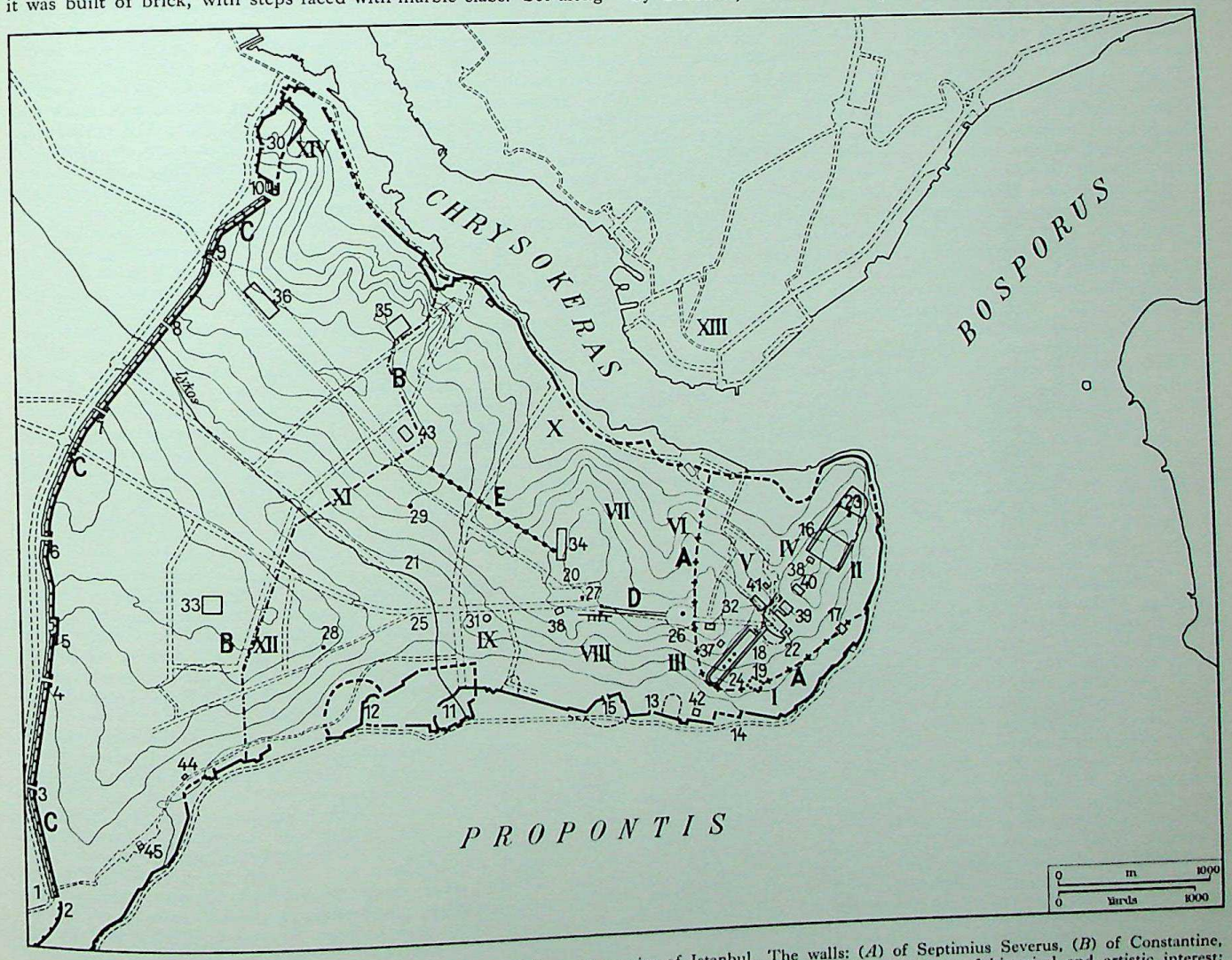
The original main streets can only be detected by means of the ancient sewage system, parts of which occasionally come to light (e.g., under the Divan Yolu).

The post-Theodosian city was enhanced mostly by Christian churches, of which there had been very few up until 440; the *Notitia urbis Constantinopolitanae* lists twelve: ten in the city, one at Galata and one at Hebdomon. The most interesting of the old churches, also in terms of its preservation, is the monastery church, St. John in Studion, which was built in the vicinity of the Golden Gate in about 463. The church, now in ruins, was a large basilica with an apse that was semicircular on the inside and polygonal on the outside; there were galleries along the aisles. All that remains are the encompassing walls, the shafts of the verde antico columns of the central nave, remains of the bases of the capitals and of finely worked white marble architraves (see II, col. 762). Among the other early Christian buildings is the Martyrium of SS. Karpos and Papylos (early 5th cent.), a circular structure situated near the monastery of Studion. Nothing remains of the public monuments of this period, except the Column of Marcianus (decorated base) and the great cistern (near the Sultan Selim Cami) which most scholars identify as the Aspar water tank.

The Hippodrome, whose original structure dates from the great restoration effected by Septimius Severus, was given its final form perhaps at the end of the 5th century; at that time it was enlarged and altered. It was possible to get a clearer idea of the monument's structure after the discoveries made in 1952; some 1,560 ft. in length, it was built of brick, with steps faced with marble slabs. Set along the spina were works of art which included, aside from the obelisk of Theodosius the Great and various fountains, the bronze tripod of Delphi and a second obelisk sheathed in bronze plates; the Diippion, that is, the starting gallery, seems to have been surmounted by a quadriga drawn by the four bronze horses which are now in Venice (S. Marco). Among the commemorative columns the oldest is perhaps the one which stands in the gardens of the Topkapı Saray (Claudius II or Constantine the Great); the column of Constantine the Great consists of superimposed drums of porphyry, ornamented at the joins by bands of laurel leaves. All that remains of the column of Arcadius, as mentioned above, is the base. The column of Marcianus, on the other hand, quite well preserved, is enhanced by a rich Corinthian capital; the base has two Nikae with the laurel crown and chrismon.

During the reign of Justinian (527–595) most of the city was destroyed in the terrible Nika riots (552), but the Emperor provided generously for its reconstruction.

The richest Byzantine churches of the city date from the reign of Justinian. They include SS. Sergius and Bacchus (Küçük Aya Sofya Cami) built by Justinian (527–36) and converted into a mosque during the time of Beyazıt II; it is a square building with inscribed octagon formed by the columns supporting the dome; the peribolus has two stories. The narthex, the six-columned portico and the minaret were added by the Turks. The "Great Church," Hagia Sophia (dedicated to the Divine Wisdom), was originally built in 325 by Constantine on the ruins of a pagan temple, was enlarged by Constans, reconstructed by Theodosius II after the fire of 495,



Constantinople, archaeological plan over the general outlines of the modern city of Istanbul. The walls: (*A*) of Septimius Severus, (*B*) of Constantine, (*C*) of Theodosius II; (*D*) so-called "Mese Street"; (*E*) aqueduct of Valens. Main areas, buildings and monuments of historical and artistic interest: (*1*) Egnatia Street; Gates: (*2*) Golden, (*3*) Xilo Porta (Wooden Gate), (*4*) Pigi, (*5*) so-called "Sigma," or Garikaji, (*6*) Polyandros, (*7*) St. Romano, (*8*) Pempton, (*9*) Charisio or Hadrianopolis, (*10*) royal palace; Harbors: (*11*) Eleutherios, (*12*) Theodosius I; (*13*) Julian (later "Sophia"), (*14*) Boukoleion, (*15*) Kontoskalion; (*16*) site of the acropolis of Greek Byzantium; (*17*) site of the agora, later known as the Augustaion; (*18*) site of the Zeuxippos baths; (*19*) site of the Palatium; (*20*) site of the Philadelphion; (*21*) site of the Amastrion; (*22*) column of Eudoxia; (*23*) column of Claudius the Goth; (*24*) hippodrome; (*25*) site of the Forum of Bovis; (*26*) site of the Constantine Forum and column; (*27*) site of the Theodosius I Forum (Forum of Tauri), arch, column; (*28*) site of the Arcadius Forum and column; (*29*) column of Mercian; (*30*) Blachernae Palace; (*31*) Rotunda of Mirelaion; Water tanks: (*32*) Phifoxene, (*33*) Hagio Mokios, (*34*) probably the nymphaeum of the aqueduct of Valens, (*35*) Aspar, (*36*) Aetius, (*37*) St. Euphemia; (*38*) churches; (*39*) Hagia Sophia; (*40*) St. Irene; (*41*) Theotokos Chalkopatria; (*42*) SS. Sergius and Bacchus; (*43*) Holy Apostles; (*44*) SS. Karpos and Papylos; (*45*) St. John in Studion.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and rebuilt by Justinian (the work was finished in 548) after the fire of 532. It is this last, 6th-century structure, designed by Artemisius of Tralles and Isidore of Miletus, which remains intact today. The dome, which collapsed in 559, was immediately rebuilt on a smaller scale and reinforced on the outside, and then restored in 1374. In 1453 the church was converted into a mosque, and the four minarets, the mihrab, and the great candelabrum beneath the dome were added. Since 1935 the church has been a museum. The building consists of an atrium (remains), an exonarthex and a narthex which lead into the spacious triple nave surmounted by an immense central dome. Women's galleries run along the side aisles and communicate with the loggia of the narthex. The apse is semicircular on the inside and polygonal on the outside. Polychrome marbles, mosaics, carved capitals, and friezes line the inner walls of the building. The aniconic mosaics (especially striking, the large jeweled crosses) date from the time of Justinian, and the ones with figures from the period following the iconoclastic movement. There are gilded bronze doors from the 6th century, and one from the 9th century. The baptistery, standing to the right of the church and square on the outside and octagonal on the inside, was built after the present church of Hagia Sophia; it was later converted into a turbeh. The Byzantine church of St. Irene, said to have been founded on the site of a pagan temple consecrated to Aphrodite, was destroyed in the Nika revolt and reconstructed by Justinian, then largely rebuilt in the 8th century. It is a basilica with two domes and women's galleries. The building was preceded by an atrium and a two-storied narthex. Part of the mosaic decorations from the iconoclast period (large apsidal cross) are still visible (see II, col. 780).

During the 7th and 8th centuries, the Arabs repeatedly laid seige to the city. In 754, iconoclasm led not only to the destruction of images in religious buildings, but also of many precious objects with figural decoration in the field of the lesser arts. In the 9th century, with the end of the iconoclastic period and the rise of the Macedonian dynasty, Constantinople became, for the second time, a political and religious center of the greatest importance. In the 12th century, internal dynastic strife facilitated the interference of the Crusaders into domestic affairs; Constantinople fell into their hands in 1204 and was sacked. The Latin Empire was established, but lasted only up until 1260, when, with the help of the Genoese, Michael VIII Palaeologus reconquered the throne for the Greeks. The empire was subsequently the throne for the Greeks. The empire was subsequently weakened by continual warfare, and fell into the hands of the Turks in 1451. Almost all the churches were then converted in mosques, and minarets were added.

During this period many churches were built, whose exact dates are often difficult to establish. Generally speaking, they were in the cross-in-square form. Among the most important are the Bodrum Cami, perhaps the church of the Myrelaion convent, built by Romanus Lecapenus (920–44); St. John Prodomos ("in Trullo"), a small church with a dome set on a high drum, in ruins; Eski Imaret Cami, the ancient St. Saviour Pantepoptes, a monastery church founded by Anna Delaena, mother of Alexius Comnenus I (1101–18); and the Kalender Cami, possibly the monastery church of Akataleptos, mentioned after 1086. Another Byzantine complex, the Mollazeyrek Cami, consists of two churches with a funerary chapel in the middle. The southern church was dedicated to Christ Pantokrator, and seems to have been begun in 1124 and finished in 1143; the other, a more recent one, was dedicated to the Virgin Eleousa (the Merciful). Particularly interesting in the southern church is the handsome *opus sectile* marble floor, recently restored. Gül Cami, a church of unknown origins, was named in the 14th century after St. Theodosia, a martyr of the iconoclastic persecutions. The Kilise Cami, identified more or less arbitrarily with St. Theodore, appears to have been built, judging by the style, in the 12th or 13th century; the exonarthex is more recent and contains an interesting series of 14th-century mosaics. Koca Mustafa Paşa Cami, the ancient monastery church of St. Andrew in Krisei, was probably built by Theodora, the niece of Michael VIII, in 1284. Fetiye Cami, the ancient Theotokos Pammakaristos, was built about 1300 by Michael Glabas Tarcaniota, with a funerary chapel added slightly later by his wife.

Among the secular buildings, mention should be made of two ruined palaces, one on the walls toward the sea, near SS. Sergius and Bacchus, known as the "Palace of Justinian," but dating from a more recent period (perhaps 10th cent.) and one on the inland walls adjoining the Blachernae enclosure; the Tekfur Saray, traditionally known as the "Palace of Constantine," different in style from the earlier imperial palaces, with polychrome walls of brick and limestone arranged in a checkerboard fashion, stripes and various patterns, and dressed stone archways, also polychrome. Because of the polychrome work, the palace would seem to date from the time of the Palaeologi. Rectangular in plan, it is built on three stories with a portico on the ground floor and large halls on the upper two.

After the Turkish conquest of Constantinople, the city became the favorite of the sultans, who made it, as Istanbul, the most beautiful and richest capital in the Near East. The most important mosques were erected on the crests of the hills which constitute the spine of the city, so that Istanbul, at one time a conglomeration of small houses and gardens, came to be dominated by the domes and minarets of the magnificent imperial mosques, which gave the skyline of the city a distinctive and picturesque character of its own (For a description of the principal mosques of Istanbul, see OTTOMAN SCHOOLS; SINĀN.)

Also commendable in every way is the Turkish civil architecture of Istanbul, starting with the various palaces of the sultans. The first Ottoman monarch, Mehmet II Fatih, built his place of residence, now destroyed, in the Taurus district (Eski Saray, the old palace; 1454–58), and a second palace (Saray-i-cedit) on the ancient acropolis of Byzantium, next to St. Irene's, inside the city walls. This latter palace, enlarged and modified, constitutes the nucleus of the present-day Topkapı Saray complex (see X, col. 865).

The 19th-century Ottoman rulers abandoned the Topkapı Saray in favor of other European-style palaces located in the eastern quarter of the city, on the other side of the Golden Horn. These were Dolmabahçe (1853) and Yıldız. The Dolmabahçe Palace is a sumptuous example of the neoclassic style which was used in Istanbul around the middle of the 19th century, overloaded with marble and stucco decorations, yet, even so, reflecting a rich and vivacious taste; built at Besiktas for Abdülmeçit by the architect Balian, it was the residence of the last sultans and of Kemal Atatürk himself. Abdülhamit II, however, preferred to live in the nearby pavilions of Yıldız. This was originally a modest group of buildings, built at the behest of the Sultana Mihrisah at the beginning of the 19th century. Abdülhamit greatly enlarged the buildings, adding reception halls and living quarters, a small theater, and an art workshop. The fountains of Istanbul are elegant and picturesque expressions of the Ottoman spirit and taste, and some of them are authentic works of art. The richest were not simple public fountains, but pavilions where servants distributed drinks to thirsty passers-by. Most of these pavilions date from the 18th century. The Sultan Ahmet III fountain is near the entrance to the Topkapı Saray, behind Hagia Sophia, and is a square marble kiosk with four small domes protruding around the sides and one in the middle; the water was distributed through bronze gratings set into each corner; it was completed in 1728. The Tophane Fountain is a square marble pavilion; the protruding cornice and lead dome crowned with small towers, also in lead, have been replaced. Other fountains and sebils are not of the freestanding type, but project from walls (the Eyüp, the Sipahi Mehmet, Emin Aga, and others).

The district beyond the Bosporus, Galata-Pera, has undergone considerable development. One of the 14 regions into which the city was originally divided existed here. This was Sicae, or the "Regio tertia-decima," which, because of its position on the Golden Horn, has always been of considerable commercial importance. In 1303, the Genoese, unlike the Venetians and the other colonies which had settled down on the opposite shore of the Golden Horn, were granted it in concession and then (1349) obtained permission to enlarge it (building, among other things, the Tower of Galata, the massive bastion which still dominates the entire quarter); other expansions occurred in 1352, 1387, 1397, and 1404, until it covered a large area, from the district around the Atatürk Bridge to Sishane and Tophane, with residential quarters that extended from the Tower of Galata down to the shores of the Bosporus and the Golden Horn. After the Turkish conquest, the Genoese walls serving no further purpose, the area beyond them was quickly built up with private and public buildings (the Tekke of the Whirling Dervishes, ca. 1492; the Galata Saray, built by the vizier Ibrahim Paşa in 1526 as a school for pages), but it was later to be occupied mostly by various European embassies, quartered next to each other on more or less large tracts of land granted by the state. This same district was then inhabited almost exclusively by Europeans resident in Istanbul and Turkish citizens of Greek, Armenian, and Palestinian origin, who continued to spread, endowing the quarter with a distinctive cosmopolitan flavor. In the 20th century these colonies of foreigners and alien-born citizens have decreased to a minority and are tending to decrease more and more, while new quarters thronged with modern homes have sprung up, inhabited by people who have moved either from other Turkish cities or from Stanbul itself (that is, from the old city on the other side of the Bosporus). These parts of the city, as well as the suburban centers (especially noteworthy, the ones along the shores of the Bosporus), possess few ancient monuments, but offer outstanding examples of 19th- and 20th-century architecture.

Foremost among the neoclassic buildings are those designed by Gaspare and Giuseppe Fossati, and in particular the Russian Embassy, an imposing building facing across a courtyard of honor onto the Istiklâl Caddesi. This building inspired local artists in the creation of a particular style, the so-called "Turkish Neoclassic," notable examples of which are the above-mentioned Dolmabahçe

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Istanbul, plan [including Üsküdar (Scutari)]. Principal monuments: (1) Eyüp Cami; (2) Hagia Sophia; (3) Sultan Ahmet III Fountain; (4) Vilâyet Cami; (5) Topkapı Saray; (6) Sultan Ahmet Cami and Mosaics Museum; (7) Sokollu Mehmet Paşa Cami; (8) Theodosian walls; (9) Binbirdirek cistern; (10) Yerebatan Saray; (11) Nuru Osmaniye Cami and Mahmut Paşa Cami; (12) Bedesten (Great Bazaar); (13) Beyazıt Cami; (14) Kilise Cami; (15) Şehzade Cami; (16) Süleymaniye Cami and Museum of Turkish Art; (17) Mollazeyrek Cami; (18) Kalender Cami (of the Akataleptos Monastery); (19) Mısır Carısı ("Egyptian Bazaar"); (20) Rüstem Paşa Cami; (21) Yeni Cami; (22) Eski Imaret Cami; (23) Mehmet Fatih Cami; (24) Sultan Salim Cami; (25) Orthodox Patriarchy, St. George, and St. Mary Maucliotissa; (26) Gül Cami (St. Theodosia); (27) buildings in the Blachernae district; (28) Fetiye Cami and St. John Prodomos (in Trullo); (29) Tekfur Saray ("Palace of Constantine"); (30) Kariye Cami (Church of the Chora); (31) Bodrum Cami (in the Myrelaion Monastery); (32) Valide Cami; (33) Lâleli Cami; (34) Koca Mustafa Paşa Cami (St. Andrew in Krisei); (35) Yedi Kule (Castle of the Seven Towers); (36) Sulu Monastir and Sancaktar Mesçiti; (37) Imrahor Cami (St. John in Studion); (38) Galata Saray; (39) Galata Tower; (40) Yıldız Park; (41) Bourse; (42) Arap Cami (St. Paul); (43 Mehmet Paşa (Azap Kapı) Cami; (44) Tophane Fountain and Kılıc Ali Paşa Cami; (45) Bezmialem Sultan Cami and Naval Museum; (46) Sinān Paşa Cami; (47) Dolmabahçe Saray; (48) Piyale Paşa Cami; (49) Davut Paşa Cami and Hekimoğlu Ali Paşa Cami; (50) Isa Kapı Mesçiti and St. George of the Cypresses; (51) Monastir Mesçiti and Ahmet Paşa Mesçiti; (52) Mihr-u-Mah Cami; (53) Fenari Isa Cami; (54) Gazanfer Ağa Medrese (Municipal Museum); (55) University; (56) Cinili Cami; (57) Selimiye Cami; (58) Iskele Cami and Yeni Valide Cami.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and Yıldız palaces; they have marble façades covered with carved decorations consisting of a closely knit intermingling of classical and Oriental elements. An interesting group of modern buildings was built by the Italian architect Raimondo d'Aronco in 1894–1900. Much of it was torn down; all that remain are the strikingly beautiful Botter house in Pera Street, the summer headquarters of the Italian ambassador at Tarabya, and a few lesser buildings. (For descriptions of bazaars and other early commercial and military installations, see OTTOMAN SCHOOLS.)

SOURCES. Besides the two great collections of Byzantine writers, that of Paris, 1648 ff. (repr. Venice, 1722–33) and that of Bonn, see in particular: P. Gyllius, De Bosporo, Thracio libri tres, Lyon, 1561; P. Gyllius, De Topographia Constantinopoleos et de illius antiquitatibus libri quattuor, Lyon, 1561; C. du Fresne du Cange, Constantinopolis christiana, Paris, 1682; A. Banduri, Imperium orientale, 2 vols., Paris, 1711; W. Stirling Maxwell, The Turks in 1533, London, 1873; E. Oberhummer, Konstantinopel unter Suleiman dem Grossen, aufgenommen im Jahre 1559 durch M. Lorichs aus Flensburg, Munich, 1902; A. Boppe, Les peintres du Bosphore au XVIIIe siècle, Paris, 1911; J. Ebersolt, Constantinople byzantine et les voyageurs du Levant, Paris, 1918; H. Freshfield, Notes on a Vellum Album Containing Some Original Sketches of Public Buildings and Monuments Drawn by a German Artist Who Visited Constantinople in 1574, Archaeologia, LXXII, 1922, pp. 87–104; Constantine VII Porphyrogenitus, Ceremonies, ed. and trans. A. Vogt (incomplete), 2 vols., Paris, 1935–40; S. G. Mercati, Santuari e reliquie constantinopolitane secondo il codice Ottoboniano latino 169 prima della conquista latina (1204), Rend PontAcc, XII, 1936, pp. 133–56; S. Cirac, Tres monasterios de Constantinopla visitados por Españoles en el año 1403, REByz, XIX, 1961, pp. 358–81; F. Babinger, Eine unbemerkte holländische Grossansicht von Konstantinopel (um 1665), Nachr. Akad. der Wissenschaften in Göttingen, Philologisch-historische Klasse, 1962, pp. 81–90.

BIBLIOG. *a. General*: C. C. da Carbognano, Descrizione topografica dello stato presente di Constantinopoli, Bassano, 1794; J. von Hammer, Konstantinopel und der Bosporos, 2 vols., Pest, 1822; A. F. Conte Andréossy, Constantinople et le Bospore de Trace, Paris, 1828; Konstantios, *Κωνσταντινιάς*, Constantinople, 1844 (Fr. trans., 1846); A. G. Paspatis, *Βυζαντιναὶ Μελεται*, Constantinople, 1877; A. Van Millingen, Byzantine Constantinople, London, 1899; E. Oberhummer and W. Kubitschek, RE, III, 1899, cols. 1116–58; E. Oberhummer, RE, IV, 1901, cols. 963–1013; A. Van Millingen, Constantinople, London, 1906; D. H. Leclercq, Cabrol-Leclercq, II, 1910, cols. 1363–1454; C. Gurlitt, Die Baukunst Konstantinopels, 3 vols., Berlin, 1912; E. Mamboury, Byzance, Constantinople, Istanbul: Guide touristique, Istanbul, 1925 (and later eds.); K. Wulzinger, Byzantinische Baudenkmäler zu Konstantinopel, Hannover, 1925; E. Mamboury, Les fouilles byzantines: Istanbul, Byzantion, XI, 1936, pp. 229–83, XIII, 1938, pp. 301–10, XXI, 1951, pp. 425–59; A. M. Schneider, Byzanz, Berlin, 1936; R. Mayer, Byzantion, Konstantinopolis, Istanbul: Eine genetische Stadtgeographie (Denkschriften der Akad. der Wissenschaften in Wien, Phil.-hist. Klasse, LXXI, 3), Vienna, 1943; F. Dölger, Byzanz und die europäische Staatenwelt, Brunn, 1944; A. M. Mansel, Türkiyenin arkeoloji . . . bibliografya, Istanbul, 1948, pp. 435–515; R. Janin, Constantinople byzantine, Paris, 1950; V. P. Nevskaya, Byzanz in der klassischen und hellenistischen Epoche (trans. H. Bruschwitz), Leipzig, 1955; R. Liddell, Byzantium and Istanbul, London, 1956; G. Downey, Constantinople in the Age of Justinian, Norman, Okla., 1960; A. M. Schneider, Konstantinople, Berlin, Mainz, 1962; S. Eyice, Sin devir Bizans mimârisi (Late Byzantine Architecture), Istanbul, 1963; P. Sherrard, Constantinople, New York, London, 1963; V. Hell, Istanbul und der vordere Turkei, 2d ed., Tübingen, 1966; G. Becatti and F. W. Deichmann, EAA, s.v. Constantinopoli (bibliog.). *b. Excavations and monuments*: T. Preger, Studien zur Topographie Konstantinopels, Byz. Z., XIV, 1905, pp. 272–80, XIX, 1910, pp. 450–61, XXI, 1912, pp. 461–71; J. B. Papadopoulos, Les palais et les églises des Blachernes, Athens, 1928; M. Schede, Archäologische Funde: Konstantinopel, AAnz, 1929, cols. 325–68, 1930, cols. 432–44; E. Dalleggio d'Alessio, Les fouilles archéologiques à la colonne de Constantin à Constantinople, Echos d'Orient, XXXIX, 1930, pp. 339–41; D. Talbot Rice, Excavations at Bodrum camii: 1930, Byzantion, VIII, 1933, pp. 151–74; E. Mamboury, Un nouvel élément pour la topographie de l'antique Byzance, AAnz, 1934, cols. 50–61; M. I. Nomides, Carte topographique et archéol. de Constantinople au moyen âge, Galata, 1938; R. Demangel and E. Mamboury, Le quartier des Manganes et la première Région de Constantinople, Paris, 1939; R. Janin, La topographie de Constantinople byzantine: études et découvertes (1918–38), Echos d'Orient, XXXVIII, 1939, pp. 118–50; A. M. Schneider, Topographica, Byz. Z., XLI, 1941, pp. 60–69; R. Janin, Note sur les régions de Constantinople byzantine, REByz, III, 1945, pp. 29–42; R. Janin, Topographie de Constantinople byzantine: quelques quartiers mal connus, Memorial L. Petit, Paris, 1948, pp. 218–32; G. Millet, Le Forum d'Arcadius, Memorial L. Petit, Paris, 1948, pp. 361–65; G. Downey, Justinian as a Builder, AB, XXXII, 1950, pp. 262–66; R. Guilland, A propos du Livre des Cérémonies de Constantin VII Porphyrogénète: Le Delphax, Mél. Henri Gregoire, II (Ann. Inst. de Phil. et d'H. O., X), Brussels, 1950, pp. 295–306; R. Janin, La topographie de Constantinople byzantine: études et découvertes (1938–50), REByz, VIII, 1950, pp. 197–214; C. A. Mango, Le Diippion, REByz, VIII, 1950, pp. 152–61; A. M. Schneider, Regionen und Quartiers in Konstantinopel, Kleinasien und Byzanz, Berlin, 1950, pp. 149–58; R. Guilland, Autour du Livre des Cérémonies de Constantin VII Porphyrogénète: La Mésè ou Régia, Actes VI Cong. int. des ét. byz. (1948), II, Paris, 1951, pp. 171–82; R. Janin, Les sources de la topographie de Constantinople byzantine, Actes VI Cong. int. des ét. byz. (1948), II, Paris, 1951, pp. 197–200; E. Mamboury, Contribution à la topographie générale de Constantinople, Actes VI Cong. int. des ét. byz. (1948), II, Paris, 1951, pp. 243–53; A. M. Schneider, Die Blachernen, Oriens, IV, 1951, pp. 82–120; G. Downey, Notes on the Topography of Constantinople, AB, XXXIV, 1952, pp. 235–36; R. Janin, Du Forum Bovis au Forum Tauri: étude de topographie, REByz, XIII, 1955, pp 85–108; E Mamboury, Le forum de Constantin, la Chapelle de St. Constantin et les mystères de la Colonne Brulée, Actes 9th Int. Cong. of Byz. S., I, Athens, 1955, pp. 275–80; H. E. del Medico, A propos d'une mosaique découverte à Istanbul, Byzantinoslavica, XVI, 1955, pp. 255–64; P. Verzone, Quarta decima Regio, Festschrift Sas-Zaloziecky, Graz, 1956, pp. 174–77; P. Verzone, Il "tetrapilo aureo," MALinc, XLIII, 1956, cols. 125–204; J. Lafontaine, Fouilles et découvertes byzantines à Istanbul de 1952 à 1960, Byzantion, XXIX–XXX, 1960, pp. 339–86. *c. Foundation and dedication of the city*: E. Gerland, Byzantion und die Gründung der Stadt Konstantinopel, Byz.-neugriechische Jhb., X, 1934, pp. 93–105 (bibliog.); A. Alföldi, On the Foundation of Constantinople: A Few Notes, JTS, XXXVII, 1947, pp. 10–16; A. Alföldi, Die Gründung von Konstantinopel, Atlantis, XXV, 1953, pp. 155–59; E. Manni, La fondazione di Constantinopoli in un passo del Chronicon Paschale, Atti VIII Cong. int. di s. biz. (1951), I, Rome, 1953 (S. Bizantini e neoellenici, VII), pp. 416–19; G. Pugliese, Una disposizione di Costantino per favorire lo sviluppo e edilizio di Costantinopoli, S. in onore di Pietro de Francisci, III, Milan, 1956, pp. 373–404; A. Erzen, Über die Gründung und den Namen der Stadt Istanbul, Akten, XI. Int. Byz. Kong. (1958), Munich, 1960, pp. 144–49. *d. Walls and gates*: J. Strzygowski, Das Goldene Tor in Konstantinopel, JdI, VIII, 1893, pp. 1–39; S. Salaville, Note de topographie constantinopolitaine: la Porte Basilikè, Echos d'Orient, XII, 1909, pp. 262–64; A. Zanotti, Autour des murs de Constantinople, Paris, 1911; E. Weigand, Neue Untersuchungen über das Goldene Tor in Konstantinopel, AM, XXXIX, 1914, pp. 1–64; G. Gerola, Porta Aurea - Porta Aureola, Atti R. Ist. Veneto, LXXXIX, 1929–30, pp. 391–419; H. Lietzmann, Die Landmauer von Konstantinopel, Berlin, 1929; T. Macridy Bey and H. Casson, Excavations at the Golden Gate, Constantinople, Archaeologia, LXXXI, 1931, pp. 63–84; R. Janin, Etudes de topographie byzantine, Echos d'Orient, XXXV, 1936, pp. 205–19, XXXVI, 1937, pp. 129–56, XXXVII, 1938, pp. 73–88; H. von Schonebeck, Die griechische Stadtmauer von Byzanz, AAnz, 1936, cols. 36–52; F. Krischen, B. Meyer-Plath, and A. M. Schneider, Die Landmauer von Konstantinopel, 2 vols., Berlin, 1938–43; B. Meyer-Plath, Das Goldene Tor in Konstantinopel, Mnemosynon Theodor Wiegand, Munich, 1938, pp. 87–98; A. M. Schneider, Die *πύλη τοῦ Καλάργου* der Landmauer von Konstantinopel, Byz. Z., XXXVIII, 1938, p. 408; R. Janin, Topographie de Constantinople byzantine: le port Sophien et les quartiers environnants, REByz, I, 1943, pp. 116–51; A. M. Schneider, Mauern und Tore am Goldenen Horn zu Konstantinopel, Nachr. Akad. der Wissenschaften in Göttingen, Phil.-hist. Klasse, 1950, 5, pp. 65–107; P. Schweinfurth, Le mur terrestre de l'ancienne Constantinople et sa porte dorée, Belleten, XVI, 1952, pp. 261–71; R. Guilland, Les ports de Byzance sur la Propontide, Byzantion, XXIII, 1954, pp. 181–238; F. Dirimtekin, Les murailles (d'Istanbul) de Constantinopolis, Corsi di cultura sull'arte ravennate e bizantina, XII, 1965, pp. 211–24. *e. The Great Palace*: J. Labarte, Le Palais impérial de Constantinople et ses abords, Paris, 1861; J. Ebersolt, Le Grand Palais de Constaninople et le Livre des Cérémonies, Paris, 1910; J. Ebersolt and A. Thiers, Les ruines et les substructions du grand palais des empereurs byzantines, CRAI, 1913, pp. 31–38; E. Mamboury and T. Wiegand, Die Kaiserpaläste von Konstantnopel, Berlin, Leipzig, 1934; A. Vogt, L'Hippodrome "couvert," Echos d'Orient, XXXVII, 1938, pp. 23–35; G. Brett et al., The Great Palace of the Byzantine Emperors, London, 1947; R. Guilland, Autour du Livre des Cérémonies: L'Augusteus, la Main d'Or et l'Onopodion, REByz, VI, 1948, pp. 167–80; R. Guilland, Constantinople byzantine: le Boucoléon, la plage du Boucoléon, Byzantinoslavica, X, 1949, pp. 16–27; R. Guilland, Les palais du Boukoléon, Byzantinoslavica, XI, 1950, pp. 61–71, XII, 1951, pp. 210–37, XIII, 1952, pp. 101–36; C. A. Mango, Autour du Grand Palais de Constantinople, CahA, V, 1951, pp. 179–86; R. Guilland, La Basilique, la Bibliothèque et l'Octogone de Byzance, Mél. d'histoire littéraire et de bibliographie offerts à Jean Bonneret, Paris, 1954, pp. 97–107; S. Miranda, El gran Palacio Sagrado de Bizancio, Mexico City, 1955; D. Talbot Rice, The Great Palace of the Byzantine Emperors: Second Report, Edinburgh, 1958; C. A. Mango, The Brazen House, Copenhagen, 1959; R. Guilland, Etudes sur le Grand Palais de Constantinople: Les Nouméra, REByz, XIX, 1961, pp. 401–18. *f. The Hippodrome*: O. Frick, Die Inschriften der Schlangensäule im Hippodrom zu Konstantinopel, AZ, XIV, 1856, pp. 217–24; O. Frick and E. Curtius, Ausgrabung der Schlangensäule auf dem Hippodrom zu Konstantinopel, Monatsberichte der K. Akad. Preuss. der Wissenschaften zu Berlin, 1856, pp. 162–81, 286–87; A. Rambaud, De byzantino Hippodromo et de circensibus factionibus, Paris, 1870; F. W. Unger, Zur Geschichte der Schlangensäule, Nahrc. der Gesellschaft der Wissenschaften zu Göttingen, 1876, pp. 397–401; E. Grosvenor, The Hippodrome of Constantinople, London, 1889; B. Paluka, Die Säule Konstantins VII Porphyrogennetos auf dem Hippodrom zu Konstantinopel, Byz. Z., V, 1896, pp. 158–59; T. Wiegand, Der Hippodrom von Konstantinopel zur Zeit Suleimans des Grossen, JdI, XXIII, 1908, pp. 1–11; A. Rambaud, Le sport et l'Hippodrome à Constantinople, in Etudes sur l'histoire byzantine, 3d ed., Paris, 1922, pp. 3–61; S. Casson and D. Talbot Rice, ed., Preliminary Report upon the Excavations Carried Out in and near the Hippodrome of Constantinople (1927), London, 1928; S. Casson and D. Talbot Rice, eds., Second Report upon the Excavations . . . near the Hippodrome of Constantinople (1928), London, 1929; K. Kluge, Die Gestaltung des Erzes in der archaisch-griechischen Kunst, JdI, XLIV, 1929, pp. 1–30; A. Piganiol, La loge impériale de l'Hippodrome de Byzance, Actes IIe Cong. int. des ét. byz. (1927), Belgrade, 1929, p. 56; S. Casson, Les fouilles à l'hippodrome de Constantinople, GBA, III, 1930, pp. 213–42; E. Mamboury and T. Wiegand, Die Kaiserpaläste von Konstantinopel, Berlin, 1934, pp. 39–53; G. Bruns, Der Obelisk und seine Basis auf dem Hippodrom zu Konstantinopel, Istanbul, 1935; A. Vogt, L'hippodrome de Constantinople, Byzantion, X, 1935, pp. 471–88; A. Piganiol, La loge impériale de l'hippodrome de Byzance et le problème de l'hippodrome couvert, Byzantion, XI, 1936, pp. 383–90; R. Guilland, The Hippodrome at Byzantium, Speculum, XXIII, 1948, pp. 676–82; A. A. Vasiliev, The Monument of Porphyrius in the Hippodrome at Constantinople, Dumbarton Oaks Pap., IV, 1948, pp. 27–49; C. A. Mango, L'Euripe de l'hippodrome de

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Constantinople, REByz, VII, 1949, pp. 180–93; R. Guilland, Les dèmes, Mél. Louis Halphen, Paris, 1950, pp. 297–306; R. Guilland, L'Hippodrome de Byzance, Misc. Giovanni Galbiati, III, Milan, 1951, pp. 205–18; R. Guilland, l'Hippodrome: L'escalier privé en colimaçon, Jhb. ö. byz. Gesellschaft, II, 1952, pp. 3–12; R. Guilland, Les portes de l'Hippodrome, Jhb. ö byz. Gesellschaft, V, 1955, pp. 51–85; R. Guilland, Etudes sur l'hippodrome de Byzance: Le palais du Kathisma, Byzantinoslavica, XVIII, 1957, pp. 39–76; R. Guilland, Etudes sur l'hippodrome de Byzance, Byzantinoslavica, XXIII, 1962, pp. 203–30. *g. The ruins of St. Euphemia and surrounding buildings*: A. M. Schneider, Grabung im Bereich des Euphemia-Martyrions zu Konstantinopel, AAnz, 1943, cols. 255–89; A. M. Schneider, Das Martyrion der Hl. Euphemia beim Hippodrom zu Konstantinopel, Byz. Z., XLII, 1949, pp. 178–85; R. Duyuran, Report on Excavations on the Site of the New Palace of Justice at Istanbul, Ann. Archaeol. Mus. of Istanbul, V, 1952, pp. 33–38, VI, 1953, pp. 21–27, 74–80; I. Lavin, House of the Lord: Aspects of the Role of Palace Triclinia in the Architecture of Late Antiquity and the Early Middle Ages, AB, XLIV, 1962, pp. 1–27; R. Naumann and H. Belting, Die Euphemia-kirche am Hippodrom zu Istanbul und ihre Fresken, Berlin, 1966. *h. St. Sophia*: G.-J. Grelot, Rélation nouvelle d'un voyage de Constantinople, Paris, 1680; G. Fossati, Aya Sofia, London, 1852; A. Choisy, L'art de bâtir chez les Byzantins, Paris, 1883; W. Lethaby and H. Swainson, The Church of Sancta Sophia: A Study of Byzantine Building, London, 1894; G. Millet, La coupole primitive de Sainte-Sophie, Rev. belge de philologie et d'h., II, 1923, pp. 599–617; G. Andreades, Die Sophienkathedrale von Konstantinopel, Kunstwissenschaftliche Forsch., I, 1931, pp. 33–94; E. Swift, The Latins at Hagia-Sophia, AJA, XXXIX, 1935, pp. 458–74; W. Sas-Zaloziecky, Die Sophienkirche in Konstantinopel, Rome, 1936; K. J. Conant, The First Dome of St. Sophia and Its Rebuilding, AJA, XLIII, 1939, pp. 589–91; A. M. Shcneider, Die Hagia Sophia zu Konstantinopel, Berlin, 1939; E. Swift, Hagia Sophia, New York, 1940; A. M. Schneider, Die Grabung in Westhof der Sophienkirche zu Istanbul, Istanbuler Forsch., XII, 1941, pp. 1–47; W. Emerson and R. L. Van Nice, Haghia Sophia, Istanbul: Preliminary Report of a Recent Examination of the Structure, AJA, XLVIII, 1943, pp. 403–36; W. Emerson and R. L. Van Nice, Haghia Sophia and the First Minaret Erected after the Conquest of Constantinople, AJA, LIV, 1950, pp. 28–40; N. Mavrodinov, L'origine de la construction et du plan de Sainte-Sophie à Constantinople, Fouilles et recherches Mus. nat. bulgare, IV, 1950, pp. 149–65; W. Emerson and R. L. Van Nice, Haghia Sophia: The Collapse of the First Dome, Archaeology, IV, 1951, pp. 94–103; W. Emerson and R. L. Van Nice, Haghia Sophia: The Construction of the Second Dome and Its Later Repairs, Archaeology, IV, 1951, pp. 163–71; N. Mavrodinov, L'origine de la construction et du plan de Sainte-Sophie à Constantinople, Actes VI Cong. int. des ét. byz. (1948), II, Paris, 1951, pp. 277–98; A. M. Schneider, Sophienkirche und Sultanmoschee, Byz. Z., XLIV, 1951, pp. 509–16; P. A. Michelis, A propos des plans d'Haghia Sophia, Akten X. Int. Byz. Kong. (1958), Munich, 1960, pp. 376–87; P. A. Underwood and E. J. W. Hawkins, The Mosaics of Hagia Sophia at Istanbul, Dumbarton Oaks Pap., XV, 1961, pp. 187–217; C. A. Mango, Materials for the Study of the Mosaics of St. Sophia at Istanbul, Washington, D.C., 1962; P. A. Michelis, L'ésthétique d'Hagia Sophia, Corsi di cultura sull'arte ravennate e bizantina, X, 1963, pp. 207–76. *i. Other churches*: W. Salzenberg, Altchristliche Baudenkmäler von Konstantinopel, Berlin, 1854; W. S. George, The Church of Saint Eirene at Constantinople, Oxford, 1912; A. Van Millingen, Byzantine Churches in Constantinople, London, 1912; J. Ebersolt and A. Thiers, Les églises de Constantople, Paris, 1913; S. Eyice, Un type architectural peu connu à l'époque des Paléologues à Byzance, Anadolu, III, 1955–59, pp. 223–34; F. W. Deichmann, Studien zur Architektur Konstantinoples in V. und VI. Jahrhundert, Baden-Baden, 1956; P. Sanpaolesi, La chiesa dei SS. Sergio e Bacco a Costantinopoli, RIASA, N.S., X, 1961, pp. 116–80; T. Macridy et al., The Monastery of Lips (Fenari Isa Camii) at Istanbul, Dumbarton Oaks Pap., XVIII, 1964, pp. 249–315; P. A. Underwood, The Karije Djami, 2 vols., New York, London, 1966; *j. Aqueducts and cisterns*: P. Forchheimer and J. Strzygowski, Die Byzantinische Wasserbehälter von Konstantinopel, Vienna, 1893; K. O. Dalman, Der Valens-Aquäduct, Bamberg, 1933; R. Janin, Etudes de topographie byzantine: Les citernes d'Aétius, d'Aspar et de Bonus, REByz, I, 1943, pp. 85–115. *k. Ottoman period*: 1) *General*: M. Rā'if, Mir'āt-i Istanbul (Mirror of Istanbul), I, Istanbul, 1314 A.H.; C. Gurlitt, Zur Topographie Konstantinopels im 16. Jahrhundert, Orientalisches Archiv., II, 1911–12, pp. 1–9, 51–64; C. Gurlitt, Die Baukunst Konstantinopels, 3 vols., Berlin, 1912; M. Žiyā, Istanbul ve Boğaziči (Istanbul and the Bosporus), Istanbul, 1326 A. H.; C. Esad, Eski Galata (Old Galata), Istanbul, 1329 A.H.; A. Refik, Hicri on ikinci asirda Istanbul hayatı (Life in Istanbul in the 12th Century A.H.), Istanbul, 1930; A. Refik, Hicri on birinci asirda Istanbul hayatı (Life in Istanbul in the 11th Century A.H.), Istanbul, 1931; A. Refik, Hicri on üçüncü asirda Istanbul hayatı (Life in Istanbul in the 13th Century A.H.), Istanbul, 1932; A. S. Ülgen, Istanbul ve eski eserleri (Istanbul and Its Ancient Monuments), Istanbul, 1933; A. Refik, On altıncı asirda Istanbul hayatı (Life in Istanbul in the 16th Century A.H.), 2d ed., Istanbul, 1935; E. H. Ayverdi, Fatih devri mimarisi (Architecture of the Conqueror's Period), Istanbul, 1953; D. Kuban, Türk Barok mimarisi hakkında bir deneme (Essay on Turkish Baroque Architecture), Istanbul, 1954; K. A. C. Creswell, A Bibliography of the Architecture, Arts and Crafts of Islam, London, 1961, cols. 448–59. 2) *Mosques*: Ḥāfiz Ḥüseyin Ayvansarārı, Ḥadıqatu'l-ǧevāmi (Garden of Mosques), Istanbul, 1281 A.H. (trans., J. de Hammer, Histoire de l'Empire ottoman, XVIII, Paris, 1841, pp. 1–109); M. Aga-Oglu, Die Gestalt der alten Mohammedije in Konstantinopel und ihr Baumeister, Belvedere, IX–X, 1926, pp. 82–94; A. Gabriel, Les Mosquées de Constantinople, Syria, VII, 1926, pp. 359–419; M. Aga-Oglu, The Fatih Mosque at Constantinople, AB, XII, 1930, pp. 179–95; A. M. Charles, Hagia Sophia and the Great Imperial Mosques, AB, XII, 1930, pp. 321–44; K. Wulzinger, Die Apostelkirche und die Mehmediye zu Konstantinopel, Byzantion, VII, 1932, pp. 7–39; H. Edhem, Nos mosquées de Stamboul, Istanbul, 1934; Yedigun nesriyati, Istanbul abideleri, Istanbul, 1940; I. H. Konyali, Mimar Koka Sinan' in eserleri (Monuments of the Architect Koca Sinan), Istanbul, 1950; D. Gebhard, The Problem of Space in the Ottoman Mosque, AB, XLV, 1963, pp. 271–75. 3) *Palaces*: 'A. Šeref, Topqapī sarāyi hümāyunu (The Imperial Palace of Topkapı), Ta'rīkh-i 'Osmānī Eng̃ümeni Meğmū'asī, II, 5–12, Istanbul, 1910–11; T. Penzer, The Harem, London, 1934; Guide to the Museum of Topkapi Sarai, Istanbul, 1936; I. H. Konyali, Istanbul sarayalari (Palaces of Istanbul), 1943; Y. Öz, Topkapı sarayında Fatih Sultan Mehmet II: ye ait eserler (Works Pertaining to the Conqueror Sultan Muhammad II in the Topkapi Palace), Ankara, 1953; Melek Celâl, Le vieux Sérail des Sultans, Istanbul, 1959. 4) *Baths, fountains*: H. Glück, Die Bäder, Konstantinopels, Vienna, 1921; I. Kumbaracilar, Istanbul sebilleri (Fountains of Istanbul), Istanbul, 1938; I. H. Tanışık, Istanbul çeşmeleri (Fountains of Istanbul), 2 vols., Istanbul, 1943–45; S. Nirven, Istanbul suları (Waters of Istanbul), Istanbul, 1946. 5) *Castles*: A. Gabriel, Les châteaux turcs du Bosphore, Paris, 1943. 6) *Suburbs*: R. Demangel, Contribution à la topographie de l'Hebdomon, Paris, 1945; E. Mamboury, Les îles des Princes, Ankara, 1945; R. Janin, L'église byzantine sur les rives du Bosphore (côte asiatique), REByz, XII, 1954, pp. 69–99. 7) *Periodicals*: La Turquie Kemaliste, 1–49, Ankara, 1934–48; Vakiflar Dergisi, Istanbul, 1938 ff.; Guzel Sanatlar Dergisi, Istanbul, 1939–49; Turkiye, 1–3, Ankara, 1952–54.

Paolo VERZONE

(with assistance for some entries of M. ALOSI CATELLI, O. H. HALPAHT'IAN, P. E. PECORELLA, and M. TORELLI).

Illustrations: 17 figs. in text.

TURKIC ART. The earliest historical phase of the artistic culture of the nomadic Turkic peoples, which belongs among the steppe cultures (q.v.), can be dated with comparative certainty on the basis of written sources and archaeological finds (see also ASIA, CENTRAL; MONGOLIAN ART; SIBERIAN CULTURES). In the 9th century, with the conversion of the Turki to Islam (q.v.), this ancient artistic heritage was partly incorporated in the Islamic culture, whose ornamental repertory it enriched (see MAMELUKE ART; OTTOMAN SCHOOLS; SELJUK ART).

SUMMARY. Historical introduction (col. 438). Jewelry and minor arts (col. 441). Sculpture (col. 443). Petroglyphs (col. 446). Historicultural contacts (col. 448).

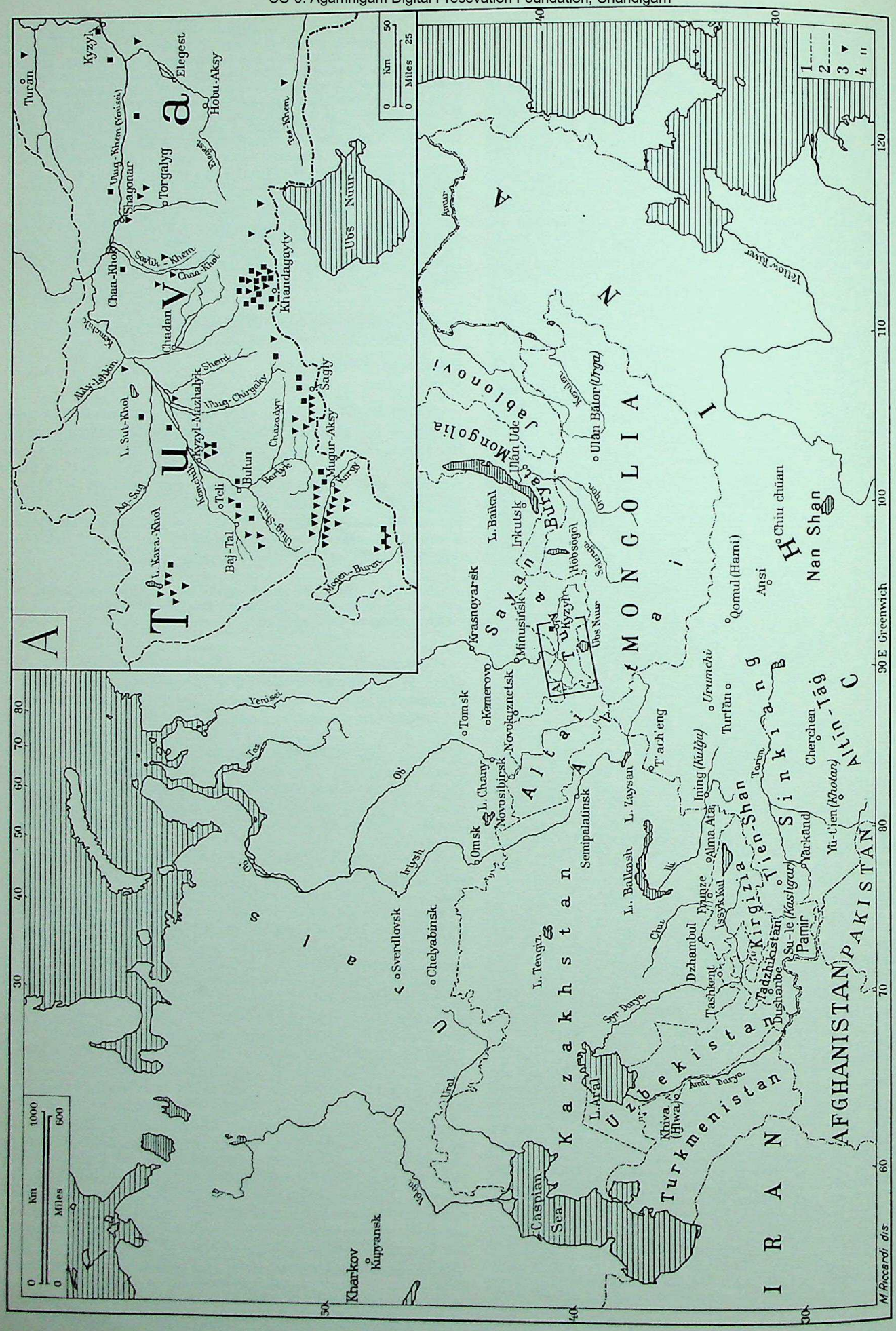
HISTORICAL INTRODUCTION. The ancient period (6th–10th cent.) in the history of the Turkic peoples was marked by the existence of powerful nomad states in Central Asia and farther west, following the consolidation of large ethnic groups, among which were the ancestors of the modern Tuvintsy, Altaitsy, Khakasy, Yakuty, Kirghiz, Kazakhs, Turkmen, Uzbeks, Bashkirs, Uigurs, and other large and small national groups now living in Central and West Asia and in southern Siberia. This period witnessed the crystallization not only of the ethnologic aspects but also of the basic cultural heritage of the Turkic peoples.

From the archaeological and historicultural standpoint, the early period of the various widely scattered Turkic-language groups is characterized by the emergence of common features in their material culture (weapons, trappings, ornaments, vessels, etc.) and a sameness in the fundamental peculiarities of their burial ritual (a basic variant being the burial with a horse), which is regarded as a touchstone in ethnology.

The old Turkic tribes first appeared on the historical scene in the middle of the 6th century, when they were mentioned under the Chinese form, Tu-Kiu. The nucleus of these tribes was formed by a cattle-raising nomadic people known as the Altai Turki, who excelled in the smelting of iron ore and manufactured weapons on what might be considered a large scale for that time. By 546 the Turki had become so strong that they included in their ranks the Gaogü (Tele), a tribe consisting of some fifty thousand families. In 552 the chieftain of the new confederation, Kagan Bumin, launched an attack against the Zhuan-Zuan, who had until then dominated Central Asia, and dealt them a crushing blow that annihilated their power forever. The main headquarters of the Turki were established along the Orkhon River, and Bumin's successors continued to engage in intensive military and political operations, which in the long run resulted in the creation of a huge empire that encompassed immense territories in Central Asia and southern Siberia.

At the end of the 6th century, as a result of a fierce political struggle, the ancient Turkic dominion split into an eastern and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Distribution of the archaeological monuments of the ancient Turkic peoples. *Key:* (1) Boundaries of republics of the U.S.S.R.; (2) modern national boundaries; (3) stone sculpture; (4) petroglyphs.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

a western khanate (kaganate). In 630 the eastern Turkic khanate was subjugated by the Chinese emperor T'ai-tsung (T'ang dynasty); but a half century later, in the 680s, following a rebellion led by Kagan Elteres and his chief advisor Tonyukuk, the Turki regained their independence. At the beginning of the 8th century the eastern Turkic khanate once more spread its dominion over a vast territory.

In 745 the power of the eastern Turkic kagans (khans) was again broken, and supremacy passed into the hands of Uigur khans. This, however, was a tribal and dynastic shift and did not bring about any clear changes in the ethnic map of Central Asia or in the culture of its nomadic population. Nevertheless, a fact of great significance in the cultural history of Central Asia ought to be mentioned — namely, the appearance of many fortified settlements, castles, and towns in the territory of Mongolia (q.v.) and Tuva.

In 840 the Uigur khanate fell as a result of the invasion of the Yenisei Kirghiz from the Sayan Mountains. From their homeland on the steppe of the Minusinsk Basin, hordes of the Yenisei Kirghiz crossed the Sayan Mountains on horseback, setting fire to the towns and nomadic camps of the Uigurs. Some of the Uigurs retreated into eastern Turkistan and Dzungaria, while others fled south toward Tibet. The hegemony of the Yenisei Kirghiz in Central Asia lasted for almost 70 years, until the beginning of the 10th century, when they were once more driven back to their own homeland beyond the Sayan Mountains. Many artistic monuments of the Central Asian Turki — their stone sculpture in particular — were destroyed or at least seriously damaged as a result of the invasion of the Kirghiz.

Despite the great political and military upheavals, the art of the Turkic nomads — jewelry-making, sculpture, and cliff carving — attained a significant level of development between the 6th and 10th centuries.

JEWELRY AND MINOR ARTS. Turkic craftsmen excelled in the production of gold and silver objects to satisfy the demand of the affluent nomadic aristocracy. A special qualitative analysis has revealed that the gold objects found in ancient Turkic kurgans (barrows) were made of high-standard, or "pure," gold.

The gold and silver plaques were made with a kind of mold: a thin sheet of gold foil was hammered with a miniature hammer onto a specially prepared wooden matrix of a given design, the foil was then cut along the contours, and the edges were bent under with small pliers. The plaques were secured to a bronze or leather backing with clamps, generally made of bronze; then they were ready to be attached to leather belts or harness straps (PLS. 219, 220). Bronze objects, in contrast to those made of gold and silver, were poured and were used without a leather backing.

The preferred shapes for ornamental plaques were flower- or leaflike forms. Articles made of bronze were mostly heart- or crescent-shaped, although some are rectangular with heart-shaped cutouts. A richly adorned belt was an indispensable item of attire for any member of the wealthy Turkic aristocracy. One such belt was found in the Altai (kurgan 1, Urochishche Tadila, Kurai steppe) in the tomb of a rich Turki named Ak-Kyun; one of the plaques on this belt carries an inscription that reads "Master Ak-Kyun's . . . sash." Other equally rich belts and parts of belt sets were found during the excavation of old Turkic kurgans in Tuva (Mongun-Taiga, Ulug-Khem), in Mongolia (Nainte-Sume, Dzhargalanty, Khushot-Khudzhirte), in the Minusinsk Basin (Kapchaly, Tyukhtyatski Klad), in Kirghizia (Chu Valley), and elsewhere.

Miniature vessels, most often made of silver (PL. 219), were extensively known throughout the Turkic world. These objects made by Turkic jewelers have been found in kurgans in the Altai, Tuva, and the Minusinsk Basin, and they were also widely represented on the Turkic stone figures of both chronological groups (see below).

Turkic metalware can be grouped in several categories according to shape and type. The first group consists of vessels with a spherical body, a high neck, and a vertical base from tombs in the Altai (Katanda, Kurai, Tuyakhta, Gurevski Zavod), in the Minusinsk Basin (Bidzha, Kopēny, etc.), and in Tuva (Mongun-Taiga). The second group is made up of ewers with an ellipsoidal body and either a vertical or a bent-away rim, which have been found in the Minusinsk Basin and among Sassanian goldware (VI, PL. 256; XII, PL. 402). The third group consists of small bottlelike vessels with a thin, long body and a high neck; the fourth group, of hemispherical bowls on a base that appears vertical in profile; the fifth, of large vessels with an ellipsoidal body and a sharply defined flared base; and the sixth, of hemispherical bowls.

Characteristic items of Turkic jewelry are the so-called "lyre" plaques, which were worn suspended from the belt by strips of leather; these bronze plaques with a heart-shaped opening (only one example made of iron has been found) came into wide circulation in the 8th and 9th centuries, toward the end of the ancient Turkic period, and thus serve as a reliable dating criterion. Standard examples of "lyre" plaques have been found in the Transbaikal region (Khoitsegorski necropolis), in the Minusinsk Basin, in central and southern Tuva (Ulug-Khem, Sagly, Mongun-Taiga), in the Altai (Kurai), and in Semirech'e during investigations of the Ak-Beshim ruins in Kirghizia, where in the territory of the Karluks they were mixed with Turgesh (Türgish) coins dating from the 8th century.

There was an important center of jewelry-making beyond the boundaries of the Turkic khanate, in the territory of the Khakas-Kirghiz state, which stretched along the middle Yenisei River. The early Kirghiz artisans, as well as their fellow craftsmen among the Turki, attained a high level of perfection.

Of great historic importance are the examples of jewelry found in the secret chambers of the old Kirghiz kurgans. (Those who prepared kurgan tombs for important persons, in an attempt to hoodwink grave robbers and gold hunters, placed the major treasures in concealed hollows dug beside the burial rather than in the tomb proper.) One of the kurgans of the Kopēny *chaatas* contained four gold vessels set upon a silver tray (the more massive pieces weighed 593 gr. and 780 gr.). The vessels were overlaid with an intricate ornamentation of various plant motifs and depicted fantastic griffins clutching fish in their beaks. Other secret chambers yielded gold plaques from belt sets, with figures of fantastic birds, fish, and geese, and a gold dish with stamped ornamentation. Of very special interest is a series of artistic bronze objects that constitute a hunting scene: galloping horsemen with bow and arrow shooting at snow leopards, roes, deer, and wild boar.

The art of jewelry-making of the Kirghiz shows an obvious kinship with the art of Sassanid Iran (see SASSANIAN ART). This influence is visible not only in their ornament but also in the subject matter of their compositions.

The Tyukhtyat treasure (consisting of 178 bronze and iron objects) was found accidentally during work along the Kazyr River in the Minusinsk Basin; it was attributed to the 9th–10th century on the basis of coins that date to the end of the 9th century. The most numerous items in the treasure were trappings (136 items). There is some reason to believe that the treasure mainly represents the handiwork of an unknown Kirghiz craftsman who was a master smith, caster, and jeweler (various tools of the trade were found among the objects). The ornamentation on the harness plaques shows the influence of T'ang motifs (see CHINESE ART). Artistic objects similar to the Tyukhtyat items have been found in excavations in Tuva (Sut-Khol region, Tora-Tal-Arty necropolis); these finds belong to the period between 840 (the beginning of the Kirghiz expansion over the Sayan Mountains) and the beginning of the 10th century (the period of their retreat into the Minusinsk Basin).

Decorated horn and bone articles were widely distributed throughout the Turkic world. The ornamental motifs include not only geometric and plant designs but also a circular pattern — the so-called "dot-and-circle" — which originated far back in pre-Turkic antiquity as a symbol for the sun, heat, and light. [A prototype of this ancient circle pattern appears on the oldest known Central Asian wooden instrument for lighting a fire by friction, found at Sagly-Bazhy II in Tuva, in a burial of the Pazyryk period (5th–4th cent. B.C.).] The Turkic bone and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

horn carvers left examples of intricate ornamentation on quiver facings (Mongun-Taiga, Uibat II). Plant designs appeared even on birch-bark quivers, as attested by an extraordinary specimen excavated in the Kargy River valley in southwest Tuva.

There are also excellent examples of narrative carvings. Deservedly famous is the scene of a battue depicted with great artistry and expressiveness on the plaque of a pommel facing found in the Kudyrge necropolis in the Altai, which is analogous to the plaque found in the Kara-Kudzhur burial in T'ien-shan. In a child's grave in the same necropolis was found a stone with a ritual carving depicting a richly attired female figure wearing a three-horned tiara, a child, kneeling men, holding the reins of their horses, and a male mask that seems to be a prototype of the *balbal* statues (see below: *Sculpture*). The Kudyrge stone composition evokes the prevailing relationship of overlord to subject in the Turkic world. There are valid grounds for thinking that this composition describes a moment in the tribute-offering ceremony. Ancient Turkic texts several times refer to their warriors forcing by the might of arms "those who had heads to bow them, and those who had knees to bend them." Kneeling was the expression of the unconditional submission of those who had become the vassals of the Orkhon-Yenisei Turki.

The female figure on the Kudyrge stone is usually taken to be a representation of the goddess Umai, one of the major deities in the pantheon of the Central Asian Yurki, by whom she was venerated as the goddess of fertility, as the guardian of chi dren, and — most significantly — as the patron goddess of war. Little wonder, then, that in an inscription dedicated to the wise Tonyukuk (councilor and prominent personage of the eastern Turkic khanate) the account of a victorious campaign ends with the following words: "Heaven, [the goddess] Umai, the sacred Fatherland [land–water], it was they, then, who granted us victory."

SCULPTURE. The ancient stone sculptures and images (PLS. 217, 218) found in the immense territory once occupied by the Turkic tribes are among the most remarkable art monuments left behind and impart a characteristic touch to the archaeological panorama of Central Asia and more western regions, of the Altai and Kazakhstan. By far the largest number of sculptures — 113 examples — discovered to date have been found in Tuva, while only 29 have been noted in the Altai, 23 in Mongolia, and 6 in the Khakass Autonomous Region. Slightly more than 200 statues in all have been found scattered throughout the Semirech'e territory and in neighboring areas of Kazakhstan.

The sculptures may be divided into two chronological groups: the majority of the statues belong to the 7th and 8th centuries and are set up near rectangular slab enclosures; rows of simple, vertical *balbal* stones diverge from the main sculpture and the nearby enclosure; the later works, of the 8th and 9th centuries, are not situated near enclosures. The sculptures within each chronological classification can be subdivided into two types: those showing the full human figure and those showing only the head or face.

Judging by the figures that remain standing in the steppe and mountain valleys, the orientation of the stone images was dictated by certain strict laws, since the majority of them face east or southeast. The orientation of the *balbal* stones always corresponds to that of the main sculpture and the enclosure.

The ritual significance of the sculptures is intimately related to that of the Turkic enclosures with steles; this relationship is so obvious that it may be asserted beyond doubt that these two types of monuments are variant expressions of one and the same system of beliefs. All present evidence indicates that the statues and the steles situated near enclosures have the same symbolic content.

The dating of the sculptures was arrived at on the basis of the "inventory" (articles) shown in the carving. In most cases the statues represent a warrior holding a vessel in his right hand, less frequently one in each hand. By comparing the objects that appear on the stone figures with articles found in Turkic burials in the Altai, Tuva, Mongolia, the Khakass region, Transbaikal, Kazakhstan and Kirghizia, it is possible to place the statues with certainty between the 7th and 9th centuries. Many of the figures discovered in Central Asia and in western Asia and southern Siberia constitute a high point of Turkic stone carving.

The question of whom the stone figures represent has been the subject of sharp controversy in the archaeological literature devoted to Oriental studies. The supporters of one theory hold that (except in the case of the Orkhon group in Mongolia) they represent important personages of the Turkic Tu-Kiu (Chinese Tu-chüeh); others express the opinion that the statues represent the more powerful enemies defeated by the Turkic warriors.

The solution to the puzzle lies largely in the dynastic chronicles of the Northern Chou and Sui dynasties and in ancient Turkic texts. A fragment of one of the chronicles reads: "Inside the building erected at the grave site are placed a drawn or painted image of the deceased together with an account of the battles in which he took part during his lifetime. Usually, if he killed one man, then one stone was put up. Some have stones numbering up to a hundred, or even to a thousand." The texts of the Orkhon-Yenisei are in full agreement with the dynastic chronicles; numerous references bear witness to the fact that the Turki followed the ritual practices described by the chroniclers. The Turkic texts show that the Turki used the word *balbal* for the stone image of a defeated and destroyed enemy whether the latter had been a great and mighty foe or just a simple warrior killed in battle. There are many such indications, all of them pointing to the same significance of the *balbal* statues as representations of vanquished enemies. Thus, for example, the text honoring Kül Teghin (in a passage attributed to Kagan Bilga) states: "In honor of the Kagan, my father [Kagan Elteres, Bilga's father], at the head [of the row of funerary stones] was placed the *balbal* of Baz Kagan. . . ." The same text goes on to explain that Baz Kagan had been one of the most powerful enemies of the Orkhon-Yenisei Turki and that he was finally defeated by their armies. A careful study of the dynastic chronicles reveals that the concept of "a drawn or painted likeness of the deceased" does not appear in the older, Chou dynasty text, which refers instead to a "stone token"; thus there is no contradiction between the chronicle and the evidence presented by Turkic sources.

Of extreme importance in determining the true meaning of the Turkic stone figures are some archaeological and historico-ethnographic finds which indicate that the stonecutters sought to underline the foreign ethnic origin of the people they represented; in every instance where the features of a face are indicated, the features characteristic of the Mongolian anthropological type are emphasized, whereas the anthropological type of the nomads who at that time lived in the areas where the statues were found (e.g., Tuva, Mongolia, the Altai) were, without question, predominantly Caucasian. The weapons shown on many statues are of a type used by alien and hostile tribes (e.g., the Uibat type of daggers); where clothing is shown in detail, it is apparent that the garments overlap from right to left rather than from left to right as was the custom among the Turki of Central Asia. In addition, it must be pointed out that the interpretation of the stone figures as representations of defeated foes has survived to modern times in the oldest heroic poetry of the Tuvintsy, one of the most ancient peoples of Turkic origin, and in the folklore of a number of Siberian peoples, such as the Kety, Selkupy, and Evenki.

All the details shown on the ancient Turkic stone figures are of great archaeological and historicoethnological interest: the clothing, the headdresses, the style of the hair, beard, and mustache, the earrings, the weapons, the belts and belt ornaments, the small pouches for carrying various trifles (*kaptargaki*), and the vessels.

Although the clothing is frequently indicated, details are scant. The usual neck opening suggests that the outer garment (*caftan*) is represented. The sleeves usually have narrow cuffs, which are shown in relief. Occasionally, there appear broad facing bands with a deep opening at the front. The manner of overlapping the clothing is indicated; this was a distinguishing ethnic characteristic in Turkic times, which, together with the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

hair style (worn loose and shoulder length or plaited into braids) served to identify members of different tribes and ethnic groups that often inhabited adjacent territories. The hair style and manner of overlapping the clothing even played an important role in the diplomatic etiquette observed by Central Asian rulers of unequal rank and importance. As far as can be determined, the garments shown on the stone figures overlap from right to left, a custom alien to the Orkhon-Yenisei Turki.

The headgear shown on the Turkic statues of warriors is most often a small cap shaped like a truncated cone — a type that has survived to modern times and has much in common with the caps of the Kazakhs. Much less frequent are tall, conical hats of a type that is known to have been widespread in Scythian times (an example in fur was found in Barrow II at Pazyryk in the Altai, 5th–3d cent. B.C.). Some of the stone figures have tall hats with the tip bent forward; this type of headgear was common in Central Asia before the Turkic period, in Hunnish times, and they are usually compared to the hats of Noin-ula.

The stone figures often show the hair parted in the middle. All the Turkic ritual statues represent men, and therefore a mustache and beard are often indicated. As a rule, the mustache was worn with the ends curled up; a straight mustache is rarely found. Two types of beard have been recorded: a small goatee (shown in relief) and a sparse, longish beard. A big, bushy beard is extremely rare. A number of statues of the later period have plaited hair.

The earrings on the statues are of two kinds: oval ones with a shaft and pendants, and those with tiny spheres soldered on the lower edge.

Weapons are shown on many of the figures, underscoring the fact that these are warriors. Two types of light arms appear: swords and daggers. Swords of the type represented on the statues were in common use in the great steppe belt during this period, as attested by the swords with cross hilts found in the Altai (necropolis near the village of Srostki), on the upper Ob River (the village of Bolshaya Rechka, site BE VIII), in the Caucasus and Hungary, and elsewhere.

The majority of the daggers shown in the sculptures are of the so-called "Uibat type." Very similar daggers with the same peculiar shape (the hilt bent at an angle to the blade) were widely used. Examples have been found in the Uibat *chaatas* (Khakass region), in a necropolis at Arkhiereiskaya Zaimka near Tomsk, in the Borisov necropolis (northern Caucasus), and at Kupyansk (Kharkov region).

The belts on the stone figures are shown with decorative plaques and with a variety of objects suspended from them, as was customary in Turkic times. The plaques come in two basic designs: rectangles with figured cutouts, and crescent shapes (similar types have been found in nomad settlements in the Altai, Tuva, the Minusinsk Basin, western Asia, and Hungary). "Lyre" plaques are frequently represented on the stone figures of the later period. Along with the belts are shown small pouches for carrying various trifles, such as pieces of steel or flint with tinder and amulets; identical pouches made of leather, fur, felt, and silk have been found in Turkic burials in the Altai (Kurai steppe) and in Tuva (Mongun-Taiga). Similar pouches for small change are still used by the Altaitsy.

Vessels are shown on many statues, but why they are represented remains a mystery. Most of these illustrate types of vessels that have been recovered from kurgan burials, such as silver vessels with a spherical body and high neck, ewers with an ellipsoidal body, phials, and hemispherical bowls.

The final stage of the Turkic nomads' statuary art is represented by the numerous stone statues of the Polovtsy (also known as the Comans, Kumans, or Kipchaks), which abound in the south of Russia. These statues were accurately described by Guillaume Rubruquis (William of Rubruck), a 13th-century traveler and envoy of the French king Louis IX. Both male and female figures have been recorded among the Polovtsian statues, which are known to have had an altogether different meaning from the earlier stone monuments of Central Asia. And yet exploratory excavations have shown that, like the stone figures of Central Asia, the Polovtsian statues of southern Russia are not funerary monuments: the kurgans on which they are erected do not contain nomad burials; they belong to earlier historical periods and thus serve merely as a kind of "pedestal" for the Polovtsian memorial figures.

In the eastern territories occupied by the Turki — Mongolia, Tuva, the Altai, eastern Kazakhstan — the custom of erecting stone statues came to an end in the 9th century. The western Turkic nomads, however, continued until later times practices that harked back to the ancient rituals of the nomads of Central Asia. The Arab traveler Aḥmad ibn-Faḍlān ibn-Ḥammād, who visited the Volga region and Central Asia in 921–22, reported that when a Turki was buried, "if he had ever killed a man and had been brave, [they] then carved an image in wood, one for every man he had killed, and placed them on his grave, saying, 'These are his pages who will wait on him in paradise.'" The wooden images mentioned by ibn-Faḍlān correspond to the older *balbal* of the Central Asian Turki. It is difficult to determine how long the Oguz continued the ritual of setting up images of enemies. It is significant, however, that the word *balbal* is not to be found in the dictionary of the Polovtsian (Coman) language, compiled by a Venetian living in the Crimean city of Solkhat (now Stary Krim); the dictionary, containing more than 1,500 words translated into Latin and Persian, was compiled at the beginning of the 14th century, but based on the vocabulary of the 13th century. [This is the well-known *Codex Cumanicus o Alphabetum Persicum, Comanicum et Latinum* (Venice, Bib. Marciana, Cod. lat. DXLIX), which had belonged to Petrarch, who left it to the Venetian Republic (see K. Grønbeck, ed., Codex Cumanicus, in *Faksimile herausgegeben mit einer Einleitung*, Copenhagen, 1936).]

The stone figures and their accompanying complexes were erected not only in observance of a ritual but also in pursuance of a very definite social objective: to spread far and wide among the masses of the nomads the conviction that the khanate was durable and invincible. For that reason the stone statues were erected in well-frequented places, where they would be seen by many people, serving both to remind them of the khanate's glorious victories in the past and to spur them to take part in new dangerous and distant campaigns. To this end, the sculptures — on which the Turkic craftsmen spent so much effort — were set up along the busiest tracks and caravan routes.

Indubitably, the Turki also used statuary of a commemorative nature (i.e., monuments that portrayed their most notable personages), which had no direct relationship to the *balbal* figures. Thus archaeological excavations in Mongolia have brought to light, in the region of the kagan monuments, a sculptured portrait of Prince Kül Teghin, who is mentioned in the chronicles. From the stylistic point of view this portrait has nothing at all in common with the *balbal* carvings.

Another noteworthy type of sculpture consists of marble turtles; in the holes in the turtle's back were placed clamps to support steles with memorial inscriptions in honor of the outstanding political and military figures of the khanate.

PETROGLYPHS. Old Turkic petroglyphs have been discovered in many places in Central Asia and to the west: in Mongolia (Ulan Khada, Barshin-gol, Mukur, etc.), in Tuva, in Kazakhstan (upper Irtysh, Chulak Mountains, Chu-Ili Mountains, Tamgaly, etc.), in Kirghizia (Saimaly-Tash, the right bank of Lake Issyk Kul, etc.), in the Pamir (Lyangar), and in eastern Turkistan (Khargos, Dzhaosu, Tekes, Boshan range).

The predominant motif in Turkic cliff carvings is a stylized representation of the mountain goat, of which examples numbering in the thousands are known; figures of other animals are found much less frequently. In a majority of cases the mountain goat is shown in motion, most frequently in the act of jumping; a static position is relatively rare. In contemporary literature these petroglyphs are referred to as Churuktug-Kyrlan types after the place in the Bai-Tal region of Tuva where the first mass discovery of these carvings was made.

From the point of view of style the distinguishing feature of the cliff carvings is a considerable degree of conventionalization: the few essential strokes that indicate the outline of the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

animal's body and the meager details by no means reflect the animal's true size and proportions. Except for the sharply curved horns, the images were produced by chiseling away small strips of the rock surface; almost all the figures are in full profile, and the carving of the details is of equal depth.

While in most instances the figures of mountain goats are not part of a composition, they do occasionally appear in a hunting scene (mountain goats were among the animals most frequently hunted by Turkic tribesmen). Shown in cliff carvings are hunting scenes with dogs, hunts by means of pits and traps, and battues; hunters armed with bows are also depicted. In an unusual composition discovered on a cliff at Bazhiktig-Khaya (central Tuva) the mountain goat figures are intermixed with images of horned chaman masks.

As a rule, Turkic cliff carvings are found interspersed among older Scythian and Hunno-Sarmatian carvings; the cliffs on which they appear seem to have been considered a kind of sanctuary, and for more than a thousand years artists covered them with carvings, choosing the southern slopes of the mountain ridges and, particularly, the cliff surfaces covered with so-called "desert varnish."

The dating of the cliff carvings constitutes one of the most difficult archaeological problems in the study of Turkic art. In order to solve the problem it has been necessary to define the style and determine the meaning of the images, and to compare the articles portrayed in the carvings with reliably dated material counterparts or with other representations. A comparative study has revealed that these cliff carvings are like the *tamga* (lit., "sign of property") discovered on a number of monuments in the Orkhon valley in Mongolia. There, among the monuments with steles dedicated to the prominent Turkic khan Kül Teghin and his brother Bilga, *tamga* signs in the shape of mountain goats designating the name of the kagan (khan) or of someone of equal rank have been found. V. L. P. Thomsen (1842–1927), the famous philologist and Turkologist who deciphered the old Turkic writing, even conjectured that these *tamga* symbols were the word "kagan" written in the Orkhon script.

Clues to the semantics of the *tamga* are provided by biographical data on Kül Teghin and Kagan Bilga. These two men were both nephews of Kagan Merchö, who became known for his savage and devastating incursions into the territories adjacent to the Turki. On his way back from his last military expedition, warriors of the Bayirku tribe, which he had in the past soundly defeated, ambushed and murdered him. His death signaled the start of an internecine struggle in which Kül Teghin played a leading role; he attacked the dead kagan's oldest son, defeated and killed him, and then finished off all the kagan's other sons as well. Instead of assuming the title of kagan, Kül Teghin bestowed it upon his elder brother, Bilga, who in turn named Kül Teghin commander-in-chief of the Turkic armies and eastern Chzhuki-prince (a high political title).

Kül Teghin died in 731, three years before Kagan Bilga; the latter took his brother's death very hard, and the funeral was held with all the pomp which characterized the burial ritual of the Central Asian Turki. Kagan Bilga died in 734; in the place reserved for the kagan's name on the memorial erected in his honor appears exactly the same *tamga* in the form of a mountain goat as on the stele commemorating Kül Teghin; thus the symbol for "kagan" appears not only on the stele commemorating the kagan himself but also on the one for his brother. Bilga thereby meant to express his recognition of Kül Teghin's military and political services and his indebtedness for having been placed on the throne; by having the kagan's *tamga* carved on Kül Teghin's memorial, Bilga no doubt also wanted to proclaim that Kül Teghin deserved the highest honors, those normally reserved for the kagan alone.

Emblems such as these have been found on several other monuments in the Orkhon Basin: on a slab north of the Kül Teghin complex, on a stone figure and two steles in the valley of the river Ongin, on a stone slab in Askhet, and on a marble turtle from a group of Turkic tombs on the Mukur River. In Tuva these *tamga* symbols have been found not only in cliff carvings but also on Turkic monuments: on a stone figure in the Sagly valley, on a stone figure and *balbal* rocks in the Ulaatai River valley, and on memorial steles with inscriptions in the Khachy valley. All these *tamga* emblems on the Turkic monuments were undoubtedly the prototypes of many thousands of cliff carvings in Tuva, Mongolia, the Altai, Kazakhstan, Central Asia, and Sinkiang. Owing to this analogy it has been possible to determine objectively and beyond doubt the period of time when the widely distributed Turkic cliff carvings were made.

With the exception of a relatively small number of memorial representations at Teve-Khaya in Tuva and at Bogdo Uula in Mongolia, which were executed in the ancient Mongolian era, cliff carving as a widespread practice ended with the ancient Turkic period, and the Turkic petroglyphic tradition subsequently died out. However, ethnographic evidence indicates a persistence of the ideological concepts linked to the ancient cliff carvings until relatively late times, reflecting totemistic beliefs that are closely associated with historical periods in which hunting is the major and determining economic activity of a people.

While it is true that in a number of places, such as Tuva and Mongolia, the custom of carving animals on cliffs ceased, popular tradition has brought down to our day figures that resemble those of the ancient petroglyphs. The link between ancient and modern representations is seen in the totemistic concepts current among the Sayan-Altai peoples (see SIBERIAN CULTURES). The amazing parallelism between the ancient cliff carvings and the figures on contemporary or almost contemporary objects must be attributed both to the conservative nature of shamanism (q.v.) and, above all, to the vitality of totemistic concepts. In a number of cases it is possible that the figures and compositions used on objects were copied directly from petroglyphs.

HISTORICULTURAL CONTACTS. Historicultural contacts spanned enormous distances, from the Chinese frontiers on the east to the confines of Byzantium on the west. Analysis of the archaeological finds offers irrefutable evidence of the existence of broad cultural contacts between peoples living in widely separated territories of Central Asia and to the west. The culture as a whole reflects a significant number of common aspects in the life of the nomads in various areas of the Turkic khanates. These similarities are exhibited not only in the decorative arts and in monumental sculpture but also in many of the archaeological artifacts, such as weapons (whistling arrows, bows, knives, daggers, swords), trappings (bits with typical S-shaped cheek bars, stirrups with lamellate or looped irons), various clasps (buckles), kettles, and other objects found in Turkic kurgans.

Cultural likenesses are sometimes so pronounced that ethnic boundaries are difficult to determine. However, other cultural remains — primarily the monuments, such as the enclosures with steles and *balbal* figures — make it possible to circumscribe exactly the boundaries of the khanate of the Central Asian Tu-Kiu. When these monuments are plotted on a map, a certain break becomes apparent in the expanse between the Central Asian area south of the Sayan Mountains and the territory of the Minusinsk Basin, where the Khakass khanate existed in the Turkic period. This is not surprising, for both of these unified nomad empires were for long periods engaged in incessant hostilities.

The nomadic Turkic world was in continual cultural contact with the China of the T'ang period, as corroborated by numerous finds of imported goods: silk and woolen fabrics, mirrors made of a special "white" metal, coins, and some items of jewelry. The flow of Chinese goods into the Turkic world was least of all the result of trade; most of these goods were war booty and gifts or tribute sent by the Chinese emperors in the hope of placating the warlike people of the steppe.

The nomads also came into possession of articles from distant cultures to the west; even objects made by Byzantine craftsmen reached Central Asia. Striking examples of the syncretism of various art forms are found in Western Asia, especially in the regions of Semirech'e and Tien-shan. The art objects found in the investigation of the Sukuluk ruins (Chu

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

valley) — the terra-cotta figurines in particular — attest to influences from Sogdiana (q.v.) and from Sassanian and Indian art (qq.v.), as well as to unquestionable effects of the cult of Zoroastrianism (q.v.). Many specimens of bractea (stamped ornaments made by obtaining a coin impression on gold foil) were stamped from Byzantine coins. The fact that in the Karluk period (8th–10th cent.) Islam had not yet been adopted throughout the Semirech'e region certainly had a repercussion on the development of the arts. It was just at this time, however, that the city of Taraz on the Talas River played a significant role as the easternmost outpost of Islam. In Taraz a polychrome pottery with bands of Arabic inscriptions in Kufic characters on a white background, typical of the Samanid area, was in common use (see SAMANID ART). In the Karluk period Arabic inscriptions on vessels were widely used in western Asia. These inscriptions were as a rule expressions of a good wish, or more rarely the signature of the craftsman (e.g., "made by Yusuf").

In the reconstruction of the historicultural and ethnic contacts — which in the Turkic period extended between the mountains and steppes of Tuva and Mongolia and the territories of western Asia, Kazakhstan, and eastern Turkistan — a significant contribution is made by the petroglyphs. Comparative study of the cliff carvings is based on a number of research principles, the most important of which are the following: (1) the comparing of the most numerous series of images possible, which will yield good results if a series of carvings very common in one area is compared with equally well-represented series in other, distant territories; (2) the according of due importance to stylistic traits, which are also important as a dating criterion; (3) the evaluating of the respective semantic meanings of the compositions and, in conjunction with this, the comparing of the relative spacing of the component figures; (4) the working out of an absolute chronology of cliff carvings, without which they would be useless as indicators of intercultural and intertribal contacts.

Petroglyphic investigation has become one of the most fruitful fields of study for reconstructing the contacts and movements of various ethnic groups, since the cliff carvings are a tangible record of the exchanges that took place between distant territories. Cliff carvings, unlike many other artistic or utilitarian objects, could neither change hands nor be moved from place to place; therefore, the existence of identical or similar cliff compositions in places geographically far removed from one another gives an idea of the movements of vast masses of Turkic nomads.

The distribution of the mountain goat emblems, or Churuktug-Kyrlan type of representations, in Mongolia, Tuva, the Altai, eastern Kazakhstan, Kirgizia, and Sinkiang provides sure evidence of the actual area of the movements of the Turkic tribes. The results of the comparative study of petroglyphs lead in turn to the conclusion that the main current of ethnic and cultural contacts flowed from east to west, the cliff carvings themselves being the landmarks of the ethnogenetic processes that unfolded over the wide expanses from the Sayan and Khangai mountains in the east to the peaks of the T'ien-shan and the Pamir and Altai ranges in the west.

The study of Turkic art (the jewelry in particular) reveals, despite its originality, significant influences from a number of Eastern and Western cultures.

The diverse history of the various Turkic-language peoples in later periods was determined by the stormy period of the formation of the Mongolian empire and by the subsequent development of feudalism. Many Turkic-language tribes found themselves included in different political units and frequently isolated from one another. As a result of new cultural conditions, many old artistic traditions were lost forever, and others underwent such modifications as to become unrecognizable. The culture of the Turkic peoples in later periods of their history owed a major debt to the peoples of western Asia and still more western territories who had been assimilated by the Turkic newcomers from the east. But, in spite of the divergent historical evolution of the Turkic tribes, there persist in the artistic traditions of these peoples tangible artistic traits of the old Turkic culture, whose birthplace was Central Asia.

SOURCES. N. Ya. Bichurin (Father Iakinf), Sobranie svedenii o narodakh obitavshikh v srednei Azii v drevnei vremena (Collection of Information Concerning the Peoples Living in Central Asia in Olden Times), 3 vols., St. Petersburg, 1851 (new ed., Moscow, Leningrad, 1950–53); V. V. Radlov, Die Alttürkischen Inschriften der Mongolei, St. Petersburg, 1894–99; V. Thomson, Inscriptions de l'Orkhon déchiffrées, Helsingfors, 1896; E. Chavannes, Documents sur les Tou-kiue (Turcs) occidentaux, recueillis et commentées, Sbornik trudov Orkhonskoi ekspeditsii, VI, St. Petersburg, 1903; E. Chavannes, Notes additionnelles sur le Tou-kiue occidentaux, TP, N.S., V, 1904, pp. 1–110; V. Thomsen, Alttürkische Inschriften aus der Mongolei, ZMG, LXXVIII, 1924, pp. 121–75; W. Kotowicz and A. Samoilovitch, Le monument turc d'Ikhe-Khuchotu en Mongolie Centrale, Rocznik Orjentalistyczny, IV, 1926, pp. 60–107; P. Pelliot, L'inscription chinoise de Bilgä Qayan, TP, N.S., XXVI, 1929, pp. 229–48; Liu Mau-tsai, Die chinesischen Nachrichten zur Geschichte der Ost-Türken (T'u-küe), 2 vols., Wiesbaden, 1958; Gy. Moravcsik, Byzantinoturcica, 2d. ed., Berlin, 1958, I, Die byzantinischen Quellen der Geschichte der Türkvölker, II, Sprachreste der Türkvölker in den byzantinischen Quellen.

BIBLIOG. A. V. Adrianov, Puteshestvie na Altai i za Sayany, sovershennoe v 1881 g. (Voyage in the Altai and to Sayan in 1881), Zapiski Imperatorskogo Russkogo Geograficheskogo Obshchestva po obshchei geografii, 1886; V. V. Radlov, Atlas drevnostei Mongolii (Atlas of Mongolian Antiquity), I, St. Petersburg, 1892; P. M. Melioranski, Pamyatnik v chest Kyul-Tegina (The Monument in Honor of Kül Tegin), Zapiski Vostochnogo Otdeleniya Imperatorskogo Russkogo Arkheologicheskogo Obshchestva, XII, 2–3, 1899; P. M. Melioranski, Dva serebryanykh sosuda s eniseiskimi nadpisyami (Two Silver Vessels with Yenisei Inscriptions), Zapiski Vostochnogo Otdeleniya Imperatorskogo Russkogo Arkheologicheskogo Obshchestva, XIV, I, 1902; Yu. Talko-Gryntsevich, Materialy k paleoetnologii Zabaikalya (Materials on the Paleoethnology of the Transbaikal Region), Irkutsk, 1902; Ya. I. Smirnov, Vostochnoe serebro (Oriental Silver), St. Petersburg, 1909; N. I. Veselovski, Sovremennoe sostoyanie voprosa o "kamennykh babakh" ili "balbalakh" (The Present Circumstances of the Problem of the "Stone Babas" or "Balbals"), Zapiski Odesskogo Obshchestva istorii i drevnostei, XXXII, 1915; S. R. Mantslov, Pamyatniki drevnosti v Uryankhaiskom krae (Monuments of Antiquity in the Urianghai Basin), Zapiski Vostochnogo Otdeleniya Imperatorskogo Russkogo Arkheologicheskogo Obshchestva, XXIII, 1916; V. V. Bartold, K voprosu o pogrebalnykh obryadakh Turok i Mongolov (The Question of the Funeral Rites of the Turkic and Mongolian Peoples), Zapiski Vostochnogo Otdeleniya Russkogo Arkheologicheskogo Obshchestva, XXV, 1921; G. I. Borovka, Arkheologicheskoe obsledovanie srednego techeniya r. Toly (The Archaeological Investigation of the Middle Course of the Tola River), Severnaya Mongoliya, II: Predvaritelnye otchëty lingvisticheskoi i arkheologicheskoi ekspeditsii o rabotakh provedennykh v 1925 (Northern Mongolia, II: Preliminary Reports of the Linguistic and Archaeological Mission on the Work Accomplished in 1925), Leningrad, 1927; S. Rudenko and A. Glukhov, Mogilnik Kudyrge na Altae (The Tomb of Kudyrge in the Altai), Materialy po etnografii, III, 2, 1927; M. P. Gryaznov and E. Shneider, Drevnie izvayaniya Minusinskikh stepei (Ancient Sculpture of the Minusinsk Steppes), Materialy po etnografii, IV, 2, 1929; S. A. Teplukhov, Opyt klassifikatsii metallicheskikh kultur Minusinskogo kraya (An Attempt to Classify the Metal Cultures in the Minusinsk Region), Materialy po etnografii, IV, 2, 1929; M. P. Gryaznov, Drevnie kultury Altaya (The Ancient Cultures of the Altai), Materialy po izucheniyu Sibiri, II, 1930; V. A. Kazakevich, Namogilnye statui v Darigange (Tomb Statues in Dariganga), Materialy komisii po issledovaniyu Mongolskoi i Tannu-Tuvinskoi narodnykh respublik i Buryat-Mongolskoi ASSR, V, 1930; H. Appelgren-Kivalo, Alt-altaische Kunstdenkmäler, Briefe und Bildmaterial von I. R. Aspelins Reisen in Sibirien und der Mongolei 1887–1889, Helsingfors, 1931; L. P. Potapov and K. Menges, Materialen zur Volkskunde der Türkvölker der Altai, Mitteilungen des Seminars für Orientalische Sprachen, XXXVII, 1, 1934, pp. 53–104; V. V. Barthold (Bartol'd), Zwölf Vorlesungen über die Geschichte der Türken Mittelasiens, Berlin, 1935; I. A. Orbeli and K. V. Trever, Sasanidskii metall (Sassanian Metals), Moscow, Leningrad, 1935; Puteshestvie Ibn-Fadlana na Volgu (The Voyage of ibn Faḍlān on the Volga), Moscow, Leningrad, 1939 (trans. and comm., I. Yu. Krachkovski); L. A. Evtyukhova and S. V. Kiselev, Chaatas u sela Kopeny (The Chaatas near the Village of Kopëny), Trudy Gosudarstvennogo istoricheskogo muzeya, XI, 1940; M. P. Gryaznov, Raskopki na Altae (Excavations in the Altai), Soobshchenie Gosudarstvennogo Ermitazha, I, 1940; A. N. Bernshtam, Arkheologicheskii ocherk Severnoi Kirgizii (Archaeological Description of Northern Kirghizia), Frunze, 1941; L. A. Evtyukhova and S. V. Kiselev, Otchët o rabotakh Sayano-Altaiskoi arkheologicheskoi ekspeditsii v 1935 g. (Report on the Work of the Sayan-Altai Archaeological Expedition in 1935), Trudy Gosudarstvennogo istoricheskogo muzeya, XVI, 1941; A. N. Bernshtam, Sotsialno-ekonomicheskii stroi orkhono-eniseiskikh tyurok VI-VIII vekov: Vostochno-Tyurskii kaganat i kyrgyzy (The Socioeconomic Order of the Orkhon-Yenisei Turks in the 6th–8th century: The Eastern Turkish Empire and the Kirghiz), Moscow, Leningrad, 1946; S. S. Chernikov, Naskalnye izobrazheniya verkhovoi Irtysha (The Rock Drawings in the Upper Irtysh Region), SA, IX, 1947; W. Eberhard, Some Cultural Traits of the Sha-t'o Turks, Oriental Art, I, 1948–49, pp. 50–55; S. P. Tolstov, Po sledam derevnekhorezmiiskoi tsivilizatsii (On the Track of the Ancient Civilization of Khwarizm), Moscow, 1948; L. A. Evtyukhova and S. V. Kiselev, Sayano-Altaiskaya ekspeditsiya (The Sayan-Altai Expedition), Kratkie soobshcheniya o dokladakh i polevykh issledovaniyakh Instituta istorii materialnoi kultury Akademii Nauk SSR, XXVI, 1949; Chuiskaya dolina: Trudy Semirechenskoi Arkheologicheskoi ekspeditsii, sostavleny pod rukovodstvom A. N. Bernshtama (The Chu Valley: Acts of the Semirech'e Archaeological Expedition under the Direction of A. N. Bernshtam), MIA, XIV, 1950; G. F. Debets, Paleoantropologiya Tuvy (Paleoanthropology of Tuva), Kratkie soobshcheniya Instituta etnografii Akademii Nauk SSR, X, 1950; S. V. Kiselev, Drevnaya istoriya yuzhnoi Sibiri (Ancient History of Southern Siberia), Moscow, 1950; S. P. Tolstov, Oguzy, Pechenegi i

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

More Daukara (The Oguz, Pechenegs, and the Daukar Sea), Sovetskaya Etnografiya, IV, 1950, pp. 49–54; S. E. Malov, Pamyatniki drevnetyurkskoi pismennosti: Teksty i issledovaniya (Ancient Turkic Literature: Texts and Investigations), Moscow, Leningrad, 1951; A. I. Minorski, Drevnie naskalnye risunki Gornogo Altaya (Ancient Rock Drawings in the Gorno Altai), KS, XXVI, 1951; A. N. Bernshtam, Istoriko-arkheologicheskie ocherki Tsentralnogo Tyan-Shanya i Pamiro-Altaya (Historicoarchaeological Sketch of Tien-shan and the Pamir-Altai), MIA, XXV, 1952; A. N. Bernshtam, Naskalnye izobrazheniya Saimaly-Tash (The Rock Figures of Saimaly-Tash), Sovetskaya Etnografiya, II, 1952; L. A. Evtyukhova, Kamennye izvayaniya Yuzhnoi Sibiri i Mongolii (The Rock Sculptures in Southern Siberia and Mongolia), MIA, XXIV, 1, 1952; V. P. Levasheva, Dva mogilnika kyrgyz-khakasov (Two Tombs of the Kirghiz-Khakas), MIA, XXIV, I, 1952; S. E. Malov, Eniseiskaya pismennost tyurkov: Teksty i perevody (The Yenisei Literature of the Turks: Texts and Translations), Moscow, Leningrad, 1952; P. I. Marikovski, Sposoby i obekty okhoty po motivam naskalnykh risunkov Chulakskikh gor, Kazakhskaya SSR (Hunting Methods and Objects According to Motifs Found in Rock Drawings in the Chulak Mountains, Kazakh SSR), Zoologicheskii zhurnal Akademii Nauk SSR, XXXII, 6, 1953; Ocherki istorii SSSR: Period feodalizma, IX–XV vv. (Historical Outline of the USSR: Feudal Period, 9th–15th Century), I, Moscow, 1953; L. P. Potapov, Ocherki po storii Altaitsev (Historical Outline of the Altai People), Moscow, Leningrad, 1953; A. D. Grach, Obsledovanie arkheologicheskikh pamyatnikov zapadnoi Tuvy (Investigation of the Archaeological Monuments in Western Tuva), Uchenye zapiski Tuvinskogo Nauchno-issledovatelskogo Instituta yazyka, literatury i istorii, II, 1954; Istoriya Mongolskoi Narodnoi Respubliki (History of the Mongolian People's Republic), Moscow, 1954; S. I. Vainshtein, Arkheologicheskie raskopki v Tuve v 1953 g. (Archaeological Excavations in Tuva in 1953), Uchenye zapiski Tuvinskogo Nauchno-issledovatelskogo Instituto yazyka, literatury i istorii, II, 1954; C. H. Dawson ed., The Mongol Mission; Narratives and Letters of the Franciscan Missionaries in Mongolia and China in the 13th and 14th Century, New York, 1955; A. D. Grach, Arkheologicheskie issledovaniya v zapadnoi Tuve (Archaeological Investigations in Western Tuva), Kratkie soobshcheniya Instituta etnografii Akademii Nauk SSSR, XXIII, 1955; A. D. Grach, Kamennye izvayaniya zapadnoi Tuvy: K voprosu o pogrebalnom rituale tugyu (The Stone Sculptures in Western Tuva: The Problem of the Funeral Rites of the Tu-Kiu), Sbornik muzeya antropologii i etnografii Akademii Nauk SSSR, XVI, 1955; V. P. Alekseev, Ocherk paleoantropologii Tuvinskoi avtonomnoi oblasti (A Study of the Paleoanthropology of the Tuva Autonomous Region), Antropologicheskii sbornik, Trudy Instituta etnografii Akademii Nauk SSSR, N.S., XXXIII, 1, 1956; M. P. Gryaznov, Istoriya drevnikh plemen Verkhnei Obi po raskopkam bliz s. Bolshaya Rechka (The History of the Ancient Tribes of the Upper Ob According to the Excavations near the Village of Bolshaya Rechka), MIA, XLVIII, 1956; Istoriya Kirgizii (The History of Kirghizia), I, Frunze, 1956; A. P. Kovalevski, Kniga Ahmeda Ibn-Fadlana o ego puteshestvii na Volgu v 921–922 g.: Stati, perevody i kommentarii (The Book of Aḥmad ibn-Faḍlān about his Journey on the Volga in 921–22: Articles, Translations, and Commentaries), Kharkov, 1956; S. I. Vainshtein, Arkheologicheskie issledovaniya v Tuve v 1955 g. (Archaeological Explorations in Tuva in 1955), Uchenye zapiski Tuvinskogo Nauchno-issledovatelskogo Instituta yazyka, literatury i istorii, IV, 1956; L. A. Evtyukhova, O plemenakh Tsentralnoi Mongolii IX v. (Concerning the Tribes of Central Mongolia in the 9th Century), SA, II, 1957; A. D. Grach, Petroglify Tuvy, I: Problema datirovki i interpretatsii, etnograficheskie traditsii (The Petroglyphs of Tuva, I: The Problem of Dating and Interpretation and their Ethnographic Tradition), Sbornik Museya antropologii i etnografii Akademii Nauk SSSR, XVII, 1957; Puteshestviya v vostochnye strany Plano Karpini i Rubruka (The Voyages of Plano Carpini and Rubruquis to Eastern Lands), Moscow, 1957; L. A. Evtyukhova, Arkheologicheskie pamyatniki eniseiskikh Kyrgyzov (Khakasov), [Archaeological Monuments of the Yenisei Kirghiz (Khakasi)], Abakan, 1958; A. D. Grach, Drevnetyurkskaya kamennaya figura iz raiona Mungu-Khairkhan-Ula (Yugozapadnaya Tuva), [The Ancient Turkic Stone Figure from the Mungu-Khairkhan-Ula Region (Southwest Tuva)], Kratkie soobshcheniya Instituta etnografii Akademii Nauk SSSR, XXX, 1958; A. D. Grach, Drevnetyurkskie pogrebenie s zerkalom Zin'-vana v Tuve (The Ancient Turkic Tomb with the Mirror of Zin'-van in Tuva), Sovetskaya Etnografiya, IV, 1958; A. D. Grach, Petroglifi Tuvy, II: Publikatsiya kompleksov obnaruzhennykh v 1955 g. (The Petroglyphs of Tuva, II: The Publication of Examples Discovered in 1955), Sbornik Muzeya antropologii i etnografii Akademii Nauk SSSR, XVIII, 1958; R. F. Its, O kamennykh izvayaniyakh v Sintssyane (The Stone Sculptures in Sinkiang), Sovetskaya Etnografiya, II, 1958; A. G. Maksimova, Naskalnye izobrazheniya ushchelya Tamgaly (The Rock Figures of the Tamgala Pass), Vestnik Akademii Nauk Kazakhskoi SSR, CLXII, 9, 1958; S. A. Pletneva, Pechenegi, Torki i Polovtsy v yuzhnorusskikh stepyakh (The Pechenegs, Torki, and Polovtsy in the Southern Russian Steppes), Trudy Volgo-Donskoi arkheologicheskoi ekspeditsii, MIA, LXII, 1, 1958; S. I. Vainshtein, Nekotorye itogi rabot arkheologichesloi ekspeditsii Tuvinskogo NIIYALI v 1956–1957 gg. (Some Results of the Work of the 1956–57 Archaeological Expedition of the Tuva NIIYALI), Uchenye zapiski Tuvinskogo Nauchno-issledovatelnogo Instituta yazyka, literatury i istorii, VI, 1958; A. D. Grach, K istorii svyazei naseleniya Tsentralnoi Azii s Tyan-Shanem i Pamiro-Altaem po materialam izucheniya petroglifov: Stenogramma vystupleniya na nauchnoi sesii po etnogenezy kirgizskogo naroda (The History of the Relations of the Central Asian Population with T'ien Shan and the Pamir-Altai as Found from a Study of Petroglyphs: A Stenographic Report of the Scientific Session on the Ethnology of the Kirghiz People), Trudy, Kirgizskoi arkheologo-etnograficheskoi ekspeditsii, III, Frunze, 1959; K. V. Vyatkina, Arkheologicheskie pamyatniki Mongolskoi Narodnoi Respubliki (Archaeological Monuments in the Mongolian People's Republic), Sovetskaya Etnografiya, I, 1959; V. P. Alekseev, Materialy po paleoantropologii zapadnoi Tuvy (Materials on the Paleoanthropology of Western Tuva), Trudy Tuvinskoi kompleksnoi arkheologo-etnograficheskoi ekspeditsii Instituta etnografii Akademii Nauk SSSR, I, 1960; A. D. Grach, Arkheologicheskie issledovaniya v Kara-Khole i Mangun-Taige: Polevoi sezon 1958 g. (Archaeological Investigations in Kara-Khol and Mongun Taiga: 1958 Field Season), Trudy Tuvinskoi kompleksnoi arkheologo-etnograficheskoi ekspeditsii Instituta etnografii Akademii Nauk SSSR, I, 1960; A. D. Grach, Arkheologicheskie raskopki v Mongun-Taige i issledovaniya v Tsentralnoi Tuve: Polevoi sezon 1957 g. (Archaeological Excavations in Mongun Taiga and Investigations in Central Tuva: 1957 Field Season), Trudy Tuvinskoi kompleksnoi arkheologo-etnograficheskoi ekspeditsii Instituta etnografii Akademii Nauk SSSR, I, 1960; A. D. Grach and L. G. Nechaeva, Kratkie itogi polevykh issledovanii, provedennykh arkheologicheskim otryadom TKEAN v 1959 g. (A Brief Summary of the 1959 Explorations of the Archaeological Section of the TKEAN), Uchenye zapiski Tuvinskogo Nauchno-issledovatelskogo Instituta yazyka, literatury i istorii, VIII, 1960; L. V. Grebnev, Tuvinskii geroicheskii epos: Opyt istoriko-etnograficheskogo analiza (The Heroic Epos of the Tuvintsy: An Essay of Historicoethnographic Analysis), Moscow, 1960; L. R. Kyzlasov, Tuva v period tyurkskogo kaganate, VII–VIII vv. (Tuva in the Period of the Turkic Empire, 7th–8th Century), Vestnik Moskovskogo Universiteta, IX (istoricheskie nauki), I, 1960; V. A. Ranov, Naskalnye risunki u kishlaka Lyangar, Zapadnii Pamir (Rock Drawings Near the Village Lyangar, Western Pamir), Izvestiya Otdeleniya obshchestvennykh nauk Akademii Nauk Tadzhikskoi SSR, XXII, 1, 1960; A. D. Grach, Drevnetyurkskie izvayaniya Tuvy: Po materialam issledovanii 1953–1960 gg. (Ancient Turkic Sculptures in Tuva: According to Research Material from 1953–60), Moscow, 1961; N. V. Kyuner, Kitaiskie izvestiya o narodakh Yuzhnoi Sibiri, Tsentralnoi Azii i Dalnego Vostoka (Chinese Information on the Peoples of Southern Siberia, Central Asia and the Far East), Moscow, 1961; Ya. A. Sher, Pogrebenie s konem v Chuiskoi doline (The Burial with Horse in the Chu Valley), SA, I, 1961; S. I. Vainshtein, Tuvintsy-todzhintsy: Istoriko-etnograficheskie ocherki (The Tuvintsy-todzhintsy: Historicoethnografic Essays), Moscow, 1962; I. A. Batmanov, Z. B. Aragachi, and G. F. Babushkin, Sovremennaya i drevnaya eniseika (Contemporary and Ancient Yenisei), Frunze, 1962; I. A. Batmanov, O datirovke eniseiskikh pamyatnikov drevnetyurkskoi pismennosti (Concerning the Dating of Yenisei Monuments of Ancient Turkic Writing), Uchenye zapiski Tuvinskogo Nauchno-issledovatelskogo Instituta yazyka, literatury i istorii, X, 1963; M. H. Mannai-ool, Itogi arkheologicheskikh issledovanii TNIYALI v 1961 g. (Results of the Archaeological Investigations of the TNIYALI in 1961), Uchenye zapiski Tuvinskogo Nauchno-issledovatelskogo Instituta yazyka, literatury i istorii, X, 1963; Ya. A. Sher, Drevnetyurkskie izvayaniya Semirechya. Avtoreferat (The Old Turkic Sculptures of Semireche. Report), Leningrad, 1963; Ya. A. Sher, Ob odnom drevnetyurkskom izvayanii iz Chuiskoi doliny (Concerning an Old Turkic Sculpture from the Chu Valley), SA, II, 1963; The Turkic Peoples: Selected Russian Entries from the Great Soviet Encyclopedia, Bloomington, 1963; F. Kh. Arslanova, Arkheologicheskie pamyatniki Srednego Priirtyshya: Avtoreferat (The Archaeological Monuments of the Middle Irtysh Region: Report), Alma-Ata, 1964.

A. D. GRACH

Illustrations: PLS. 217–220; 1 fig. in text.

TURNER, JOSEPH MALLORD WILLIAM. An English landscape and marine painter, Turner anticipated the impressionists in his treatment of light and atmosphere. The son of a barber, he was born on Apr. 23, 1775, in London, received little education, and showed his taste for art at an early age (some drawings in the British Museum were done when he was only twelve). Like so many of his generation, Turner started his career as a topographical draftsman. He probably had some training under Thomas Malton the Younger (1748–1804); then he studied (1789–93) at the schools of the Royal Academy, where he began exhibiting water colors in 1790 and oil paintings in 1796. In these years he was an assiduous copyist of works by P. Sandby and John Robert Cozens and formed a friendship with Thomas Girtin, whom he met at the house of Dr. Thomas Monro, an amateur and collector. Turner quickly rose to fame, was elected Associate Royal Academician in 1799 and Royal Academician in 1802, and from 1808 to 1838 was professor of perspective at the Royal Academy.

After traveling around Wales, Yorkshire, the Lake District, and Scotland (where he was to return in 1831 as the guest of Sir Walter Scott), he made his first journey abroad in 1802 (during the brief peace of Amiens), visiting Paris and Switzerland. In 1804 he opened his own gallery on Harley Street; later it was moved to Queen Anne Street, where his works remained until his death. In his early years Turner worked much for engravers, attempted historical painting (*Death of Nelson*, 1808; London, Tate Gall.), occasionally painted country houses, and perfected himself as a painter of landscapes. Among his patrons was the Earl of Egremont, who became a close friend and later invited the artist to Petworth; the 20 pictures the Earl purchased are still preserved there. Another patron was Walter Fawkes of Farnley Hall, Yorkshire, where Turner

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

used to stay nearly every summer between 1810 and 1824. In 1819 he visited Italy for the first time, spending three months in Rome, then going to Naples and returning via Florence and Venice. He filled many sketchbooks with drawings and water colors and on his return painted a number of important pictures of Italian subjects, most of them now at the Tate Gallery in London. He revisited Rome in 1828, when he exhibited some of his paintings there, and in 1835 and 1840 returned to Venice. His annual tours, which took him to France, Germany, the Netherlands, Switzerland (with H. A. J. Munro of Novar in 1836), and Austria, ceased in 1845. In the last years of his life he began to suffer from ill health, but he continued to exhibit until 1850. He died in Chelsea on Dec. 19, 1851, and was buried with honors in St. Paul's Cathedral.

Turner was a man of robust constitution, short and ungainly in appearance, frugal in his personal tastes, and with unbounded energy in all that concerned the pursuit of his art, working long hours and undertaking extensive journeys in search of subjects. He never married, had no pupils, and was secretive about his methods, not allowing anyone to watch him at work. Toward the end of his life scurrilous legends grew up about him, for he was living with his landlady under an assumed name, though this may have been no more than an artist's natural defense against social interruptions. His will left all the paintings in his possession to the nation and directed that his money be used to found a charitable institution for poor artists; this was contested, however, and after five years of litigation the money went to his distant relatives. A selection of 34 paintings was shown at the National Gallery, London, in 1857; and John Ruskin, who had written *Modern Painters* in defense of Turner's work, was entrusted with the selection of the water colors that were shown at Marlborough House in the same year. The condition that the bequest be displayed as a whole and that a gallery be built to house it was not carried out until 1908, when Sir Joseph Duveen the Elder built the Turner wing at the Tate Gallery, where a number of the oil paintings now hang and the process of cleaning and examining the less-finished works continues. The more than 19,000 drawings and water colors were deposited in the Print Room of the British Museum after the storerooms of the Tate were flooded in 1928.

The concentration of so much of Turner's work in London has been detrimental to his reputation. It is impossible to study his work on the Continent, but there are some fifty important oil paintings in United States and Canadian museums such as the Metropolitan Museum and other collections discussed below.

In early life Turner mastered the art of drawing and water-color painting (PL. 222) with a perfection that has never been surpassed. He used every known device, sometimes relying on the most delicate washes or building up rich tones that almost rival oil painting. Gradually his style changed from topographical recording to a romantic interpretation of the moods of nature. Gothic architecture was a favorite subject. Though in treatment and color his water colors soon became revolutionary, in composition they always retained the grace of the 18th century. The water colors, on the whole, found purchasers more readily than the oils and are more frequently signed and dated; they are therefore widely scattered in public and private collections.

Accurate observations of every kind of natural and architectural form, made in his early life, coupled with his extraordinarily retentive memory, enabled Turner in his later period to dispense with detail and yet retain the sense of mass and structure. He seems never to have painted his finished work, whether in oils or water colors, direct from nature — and for this reason was not hampered by considerations of exact topographical accuracy — but his sketchbooks are filled with color notations of the utmost delicacy and beauty, done probably, if not on the spot, at least soon after he had seen the particular effect he wished to record. The water colors of his middle and late period include, apart from records of his journeys, illustrations to the poetic works of Byron, Scott, and Samuel Rogers; the illustrations for Rogers's work are delicate vignettes that set a new fashion in book illustration.

Turner began working for engravers in 1794, and in 1805 *The Shipwreck*, the first of many plates of his paintings (XII, PL. 317), was published, thus reaching a wide public. The following year he started the publication of his *Liber studiorum*, which was issued in parts of five etched and mezzotinted plates, designed to emulate the *Liber veritatis* of Claude Lorrain (q.v.). In 1819, when 71 plates had been published, the project was abandoned, perhaps because Turner had turned to steel engraving and had trained a group of engravers to produce work of fine quality, which was to have a lasting effect throughout the 19th century.

Among the earliest oil paintings in the Turner Bequest are views of Buttermere Lake and Coniston Fells, both exhibited in 1798. Though low in tone, they already show a remarkably subtle gradation, producing the hazy atmospheric effect characteristic of England. Soon after, Turner began a series of experiments in the style of other painters, which are not so much imitations as attempts to master and, where possible, surpass the achievement of the painters he most admired, among them Richard Wilson (1713–82) and Claude Lorrain, who enjoyed a great reputation among English collectors. When Turner was in Paris in 1802 he made elaborate notes of the pictures he saw in the Louvre. Titian and Poussin (qq.v.) were among the painters who aroused his admiration, and in the following years he made several experiments in their respective styles: *Venus and Adonis* (New York, Gall. of Modern Art, Huntington Hartford Coll.) and *The Holy Family* (London, Tate Gall.) recall Titian, and *Chateâux de St. Michael, Bonneville, Savoy* (London, Tate Gall., Stephen L. Courtauld Coll.) and *The Destruction of Sodom* (1805; PL. 223) are attempts to rival Poussin. In 1807 Turner exhibited the first of his genre subjects, probably inspired by Sir David Wilkie's success in reviving the style of Teniers (q.v.), and also painted a number of oil sketches from nature, mostly of the Thames (PL. 221). As direct transcripts of tone and color they invite comparison with Constable (q.v.) and no doubt served to clear his palette and free his style from the compositional trammels of the past. In the succeeding decade he painted a number of English scenes in which the study of light and atmosphere are accompanied by a great freedom of design, as in *Linlithgow Palace* (1810; Liverpool, Walker Art Gall.), *Somer Hill, Tunbridge* (1811; Edinburgh, Nat. Gall. of Scotland), and *St. Mawes* (1812), *Frosty Morning* (1813), *Crossing the Brook* (1815), and *England: Richmond Hill* (1819), all in the Tate.

At the same time he was developing his skill as a marine painter, first in a manner similar to Van de Velde (*Dutch Boats in a Gale*, 1801; *Mertoun, St. Boswells, Scotland*, Earl of Ellesmere Coll.), later with more immediate observation of nature (XI, PL. 156), as in *Calais Pier* (London, Nat. Gall.), painted in 1803 after his first crossing of the Channel; and in 1818 his famous *Dort or Dordrecht* (Farnley Hall, Yorkshire, Major Le G. G. W. Horton-Fawkes Coll.) was obviously a tribute to Cuyp (q.v.). In those days of dangerous seafaring the theme of shipwreck was surprisingly popular, and Turner approached the problem with originality. One of his most ambitious works in this category is the *Wreck of a Transport Ship* (1810; Paris, Gulbenkian Coll.). Here, as in the *Snowstorm: Hannibal and His Army Crossing the Alps* (1812; PL. 224), he achieved a sweeping breadth of design that completely dominates the subject. It was probably Claude Lorrain's inspiration that led Turner to paint a number of Carthaginian subjects, variations on the theme of a seaport with classical buildings. While he lacked Lorrain's lucidity of design and clear light, Turner undoubtedly came nearer to nature in the rendering of atmosphere and sunlight effects (PL. 221).

After his first visit to Italy his coloring became much purer. The grays and browns he had used tended to vanish from his palette, and the first Italian compositions he exhibited — *Rome, from the Vatican* (1820), *The Bay of Baiae* (1824), and *Rome, the Arch of Titus and the Forum Romanum* (1826; PL. 224), all in London (Tate Gall.) — are glowing with tones of orange and mauve, yellow and blue, so that, in the last-named picture, the reflected lights under the arches of the Basilica of Maxentius produce a sparkling effect. In these years he painted the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

two great pictures of Dieppe and Cologne (New York, Frick Coll.) and the two views of Mortlake Terrace (New York, Frick Coll.; Washington, Nat. Gall.). In 1827, while staying with the architect John Nash on the Isle of Wight, he sketched a number of delicate studies of the regatta at Cowes (London, Tate Gall.), and in 1828 he exhibited the painting of the same scene (Vict. and Alb.). The fantastic element prevails in the sonorous colors of *Ulysses Deriding Polyphemus* (1829; PL. 225). A number of figure subjects exhibited or attempted during this period appear to be inspired by Rembrandt but are more diffused with light and generalized. Turner usually treated figures as part of a crowd rather than as individuals, and these masses of figures are an integral part of the scenes, as in *Pilate* (1830; London, Tate Gall.). In the 1830s he painted *Palestrina* (London, Nat. Gall.), *Childe Harold's Pilgrimage* (PL. 225), three pictures of Admiral Van Tromp, and a number of Venetian subjects (PL. 221) with ever-increasing mastery and opalescent color. An obsession at one time was the combination of different sources of light such as sunset, moonlight, and firelight. The sight of the burning of the Houses of Parliament in 1834 may have set him off on this course. In 1835 he exhibited his two paintings of the fire (Cleve. Mus.; Philadelphia, Mus. of Art), as well as the *Keelmen Heaving in Coals by Night* (Washington, Nat. Gall.), and in 1837 *The Parting of Hero and Leander* (London, Tate Gall.). The unfinished *Fire at Sea* (London, Nat. Gall.) probably also belongs to this group, as well as *Rockets and Blue Lights* (1840; Williamstown, Mass., Sterling and Francine Clark Art Inst.) and *The Slave Ship*, of the same year (Boston, Mus. of Fine Arts).

Compositional devices in this late period became more complex. He endeavored to embrace an ever-wider scene and, instead of leading the eye toward a central vanishing point, sometimes tended to introduce a diversion sideways. Instead of being constructed in the theatrical manner on a rectangular stage with a backcloth, Turner's later compositions often produce the effect of being disposed within a hollow sphere or ovoid. Sometimes sharp perspective, as in the foreshortened bridge in the Philadelphia *Burning of the Houses of Parliament*, enhances the effect of recession, and the sense of immensity is rendered by taking a high station point, as in *Rome, from Mount Aventine* (London, Rosebery Coll.), *Heidelberg* (London, Tate Gall.), and *Juliet and Her Nurse* (New York, Mrs. G. Macculloch Miller Coll.). *The Snow Storm — Steam Boat off a Harbour's Mouth Making Signals in Shallow Water, and Going by the Lead* (1842; London, Nat. Gall.) is a whirl of movement suggested by the elemental forces Turner had seen when the sea was so rough that he had himself tied to the mast in order to be able to stay on deck and observe the effects of the storm. The spiral movement within a composition is perhaps best seen in the square or octagonal pictures that he painted in pairs of contrasting cold and warm colors, to express not only different times of day but also degrees of emotion, as in *Peace* and *War* (both 1842) and in *Shade and Darkness — the Evening of the Deluge* and *Light and Colour (Goethe's Theory) — the Morning after the Deluge* (both 1843), all in London (Tate Gall.). The fact that he used such titles shows that he was far more concerned with the purely visual effect than with the historical scene, which is, as it were, superimposed for the sake of his public.

Turner was in the habit of appending lines of poetry to his paintings. These are sometimes taken from James Thomson's *The Seasons* or from other poets but are more often lines of his own composition. He continued to discover new subjects. *The "Fighting Téméraire" Tugged to Her Last Berth To Be Broken Up* (1838; London, Nat. Gall.) is emblematic of the passing of the sailing ship and the coming of steam. In 1844 he painted *Rain, Steam, and Speed — the Great Western Railway* (London, Nat. Gall.), probably the earliest picture of a train, but the real subject is light seen through rain. Many of the studies of coast and sea not exhibited in his lifetime are almost tachist in their effect of paint boldly flung on with a palette knife, and young artists find them an inspiration as action painting. Turner's technique in oils is closely related to his work as a water-colorist. He was one of the first to paint on a white ground instead of using the traditional brown or buff as Constable did. There are records showing that toward the end of his life he used to send almost blank canvases to the Royal Academy and add the color and detail on varnishing day. This practice may account for the large number of unfinished canvases in his studio at the time of his death.

Turner's reputation stood high for many years, partly owing to Ruskin's writings. The artist had no direct followers, although his style undoubtedly influenced a number of Victorian landscape painters. The closest is James Baker Pyne, and there are similarities in the work of John Martin, Francis Danby, William Linton, Frederick Lee Bridell, and Frederick Henry Henshaw. When Monet and Pissarro (qq.v.) visited London in 1870, they were struck with the impressionist qualities of Turner's work. As the study of purely formal value gained ground and the influence of Cézanne (q.v.) led artists to stress the monumental rather than atmospheric qualities in landscape, Turner's work was looked upon with disfavor and even ridiculed by Roger Eliot Fry and Clive Bell. In more recent times, after a collection of Turner's works had been sent to the Biennale in Venice and toured many European capitals in 1948, his reputation reasserted itself.

A good deal of contemporaneous criticism of Turner is reprinted by A. J. Finberg in his standard *Life*. It was largely in response to this adverse criticism and incensed by the personal revelations in G. W. Thornbury's *Life* that Ruskin wrote his *Modern Painters*. Although C. F. Bell (1901) and W. Armstrong (1902) compiled inventories of Turner's work, the lists and inventories given by Finberg are still the most complete and accurate.

BIBLIOG. J. Ruskin, Modern Painters, London, 1843–60; J. Burnet, Turner and His Works, 2 vols., London, 1852–59; G. W. Thornbury, The Life of J. M. W. Turner R. A., 2 vols., London, 1862–77; R. N. Wornum, The Turner Gallery, London, 1875; C. F. Bell, The Exhibited Works of Turner, London, 1901; W. Armstrong, Turner, London, 1902; J. Ruskin, Works (ed., E. T. Cook and A. Wedderburn), 39 vols., London, 1903–12; G. W. Rawlinson, The Engraved Work of Turner, 2 vols., London, 1908; A. J. Finberg, Complete Inventory of the Drawings in the Turner Bequest, 2 vols., London, 1909; A. J. Finberg, Turner's Water-colours at Farnley Hall, London, 1909; A. J. Finberg, Turner's Sketches and Drawings, London, 1910; Tate Gallery Catalogues, The Turner Collection, London, 1920; A. J. Finberg, A History of Turner's Liber Studiorum, London, 1924; C. L. Hind, Turner's Golden Visions, London, 1925; T. Ashby, Turner's Visions of Rome, London, 1930; R. Fry, Reflections on British Painting, London, 1934; B. Falk, Turner the Painter, London, 1938; C. Mauclair, Turner, London, 1939; XXIV Biennale di Venezia, Venice, 1948 (cat.); K. Clark, Landscape into Art, London, 1949; J. Rothenstein, Turner, London, 1949; British Council (Germany), Turner Water-colours, 1950 (cat.); Centenary Loan Exhibition of Water-colours and Drawings by J. M. W. Turner R. A., London, 1951 (cat.); C. Clare, J. M. W. Turner, London, 1951; H. Finberg, Turner's Gallery in 1810, BM, XCIII, 1951, pp. 283–386; H. Finberg, Turner to Mr. Dobree: Two Unrecorded Letters, BM, XCV, 1953, pp. 98–99; Arts Council of Great Britain, J. M. W. Turner R. A., 1953 (cat.); Whitechapel Art Gallery, J. M. W. Turner, London, 1953 (cat.); John Heron Art Museum, Turner in America, Indianapolis, 1955 (cat.); A. Livermore, J. M. Turner's Unknown Versebook, The Connoisseur (Year Book), London, 1957; A. J. Finberg, Life of J. M. W. Turner, 2d ed., Oxford, 1961; M. Butlin, Turner, Watercolours, London, Basel, 1962; L. Herrmann, J. M. W. Turner, 1775–1851, London, 1963; J. Ziff, Backgrounds, Introductions of Architecture and Landscape, A Lecture by J. M. W. Turner, Warburg, XXVI, 1963, pp. 124–47; J. Ziff, Turner and Poussin, BM, CV, 1963, pp. 315–21; L. Gowing, Turner: Imagination and Reality, New York, 1966; J. Lindsay, J. M. W. Turner: A Critical Biography, New York, 1966.

Mary CHAMOT

Illustrations: PLS. 221–225.

TYPOGRAPHY. See GRAPHIC ARTS.

UCCELLO, PAOLO. See PAOLO UCCELLO.

UGOLINO DI VIERI. Ugolino, a Sienese goldsmith and enameler, was born at the beginning of the 14th century and died between 1380 and 1385. The earliest documentary mention of him is in 1329 when, already of age, he sold a house that he owned together with his father, Vieri di Ugolino (also a goldsmith), and his brother Giovanni. In 1332 he was paid for a bowl, to be presented by the Commune of Siena to the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

condottiere Guidoriccio da Fogliano. In 1337–38 he was in Orvieto, where, with the collaboration of Viva di Lando and Bartolommeo di Tommè (known as Pizzino), he executed for the Cathedral the Reliquary of the Holy Corporal commemorating the Miracle of Bolsena. In 1343 he was again in Siena, where he restored a silver bowl for the Consoli della Mercanzia (he carried out a similar task again in 1356). The following year, in Pistoia, where he went as ambassador of Siena, he was commissioned to assess the silver altar of St. James, on which one Master Pero (Pietro da Firenze) was working. Back in Siena in 1358, he executed for the Chapter House of the Cathedral a chalice of silver gilt and enamel, which was then given in pledge to the nuns of S. Prospero for 56 gold florins. It is probable that he also executed the large reliquary in the Church of S. Maria del Carmine in Siena; a document of 1365 mentions it as a worthy rival to the reliquary of Orvieto.

The Reliquary of the Holy Corporal (PLS. 226, 227; VI, PL. 382) is Ugolino's major work and one of the great masterpieces of Gothic goldwork. It was designed — certainly by Ugolino himself and not, as Fumi (1896) suggested, by Lorenzo Maitani, who in any case died in 1330 — in the form of a triptych, with the gabled panels separated by slender pinnacled pilasters. On the pinnacles are small silver figures of angels; the lateral gables are topped by statuettes of saints and the gable of the central panel by a crucifix flanked by two mourners; and small figures of Apostles and prophets are set around the pedestal. It is probable that most of the sculptural parts, which show the influence of Giovanni Pisano (q.v.), were done by Bartolommeo di Tommè, who, as documents of 1377 and 1381 reveal (Machetti, 1929, p. 35), was primarily a sculptor.

The two faces of the reliquary are divided into 12 rectangular compartments with enameled silver plaques. Those on the front show scenes from the story of the Holy Corporal (the Miracle of Bolsena; PL. 226; VI, PL. 382); those on the back, scenes from the Passion (PL. 227). Other enameled plaques representing scenes from the life of Christ are on the cavetto of the pedestal. The plaques are especially interesting for their technique, which differs from the traditional cloisonné and champlevé enamels: Ugolino developed a special procedure that had been initiated at the end of the preceding century by his fellow citizen Guccio di Mannaia for the chalice of Nicholas IV (Assisi, S. Francesco, Treas.). The outlines were engraved on the silver plates, worked in a very low repoussé, and then covered with a layer of translucent polychrome enamel. This procedure aimed at obtaining effects typical of painting, in part through the subtle modulation of color tones produced by the varying thickness of the layer of enamel. The enamels of the Orvieto reliquary can indeed well be compared to the masterworks of contemporaneous Sienese painting whose figural tradition directly inspired them.

It is possible to distinguish a certain (though not very marked) stylistic diversity between the various groups of scenes. Those with the story of the Passion go back to various sources. The Entry of Christ into Jerusalem echoes the composition of the same scene in the *Maestà* of Duccio di Buoninsegna (IV, PL. 290), while the Presentation in the Temple, except for the rare iconographic variant of the kneeling Virgin, has the same composition as the famous painting of this theme by Ambrogio Lorenzetti (1342; Uffizi), strengthening the hypothesis that there was an older common source for both. In all these scenes, however, the prevailing influence is that of Pietro Lorenzetti (q.v.), revealed in the incisive drawing and the dramatic agitation of the figures — for example, those crowded about in the Lament for the Dead Christ (PL. 227). In the scenes of the Miracle of the Holy Corporal, however, the solid modeling of the figures and their rhythmic arrangement within surroundings defined in exact perspective show a more striking similarity to the art of Ambrogio Lorenzetti (q.v.), becoming, in the scene of the receiving of the reliquary in the papal hall (VI, PL. 382), an almost exact copy of Ambrogio's fresco of Boniface VIII receiving St. Louis as a novice (ca. 1331; IX, PL. 197). Inferior in execution, yet marked by the same imaginative spirit as the others, are the scenes on the cavetto of the base, where a few iconographic peculiarities also appear, such as the representation of the angel of the Annunciation still poised in flight. Such iconographic details, together with the elegant delineation in the French style that Toesca (Tr, p. 592) noted also in the enamels of Guccio di Mannaia, demonstrate how elements of diverse artistic tradition, as well as stylistic novelty, had been grafted onto Ugolino's predominantly Lorenzettian art.

Of the same period as the Reliquary of the Holy Corporal is the Reliquary of St. Savinus in the Cathedral in Orvieto (PL. 226), which was executed by Ugolino in collaboration with Viva di Lando. It consists of a Gothic tabernacle rising above a reliquary urn that bears a small statue of the Virgin. Another small figure, that of the saint, is enshrined within the upper level of the tabernacle, and the figure of an angel surmounts the whole. Here the enamels serve a purely decorative function in the singularly elegant architectural ensemble. Toesca holds this work to have been designed, if not perhaps entirely executed, by Ugolino.

Restorations in the Church of S. Domenico in Perugia in 1954 resulted in the discovery of a paten (Perugia, Gall. Naz.) with an enameled medallion of the Annunciation in the center. Its many technical and stylistic affinities with the scenes from the story of the Holy Corporal support the possibility that this paten may have belonged with a chalice described in the 1468 inventory of S. Domenico as bearing the inscription ISTE CALIX FECIT UGHOLINUS ET VIVA DE SENIS and equipped with a paten with the Annunciation in enamel. Also to be attributed to Ugolino, or at least to his workshop, is the Reliquary of St. Galganus in the parish church of Frosini (near Siena), on the front of which are three enamel panels with stories of the saint, showing clear reflections of the Lorenzettis.

Particularly from the point of view of technique, Ugolino's work served as a model for most of the Sienese goldsmiths of the 14th century, as shown by various objects sometimes attributed to him (e.g., a pluvial clasp with the Annunciation; London, Vict. and Alb.); but the great figural skill of the master is absent. His translucent-enamel technique soon spread beyond Siena: to Florence (e.g., a pluvial clasp with the Nativity in the British Museum, attributed to Ugolino by Venturi, IV, p. 938); to Spain (crosses in the cathedrals of Vich and Gerona); and especially to France, where the earliest examples of this technique are found on the pedestal of the statue of the Virgin, given by Jeanne d'Evreux to the Abbey of St. Denis (1339; Louvre) and on a cup with the legend of Tristan (Milan, Museo Poldi Pezzoli), which has also been attributed to Ugolino.

BIBLIOG. G. Milanesi, Documenti per la storia dell'arte senese, I, Siena, 1854, pp. 210–13; A. Texier, Dictionnaire d'orfevrerie, Paris, 1857, s.v. Ugolin de Sienne; C. Schnaase, Geschichte der bildenden Künste, VII, Düsseldorf, 1876, p. 462; L. Fumi, Il Duomo di Orvieto, Rome, 1891, p. 363; L. Fumi, Il Santuario del SS. Corporale nel Duomo di Orvieto, Rome, 1896; R. Erculei, Oreficerie . . . all'Esposizione di Arte Sacra in Orvieto, Milan, 1898; Mostra dell'Antica Arte Senese, Siena, 1904, p. 129 f. (cat.); A. Lisini, Notizie di orafi e di oggetti di oreficeria senese, Arte Antica Senese, II, Siena, 1905, p. 645 f.; Venturi, IV, p. 932 f.; O. von Falke, in G. Lehnert, Illustrierte Geschichte des Kunstgewerbes, I, Berlin, 1907, pp. 315, 320; P. Bacci, Documenti toscani per la storia dell'arte, I, Siena, 1910, pp. 109, 111 f.; V. Lusini, Il Duomo di Siena, I, Siena, 1910, pp. 306, 349; R. van Marle, La scuola pittorica orvietana del Trecento, BArte, N.S., II, 1923–24, p. 305 f.; A. Crowe and G. B. Cavalcaselle, History of Painting in Italy, III, London, 1925, p. 22; S. J. A. Churchill and C. G. E. Bunt, The Goldsmiths of Italy, London, 1926, pp. 50, 72; A. Schmarsow, Italienische Kunst im Zeitalter Dantes, Augsburg, 1928, p. 179 f.; I. Machetti, Orafi senesi, La Diana, IV, 1929, p. 21 f.; A. M. Franchini Ciaranfi, EI, XXXIV, sv.; ThB, s. v.; D. C. Schorr, The Iconographic Development of the Presentation in the Temple, AB, XXVII, March, 1946, p. 28; Toesca, Tr, pp. 590–92, 894–97; F. Santi, Ritrovamenti di oreficerie medioevali in S. Domenico di Perugia, BArte, 1955, p. 354 f.; F. Rossi, Capolavori di oreficeria italiana, Milan, 1956, p. 10 f.

Oreste FERRARI

Illustrations: PLS. 226–227.

UKIYO-E. The movement or school of art called Ukiyo-e had its beginnings in the first half of the 17th century and dominated the greater part of the Edo, or Tokugawa, period (1615–1867), becoming established chiefly in the city of Edo (Tokyo, after 1868). Its full flowering barely extended to the middle of the 19th century, but in subsequent times there have been note-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

worthy survivals, which, at least from the point of view of technique, engage even contemporary interest. Indeed, the art of Ukiyo-e, which consists mainly of prints in black and white and color, has for some time had new practitioners of outstanding talent among the modern artists of Japan, attesting to a persistence of interest that is not merely traditionalistic and that cannot be overlooked.

The designation Ukiyo-e is generally rendered as "pictures of the floating world," though the word *ukiyo* has many shades of meaning that defy translation in current terms. It is certain that Ukiyo-e connotes an innovating movement related to the consolidation of a middle class and to the increasing development of the cities, which stood opposed to traditional academicism, and that it is of great importance not only for Japanese art but for all modern art. The prints of Ukiyo-e had, in fact, not a little influence on the work of the French impressionists and on various other European artists of the 19th century. As a consequence of their success in Europe, the Asiatic artists became more aware of the values inhering in their own figural traditions, and this contributed to the formation of modern trends and schools, which came into being out of this very awareness and constituted the indispensable premise for a more mature contemporary art. It was precisely because of Ukiyo-e that the Western world became interested in Japanese art as a whole, beginning that exchange which has brought about the present artistic integration, so to speak, of the two worlds. (See JAPANESE ART; ORIENTAL MODERN MOVEMENTS.)

SUMMARY. Origins and application of the name (col. 459). Evolution of the technique of the print (col. 460). Ukiyo-e artists (col. 461). Conclusion (col. 464).

ORIGINS AND APPLICATION OF THE NAME. The expression *ukiyo-e* appeared in an earlier context as the designation, or rather the popular description, of a painter of remarkable ability who had a very varied style, ranging from traditional purism, probably not very deeply felt, to a tendency toward novelty, evidenced especially in his water colors. The artist in question was Iwasa Matabei (1578–1650), to whom many works by students and, more especially, imitators, have been lightly attributed, though only a few are securely authenticated. Critics and public were agreed in calling him "Ukiyo-e Matabei," that is, "Matabei, the painter of the elegant world" (Buhot, 1962), in reference to his aristocratic and elevated taste.

The application of the word *ukiyo* to the artists of the new movement, who specialized in portraits of actors and courtesans and in genre scenes (see GENRE AND SECULAR SUBJECTS), was taken by Western scholars — supported by the use of the work in medieval Buddhist texts — to refer to the sadness and transience of life and to represent a rigidly Buddhist and hence negative evaluation of these subjects and thus of the new life and culture of the townspeople. Actually, about the beginning of the Genroku era (1688–1703) *ukiyo* acquired a new meaning, "floating world," which was equivalent to "fashionable world" or "high life"; it had no religio-moralistic overtones, which would certainly have been alien to the mentality of the new Japanese *bourgeoisie* that flourished during the Tokugawa regime. Subsequently the form *ukiyo-e* took on a derived meaning, more or less equivalent to "modern," almost entirely overlooked by Western scholars. Thus, provided it is devoid of the generally accepted Buddhist implications and is related rather to the fluctuations of fashion and of beau monde attitudes, "floating world" is the most accurate rendering of *ukiyo*.

It is very strange, as has been pointed out more than once (Paine and Soper, 1955; Buhot, 1962), that the innovative movement of Ukiyo-e should be linked with the name of Matabei, an artist of undeniably aristocratic spirit who stood quite apart from the artistic aspirations that it gave form to and from the world to which it referred. The real precursors of Ukiyo-e were, in fact, the anonymous popular painters, and it was the technique of wood engraving and of color prints that determined its success. Its evolution shows a progressive enlargement of the public to which the artists addressed themselves. In the initial phase the artists, who were never aristocrats, worked for the rich *bourgeoisie*, who lacked interest in the symbolic and edifying compositions of Zen Buddhism and in Chinese subjects, preferring instead more topical and immediate subjects, especially if they had an erotic flavor. Subsequently the perfecting of the technique of prints led to an increase in production and a keen interest in Ukiyo-e on the part of ranks still less cultured and of lower economic status. Consequently the taste represented in these prints became truly national, even though the old nobility remained aloof and hostile to it, displaying an academic disdain for the new works, which were considered too popular and lacking in refinement.

The attitude of the nobility brought about a break between the traditional and the prevailing taste of the Japanese world, though, in reality, the old tradition was by now exhausted as a result of profound social transformations, which had reduced the samurai, most of whom had become *ronin* (samurai without masters), to a struggling subsistence and which had confined the Buddhist spirit within the walls of the monasteries. On the other hand, Ukiyo-e appears to have been closely connected both with the Kabuki theater (see SCENOGRAPHY) and with *haikai*, a new form of poetry derived, but substantially different, from the classic *tanka*. Men of letters, playwrights, and painters sought to address themselves to the people and to emerge from the rarefied atmosphere of a tradition that — despite some remarkable survivals, especially in the area of the theater — must in general be regarded as crystallized, partly as a result of the rigid isolation in which Japan was kept by its foreign policy of the time.

All the various forms of this popular and innovative movement showed a greater, at times even exaggerated, expressive intensity and a far-reaching fidelity to the world of reality that asserted itself independently of those symbols and conventions which remained particularly perceptible in *haikai*, even though *haikai* sought to express visual impressions and intense transitory moods. The break with the Sinicizing tradition in the field of painting, the wide diffusion of new works created with the help of such semimechanical means as blocks for prints (not to speak of the profound revolution that the prevalence of their use produced in the esthetic tradition and attitude of Japan), the ever wider contacts of the artists with the popular masses — all these developments brought about a bold renewal, from which in turn derived the subsequent artistic evolution of Japan, especially from the time when the interest and enthusiastic appreciation of the Western world confirmed the existence of universal and unsuspected values in such an unconventional and lively art as that of Ukiyo-e.

EVOLUTION OF THE TECHNIQUE OF THE PRINT. The use of prints was related to the popular orientation of Ukiyo-e, but it also represented the quest for an expressive means that might better lend itself to the subjects and the spirit of the new trend than did the traditional techniques. In the period of classical Japanese painting, wood engraving was sometimes used (from the 12th century) for the preliminary outlines of pictorial compositions, as seen in the painted paper fans inscribed with the Lotus Sūtra (Jap., Hokekyō) in the Shitennōji in Osaka (VIII, PL. 286). Used especially among the Buddhists for illustrating books, wood engraving burgeoned later (beginning early in the 17th century) in an unexpected manner, accompanying the rise of the *bourgeoisie*. Thus the illustrations for novels took their place beside other genres, such as those of the *kanazōshi*, or popular books; the *jōruri* recitations accompanying the puppet theater; the *hyōban-ki*, anecdotes about celebrated actors and famous courtesans; and the collections of routes and itineraries.

The activity of the early Ukiyo-e artists caused the technique of prints to advance rapidly. In the first prints, the *sumizuri-e*, which were produced from a single block and printed in black, the lines of the drawing gradually became clearer and finer; the summary hand coloring of Moronobu (see below) was succeeded by the use of more varied and brilliant colors, but still applied by hand. Then there appeared the *tan-e*, the first prints to be colored with a brush and so named because of the predominance of *tan* (orange-red lead), and the *beni-e*, first

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

made and distributed by Masanobu (see below), with their delicate tones and wider range of colors, predominantly *beni* (crimson, obtained from the safflower), yellow, green, and violet. Those *beni-e* in which the black of the outlines was given the lustrous appearance of lacquer (*urushi*) by the addition of glue became known as *urushi-e* ("lacquer pictures"); the latter term is largely replacing *beni-e* because of possible confusion with *benizuri-e* (see below). Additional luster was lent to the *urushi-e* by sprinkling particles of brass or mica on the wet pigments. But the chromatic simplicity of prints remained a drawback that was deeply felt by artists and public — a fact that led some Ukiyo-e artists to abandon the technique of the print and to continue with that of the brush. By the same token, there appeared the technique of multiple impressions with three successive blocks, though its use was limited to certain de luxe calendars; because of the consistent use of soft rose color accompanied by green, yellow, and greenish blue, prints so produced came to be called *benizuri-e*.

The triumph of the art of printmaking was, however, to come with full-color prints, the *nishiki-e*, or "brocade pictures" (PL. 228), which made their appearance at New Year's in 1765. Into these first *nishiki-e* went not only the genius of Harunobu (see below) but also the talents of many of the men of letters and the printers of Edo, to say nothing of the enterprise of the ardent amateurs of the art (military men of middle rank and wealthy merchants) who commissioned the work. The results were stunning. The *nishiki-e*, making use of five, six, seven, and sometimes even eight different colors, clear and lively, constituted the definitive statement of the technique of the print. It might even be said that here the technique of the woodblock print reached its absolute peak. The decline that began after the death of Hiroshige in 1858, brought about in part by excessive commercialization, seems to have been arrested in the modern period. In fact, while the technique of *nishiki-e* persists, there is currently a revival of the oldest technique, that of *sumizuri-e*, which appears, for example, in the works of Shikō Munakata (see below), and there has also been a more or less tentative use of other techniques, of Western derivation, involving either the material of the printing surface or the coloring and drawing. In a sense the phenomenon of Ukiyo-e endures into the present, forming part of the profound renewal of Japanese art, in which, however, there is complete awareness of the more vigorous aspects of its own tradition, especially in its more brilliant achievements.

UKIYO-E ARTISTS. As an art movement, Ukiyo-e became consolidated and acquired a definite character, so to speak, through one of its great personalities, Hishikawa Moronobu (active 1660s–94), undoubtedly the most representative artist of the new trend. Through him Edo became the principal center for the production of prints, while the illustration of books, in which Moronobu specialized (the *e-hon*, or picture books, published by him number more than 130), became independent of the text and took on an unforeseen and unforeseeable artistic autonomy. Moronobu's subjects (PL. 229) are popular festivals, genre scenes, particularly the activities of artisans and tradesmen, erotic scenes of the Yoshiwara (Edo's pleasure quarter), and divers feminine themes. They included paintings (PL. 229, *above*) as well as prints, and the theater of the time was also among his subjects, as is shown by a screen in Boston (Mus. of Fine Arts; Paine and Soper, 1955, pl. 109B).

If Moronobu (who had had years of training in the classical styles of painting) succeeded in achieving woodblock engravings that could render effects of drawing and design equal to those obtained by traditional means, the members of the Torii school, profiting from the teachings of Moronobu, further improved the technique of the print and thus laid the foundation for the ultimate success of the new movement. The early work of Torii Kiyonobu I (1664–1729), the founder of the Torii school, was in the field of book illustration, carried out in a style much influenced by Moronobu's, but he came to specialize in work for and about the Kabuki theater, including representations of celebrated actors (PL. 230). Torii Kiyomasu I (1696–1716), probably his son, and Torii Kiyonobu II (1706?–63), presumably the son of Kiyomasu I, maintained the Torii style, portraying figures of actors and courtesans (PL. 230). Thus the activities of these two generations of Torii contributed to a wider diffusion of the favorite subjects of Ukiyo-e, despite the hostile reaction of the traditionalists.

This was the time of Ogata Kōrin (q.v.; 1658–1716), of the poet Bashō, of magnificent actors, and of such talented painters and printmakers as Okumura Masanobu (ca. 1686–1764), an expert in the technique of the print (PLS. 230, 231). Working somewhat later was Ishikawa Toyonobu (1711–85), who was influenced by Masanobu and who was one of the major figures of Ukiyo-e (PL. 232). Representative of a rather elegant trend in illustrating that became established chiefly in Kyoto was Nishikawa Sukenobu (1671–1751), who carried on, in his own manner, the tendencies favored by Masanobu.

Ukiyo-e was now on the way to its most brilliant phase. Mention has already been made of the importance of Suzuki Harunobu (1725–70; PL. 233; IV, PL. 446), to whom the development of *nishiki-e* is in great part due, in the technical evolution of the print. This technical triumph seems to have intensified his genius, which, enriched by the experience of his predecessors and contemporaries (particularly Toyonobu and Sukenobu), created feminine figures of exquisite, almost supernatural grace — images annotated with environmental features, architectural or landscape, or accompanied by animal figures, which confirm and heighten the elegance of the composition. In the development of Ukiyo-e, Harunobu represents a turning point that is not merely technical. The elegance of his works (which rarely portray cortesans and never actors, for his world was that of the lower middle class, from which he drew his ideal of feminine beauty) is brought about by stylization, by clear, fine drawing, and by the juxtaposition of colors. His vision is never very deep, even in the open-air scenes, where the surroundings in which the figures move are barely indicated; it becomes descriptive only in rare cases (some of doubtful authenticity). The faces of his women, realized in delicate and elegant lines, acquire expression through the whole attitude of the figure. His *Girl on Her Way to the Shinto Shrine on a Stormy Night* (Akiyama, 1961, pl. 169), *Lovers in the Snow* (Michener, 1959, pl. 113), and *Shōki Carrying a Girl* (ibid., pl. 101; in which the demon-queller is shown carrying a girl on his shoulders in a raging wind and rain) are excellent examples of this indirect and yet very clear expressiveness, producing effects which, though differing widely, are profoundly moving. The slightly humorous interpretation of ancient legends and Chinese tales is another of the characteristics of Harunobu, certainly one of the more lettered of the Ukiyo-e artists, who for this reason — and also because of his samurai origin — had a rich and cultured clientele, enthusiastic for his creations.

Indeed the personality of Harunobu was so dominant that the early works of Isoda Koryūsai (active 1760s–80s) are hardly distinguishable from those of the master; its effects are evident, though perhaps in somewhat lesser measure, in the work of Katsukawa Shunshō (1726–92) and Ippitsusai Bunchō (active mid-1760s through 1770s), both of whom specialized in portraying actors. Koryūsai, after Harunobu retired, abandoned the latter's rich polychromy and returned to the representation of the courtesans and apprentices of the "green houses" (brothels), developing at the same time the effects obtainable from black of greater or lesser intensity, and he brought the depiction of women back to a descriptive realism of considerable power (PL. 228), seeing them without the poetical aura with which Harunobu had invested them. Koryūsai also set the standard print size called *ōban* (15 × 10 in.), and the compositions became more profound and detailed, though they remained no less coherent and refined.

Shunshō (PL. 233; IV, PL. 447) strove for realism in the faces and expressions of his actors while attacking new compositional problems, and he explored the interesting subject of wrestlers (*sumō*), with their gigantic fat-laden bodies. Shunshō founded a school that, carrying on after him, was one of the finest within Ukiyo-e, numbering in its ranks such famous artists as Katsukawa Shunkō (1743–1812), Katsukawa Shunjō (d. 1787), and Katsukawa Shunei (1762–1819).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

With Torii Kiyonaga (1752–1815), the old studio of the Torii, which had sheltered artists of great talent, once more assumed a leading role. A pupil of Torii Kiyomitsu (1735–85), Kiyonaga was soon able to shake off the influence of Harunobu and of Koryūsai, while showing a predilection for the subjects to which Kiyomitsu had also been partial — namely, aspects of feminine beauty. In Kiyonaga there appeared an exceptional balance of realism and idealization, so that his women, with their calm, sweet faces — often represented against the background of a famous view of Edo or in a sumptuous interior — constituted a novelty. As for technique, he tended to join together two, three, or sometimes even five sheets to create a procession of these images that dominate the surroundings in which they are set. It is perhaps fortuitous that the contrast between the figures and the minutely described landscape in some of his prints gives them a feeling of deep sadness, as if there weighed upon them the fading light of a gray wintry afternoon. At other times, however, he represented the effects of sun-baked haze, and always he idealized his female figures in their magnificent robes, harmonizing the proportions according to a canon of beauty all his own (IV, PL. 448). Kiyonaga's interpretation of feminine beauty can be said to have been decisive in the development of one of the greatest personalities of Ukiyo-e, Utamaro (q.v.), who — though he represents an opposite, but nevertheless related, direction — seems to have shared Kiyonaga's dissatisfaction with the actual format of prints. Whereas Kiyonaga resorted to the juxtaposition of sheets, Utamaro favored a new type of image, the bust portrait, or *ōkubi-e* (lit., large-head picture), in which the figure is in the foreground and the face is large. As to subjects, he too was primarily a painter of courtesans, though he also made studies of natural life and of the pictorial effects of snow.

Not far removed from Utamaro in time or in eminence was Hosoda (or Chōbunsai) Eishi (1756–1829; PL. 234), a painter and printmaker of samurai origin. His prints are unusual for their subdued colors and for the delicacy of the feminine types.

The subjects treated by Tōshūsai Sharaku (1749–1803), 28 of whose prints represent the same type of composition as Utamaro had used, were, at least so far as is known, exclusively actors (PL. 234). Among the artists of Ukiyo-e, Sharaku, with his espressive power and his chromatic sensitivity, is truly an enigma. His highly personal style stands out from that of Shunshō, so that even at first glance it is easy to recognize as his a series of at least 136 prints, all published by Tsutaya Jūzaburō and all signed with the artist's name. What is really extraordinary is that this long series of works can be dated with precision to a period of no more than ten months, beginning in the spring of 1794. The personality and career of Sharaku continue to be the subject of research and examination. The data currently accepted by most students of Ukiyo-e indicate that he may have been a No actor named Saitō Jūrōbei. But this identification would account neither for the sudden rise of his artistic personality nor for the extreme brevity of the meteoric span of his unquestionable genius, which was little appreciated until Western critics discerned its greatness — without, however, dispelling the mystery enveloping it.

The principal phase of Ukiyo-e may be said to have ended with Sharaku, apart from certain figures of outstanding caliber such as the artists of the Utagawa school. Utagawa Toyoharu (1735–1814) was the founder of the school; Utagawa Toyokuni (Toyokuni I; 1769–1825; PL. 235) produced prints that were considered to rival Utamaro's. The Japanese environment was evolving; the political situation became taut. The name Ukiyo-e lost much of its fascination, and it was quickly replaced by other expressions signifying up-to-dateness and novelty. Another factor that came into play was that the spell of the theater and of the pleasure quarters was diminishing as the habit of traveling grew more widespread.

Thus there was a shift in subject matter, which was to be developed above all by Hokusai (1760–1849) and Hiroshige (1797–1858; qq.v.). It might be said that for the West — and to a certain extent even for Japanese critics — these two names sum up the greatness of Ukiyo-e. Undoubtedly the curious personality of Hokusai, with his highly personal and almost unreal visions of nature, was as much calculated to strike the imagination of Western critics and scholars as his curious way of bringing himself to the attention of the public had struck his Japanese contemporaries. But the greatness of Hokusai is not embodied solely in his impressionistic interpretations of Fuji (II, PL. 30; IV, PL. 447; VII, PL. 297) and in his illustrations for the famous *Hundred Poems* collection, for his personality is largely expressed in the 15 albums of the *Mangwa* (VII, PL. 299), sketches of varied subjects, which show both his bizarrerie and, unquestionably, his genius. Hiroshige, on the other hand, who in his maturity was a contemporary of Hokusai, being 37 years his junior, appears to have been immensely more balanced, though in a sense less powerful (PLS. 235, 236). Wholly averse to exaggeration, he was an acute observer and a most effective interpreter of the Japanese landscape. Hiroshige's creations never transport the viewer into the world of fairy tale, but they make him feel, as if in actuality, the disagreeableness of the driving rain, the heaviness of the mud, and the warm caress of the sun. With Hiroshige ended the apogee of the art of the print, which continued, however, through the work of the last pupils of Toyokuni, though it was by then reduced to representing ships and European types and was increasingly commercialized and influenced by photography. Its resumption after a long lapse — and excluding all of its former mechanical processes, of course — is a recent occurrence and so far one of relatively limited importance.

CONCLUSION. The technique of the print in its continuance into modern times in Japan does not, naturally, have the wide popular diffusion that Ukiyo-e enjoyed, even though many contemporary artists who devote themselves to this art form are remarkably accomplished. Their descent from Ukiyo-e is often merely a matter of technique — except for the indisputable will of these artists to create distinctly Japanese works. The old subjects have disappeared, and only a limited group of printmakers, among them Un'ichi Hiratsuka (b. 1895), whose works have affinities with *sumi-e* and with Moronobu's black-and-white prints (*sumizuri-e*), and Shikō Munakata (b. 1903; X, PL. 426) venture willingly into traditional subjects, such as views of famous temples and depictions of divine and human Buddhist figures — without on this account, however, rejecting other sources of inspiration. Many others, such as Gen Yamaguchi (b. 1903), Yoshikane Kinoshita (b. 1893), and Hatsuyama Shigeru (b. 1897) are nonobjective or surrealist artists. And yet, on careful consideration, it appears that the spirit of Ukiyo-e has not altogether disappeared. It lives on, in fact, in the works of these modern epigoni as the echo of that glorious tradition which was actually a great turning point in world art and which modern Japanese critics are able to evaluate in a spirit completely different from that of the first enthusiastic European admirers, who sought — and to a certain extent found — in the prints of Ukiyo-e the key to a renewal that had been a long time in the making but had not yet taken definite shape.

The influence of Japanese prints on Western art, and especially on the impressionists, remains a delicate problem. The works that aroused the interest of such artists as Manet, Monet, Degas, Whistler, Van Gogh, and Gaugin were certainly not the finest; it is now known that the 100 prints sent to the Exposition Universelle in Paris in 1867 by the Shogun government had been chosen primarily with a view to illustrating, on the one hand, Japanese costumes and crafts and, on the other, the countryside and cities (especially Edo). It seems impossible at first glance that works by artists high in popular esteem but far inferior to the major representatives of Ukiyo-e could raise such a stir in the advanced and cultivated art world of the Paris of that day. Furthermore, there is abundant evidence that only with the 1889 Paris Exposition did the great masterpieces of Utamaro and Harunobu become known in the West; thus the conclusion seems inescapable that even a mere reflection of what had been the true greatness of Ukiyo-e, presenting a solution to common and still unsolved problems among Western artists, was able to bring about unexpected consequences chiefly because the Japanese suggestion, charged with an exotic fascination, came unexpectedly into an environment made receptive by inner travail

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and rendered fruitful even the excessive enthusiasm of its discoveries.

BIBLIOG. D. Amsden, Impressions of Ukiyo-ye, the School of Japanese Colour Print Artists, San Francisco, 1905; J. Kurth, Suzuki Harunobu, Munich, 1910; F. W. Gookin, Japanese Colour-Prints and Their Designers, New York, 1913; Ukiyo-ye, Tokyo, 1915–20 (periodical); J. Kurth, Sharaku, Munich, 1922; B. Stewart, Subjects Portrayed in Japanese Colour-Prints, London, 1922; L. Binyon and J. J. O'Brien Sexton, Japanese Colour Prints, London, 1923; J. Kurth, Die Geschichte des Japanischen Holzschnitts, 3 vols., Leipzig, 1925–29; K. Shibui, Catalogue des estampes érotiques primitives du Japon, 2 vols., Tokyo, 1926–38; L. Binyon, Painting in the Far East, London, 1934; E. Clavery, L'art des estampes Japonaises en couleurs, 1680–1935, Neuilly-sur-Seine, Paris, 1935; H. G. Henderson and L. V. Ledoux, The Surviving Works of Sharaku, New York, 1939; C. Hirano, Kiyonaga: A Study of His Life and Works, Cambridge, Mass., 1939; Y. Noguchi, Harunobu, London, Tokyo, 1940; L. V. Ledoux, Japanese Prints of the Ledoux Collection, New York, Princeton, 1942–51; Pageant of Japanese Art, II, Tokyo, 1952; S. Fuikake, Japanese Wood-block Prints, Tokyo, 1953; G. Auriti, Compendio di storia della Cultura Giapponese dalla età arcaica alla restaurazione del Meigi (1868), Rome, 1954; J. Hillier, Japanese Masters of the Colour Print, London, 1954; J. A. Michener, The Floating World, New York, 1954; I. Kondō, Selected Masterpieces of Ukiyo-e Prints, Tokyo, 1955; R. T. Paine and A. Soper, The Art and Architecture of Japan, Baltimore, 1955; O. Statler, Modern Japanese Prints: An Art Reborn, Rutland, Vt., Tokyo, 1956; O. E. Holloway, Graphic Art of Japan: The Classical School, London, 1957; H. Münsterberg, The Arts of Japan: An Illustrated History, Tokyo, 1957; B. W. Robinson, Japanese Landscape Prints of the Nineteenth Century, London, 1957; L. Hájek, The Osaka Woodcuts, London, 1959; J. A. Michener, Japanese Prints from the Early Masters to the Modern, Rutland, Vt., Tokyo, 1959; T. Akiyama, Japanese Painting, Geneva, 1961; F. Heller, Kontur und Faltengebung im Japanholzschnitt, Cologne, 1961; S. Takahashi, Ukiyoé Nihyaku-Gojūnen (The Japanese Wood-block Prints through Two Hundred and Fifty Years), Tokyo, 1961 (Eng. trans., R. Matsumoto); J. Buhot, Arte del Giappone, Le civiltà dell'Oriente, IV, Rome, 1962, pp. 1265–1350; R. Lane, Masters of the Japanese Print: Their World and Their Work, New York, 1962; R. Hempel, Holzschnittkunst Japans, Landschaft, Mimen, Kurtisanen, Stuttgart, 1963; H. B. Boger, The Traditional Arts of Japan: A Complete Illustrated Guide, London, 1964, pp. 51–66; M. Gentles, Masters of the Japanese Print, New York, 1964 (cat.); M. Ishida, Japanese Buddhist Prints, Tokyo, 1964; R. Penkoff, Roots of the Ukiyo-e: Early Woodcuts of the Floating World (Ball State Monograph no. 2), Muncie, Ind., 1964; S. Takahashi, ed., Hiraki Collection: Ukiyoé, Tokyo, 1964 ff.; D. B. Waterhouse, Haronobu and His Age: The Development of Colour Printing in Japan (Br. Mus. pub.), London, 1964 (with 124 pls.); M. Narazaki, The Japanese Print: Its Evolution and Essence, Tokyo, Palo Alto, 1966; P. C. Swann, The Art of Japan from the Jōmon to the Tokugawa Period, New York, 1966, pp. 197–211; F. A. Turk, The Prints of Japan, New York, 1966; T. Yoshida and R. Yūki, Japanese Print Making: A Handbook of Traditional and Modern Techniques, Rutland, Vt., Tokyo, 1966; M. W. Young and R. J. Smith, Japanese Painters of the Floating World, Ithaca, 1966 (cat.).

Mario BUSSAGLI

Illustrations: PLS. 228–236.

UNION OF SOVIET SOCIALIST REPUBLICS. The U.S.S.R. is made up of 15 constituent republics of which by far the largest is the Russian Soviet Federated Socialist Republic. This article begins with the Russian Republic and takes up the other republics in geographical order from west to east. The artistic production of the autonomous republics of Siberia (Yakutia, Tuva, and Buryat) is treated last (see also SIBERIAN CULTURES). These territories occupy a vast geographical area that extends from eastern Europe to the Pacific Ocean and from the Arctic Ocean in the north to the steppe and deserts of Central Asia in the south, and they are inhabited by peoples of different races, languages and traditions, thus accounting for the diversity of the artistic development. An important factor in the cultural development has been the relationship between the peoples of the U.S.S.R. and those of the Near and Middle East, of the Mediterranean zone, and of China.

The territory of the U.S.S.R. is an area of ancient artistic cultures beginning in the Upper Paleolithic period, continuing in the Neolithic and Bronze ages (see ASIATIC PROTOHISTORY), and culminating in the steppe cultures (q.v.). From the 2d to 1st millennium B.C. the civilizations of western Asia, Iran, and Greece were influential in determining various lively centers of culture such as those in the Caucasus and Azerbaijan, the kingdom of Urartu (q.v.) in Armenia, the Greco-Scythian civilization on the Black Sea (see GRECO-BOSPORAN AND SCYTHIAN ART), the Greco-Bactrian kingdoms (see BACTRIAN ART), and the kingdoms of Sogdiana and Khwarizm (qq.v.). The contributions of Islamic culture (see ISLAM) appeared later in these same zones. The expansion of the Christian civilization was noticeable in Armenia (see ARMENIAN ART) and in Georgia (see GEORGIA, ART OF), but above all Byzantium exerted a profound influence on early Russian art. Kiev was the center of this early art (see SLAVIC ART). Chinese influences were spread through the migrations and invasions of Tatar-Mongol peoples throughout Central Asia (see ASIA, CENTRAL). Owing to the crisis caused by the invasions, the politicocultural center of Russia gradually shifted during the course of the Middle Ages toward the north; Moscow continued the ancient Russian artistic heredity but also was open to Western influences, from the Romanesque to the Gothic and the Renaissance.

At the beginning of the 18th century the secular trends, which had been present in various forms of art since the 16th century, were consolidated, and the new politicocultural center of St. Petersburg fostered the baroque (see BAROQUE ART) and neoclassic styles (q.v.). In the 19th and the early 20th century the cultural evolution of the peoples who had become a part of the Russian empire paralleled that of other European countries. The contact with Russian culture facilitated artistic progress in all parts of the Russian empire, particularly in the most backward peripheral zones. The process of unification was effected when the Soviet regime was established. The impetus of socialist realism created the conditions for this unification without altering traditions and, in fact, stimulating the continuance of local styles (see UNION OF SOVIET SOCIALIST REPUBLICS: MODERN MOVEMENTS).

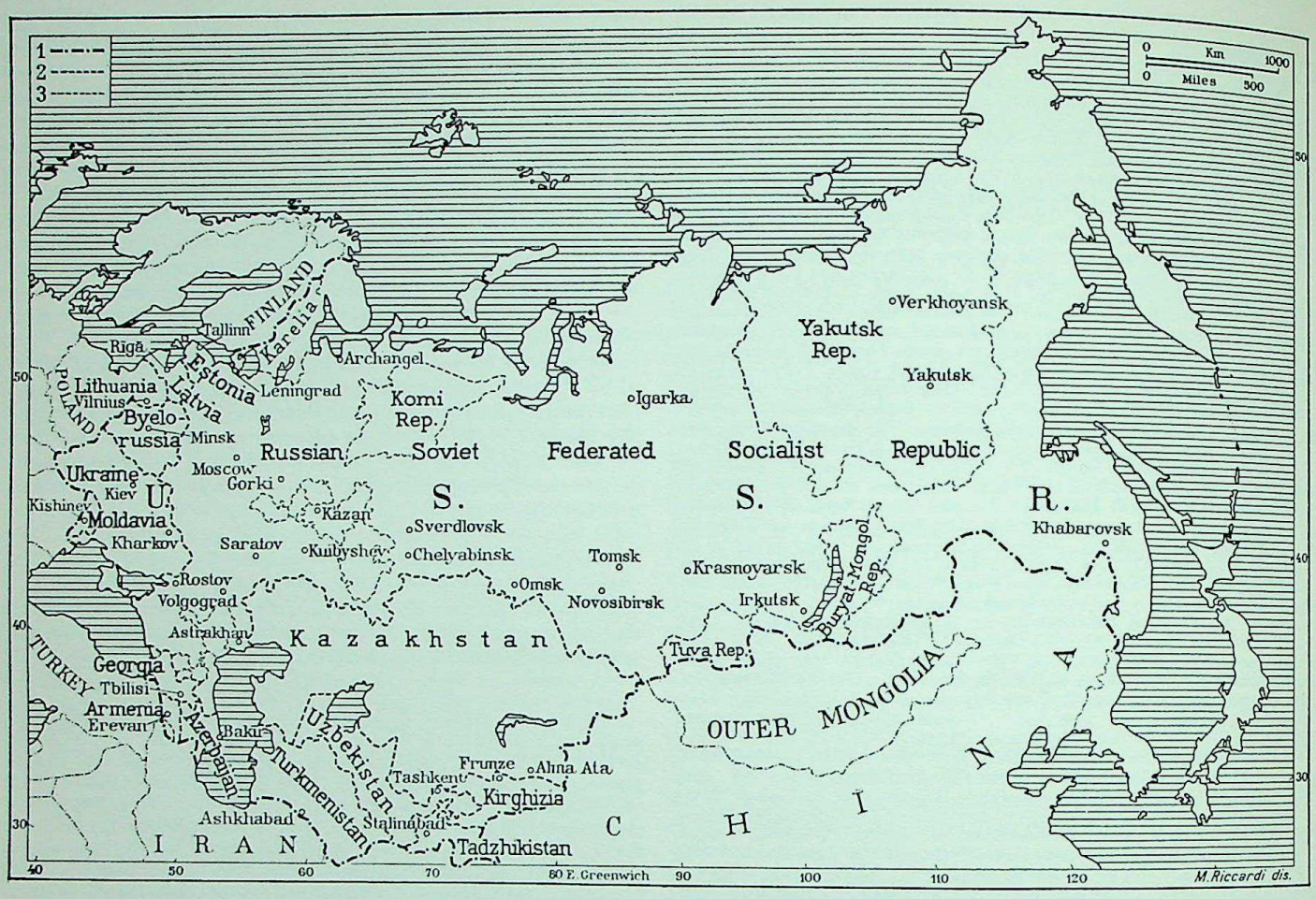
SUMMARY. Russian Republic (col. 466): *Historical and artistic periods: a. Antiquity; b. Medieval and modern periods; c. The Soviet period; Art centers.* Byelorussia (col. 508): *Historical and artistic periods; Art centers.* Ukraine (col. 511): *Historical and artistic periods: a. Antiquity; b. Medieval and modern periods; c. The Soviet period; Art centers.* Moldavia (col. 525): *Historical and artistic periods; Art centers.* Estonia (col. 526): *Historical and artistic periods; Art centers.* Latvia (col. 528): *Historical and artistic periods; Art centers.* Lithuania (col. 531): *Historical and artistic periods; Art centers.* Georgia (col. 533): *Historical and artistic periods: a. Antiquity; b. Medieval and modern periods; c. The Soviet period; Art centers.* Armenia (col. 541): *Historical and artistic periods: a. Antiquity; b. Medieval and modern periods; c. The Soviet period; Art centers.* Azerbaijan (col. 545): *Historical and artistic periods; Art centers.* Kazakhstan (col. 549): *Historical and artistic periods; Art centers.* Turkmenistan (col. 551): *Historical and artistic periods; Art centers.* Uzbekistan (col. 554): *Historical and artistic periods: a. Antiquity; b. Medieval and modern periods; c. The Soviet period; Art centers.* Tadzhikistan (col. 561): *Historical and artistic periods; Art centers.* Kirghizia (col. 564): *Historical and artistic periods; Art centers.* The autonomous republics of Siberia (col. 565): *Yakutia; Tuva; Buryat.*

RUSSIAN REPUBLIC (Russian S.F.S.R.). *Historical and artistic periods.* The Russian Soviet Federated Socialist Republic, the largest of the constituent republics of the U.S.S.R., occupies a leading place in the artistic life of the nation. The Great Russian people, who account for the bulk of the republic's population, and the numerous other peoples that inhabit its territory have contributed to the development of its multinational art.

a. Antiquity. The most ancient artistic remains (ca. 30,000 years old) date from the Upper Paleolithic period: ornamental incisions on bone (the Talitskaya site near Perm); female statuettes and animal figurines of stone and mammoth tusk; engraved representations of mammoths, elks, snakes, birds, and fish on bone and horn (Kostenki and Gagarino on the upper Don River, Malta near Irkutsk, Buret on the Angara River); and cliff drawings (a bull and two horses near Shishkino on the Lena River and painted representations of mammoths, horses, and rhinoceroses in the Kapov Cave in the southern Ural region). At Gagarino, Kostenki, Malta, and Buret, settlements have been uncovered, with dwellings that were dug partly into the ground level and had frameworks of wooden posts, mammoth bone, reindeer antlers, and other materials.

Relics of the Neolithic period are more numerous and much more widespread. Exploration has revealed that for dwelling purposes there were earth houses dug partly below the ground, huts of plaited twigs, and structures on piles; the settlement on the Modlona River in the Vologda district had quadrangular houses with plaited twig walls and double-sloped roofs (beginning of the 2d millennium B.C.). Various types of pottery have been uncovered (with decoration consisting of small pits and comb marks in the forest belt from Karelia

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Union of Soviet Socialist Republics. *Key*: (1) Modern political boundary; (2) boundaries of the soviet socialist republics; (3) internal boundaries of the Russian Republic.

to the Transural; with a wavy ribbon design and plaiting in the easternmost area), as well as figurines of persons and animals made of stone, bone, horn, and wood (realistic elk heads of bone from the Oleni Island burial in Lake Onega, end of the 3d–2d millennium B.C.; stone fish from eastern Siberia, 4th–2d millennium B.C.; human and bear figurines of bone from Uelen on the Chukchi Peninsula, end of the 2d–beginning of the 1st millennium B.C.). From the Shigir and Gorbunovo peat bogs (Sverdlovsk district) there are realistic, carved wooden figures of animals and birds, ladles with birds' heads, and anthropomorphic idols (3d–2d millennium B.C.). Schematized portrayals of elk, deer, birds, boats with rowers, and symbols of the sun and moon (ca. 2500–1000 B.C.) are incised on the granite cliffs of Lake Onega (at Besov-Nos and Peri-Nos) and the White Sea (at Besovy-Sledhi and Zalavruga); sometimes they form an integrated composition (the scene of the driving of elk at Zalavruga).

Many artistic relics from the Aëneolithic period and the early Bronze Age (which occurred in the southern regions much earlier than it did in the north) have been preserved in burial tumuli (kurgans). Barrows in Maikop and the northern Caucasus (middle and late 3d millennium B.C.) have yielded gold and silver figures of animals, as well as silver objects with engraved figures of animals and hilly landscapes — ornaments that testify to ties with the civilizations of the ancient Orient and Transcaucasia. To the period from the end of the 3d to the 2d millennium B.C. belong dolmens and barrows containing local bronze goods in the northern Caucasus. In the transition period from the Bronze to the Iron Age the Kuban (2d millennium–7th cent. B.C.) culture flowered in the central Caucasus (bronze artifacts with elaborate chased and engraved ornamentation, with representations in the "animal style," and with figures of anthropomorphic divinities). In the open steppe and wooded steppe zones of the European part of the R.S.F.S.R. there was a consecutive development of cultures designated by their types of burials: in the last quarter of the 3d millennium B.C., the Pit culture (clan settlements with semisubterranean dwellings; pottery with round and pointed bases and with whipped-cord and incised ornamentation); in the first half of the 2d millennium B.C., the Catacomb culture (censers, flat-bottomed pottery with a more elaborate corded and dentated design); and from the second half of the 2d millennium to the beginning of the 1st millennium B.C., the Timber-frame culture (semisubterranean dwellings with beam frames above ground and two- or four-sloped roofs; sharp-ribbed and jar-shaped pottery decorated with comb-impressed and incised geometric designs). Characteristic of the Fatyanovo culture of the forest belt (end of 3d–2d millennium B.C.) is round-bottomed and often polished pottery with incised, detate, and whipped-cord ornamentation (stripes, festoons, and lozenges). Bronze adornments, idols, and weapons with ornamentation and animal figures have come to light in the Volga, Kama, and Ural areas and in Siberia as far as Lake Baikal. In the southern part of western Siberia, the following cultures developed: from the end of the 2d to the first half of the 2d millennium B.C., the Afanasievo culture (pottery with pointed and spherical bases and with a simple geometric design; gravestones with representations of birds and human figures); from about the 18th to the 13th century B.C., the Andronovo culture (flat-bottomed pottery with complex comb-impressed and incised geometric ornamentation; on the Yenisei River, stone sculptures portraying forebears); and at the end of the 2d and beginning of the 1st millenniums B.C., the Karasuk (Kara Suk) culture (pottery with more graceful and restrained ornamentation; columns with stylized representations of human faces, animals, and cosmic signs). In eastern Siberia, which had ties with China, local traditions manifested themselves in cliff drawings and rocks with relief representations of deer.

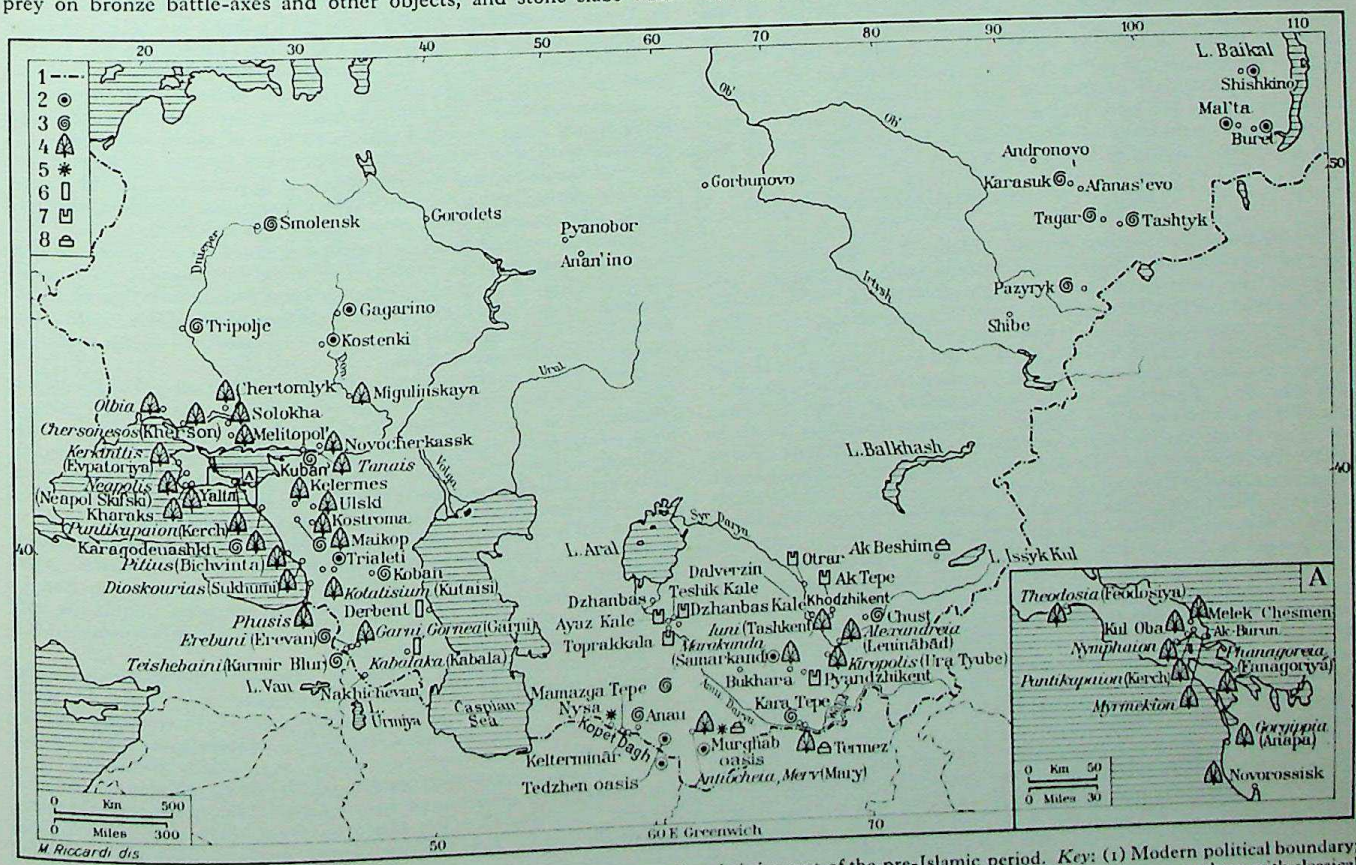
At the beginning of the 1st millennium B.C. (first in the northern Caucasus) the Iron Age culture spread throughout the territory of the Russian Republic. In the open steppe belt it is related to the Cimmerians (9th cent. B.C. to our era) and to the Scythians who settled north of the Black Sea and the Sea of Azov (8th–7th cent. B.C.); later, it is related to the Sarmatians (Savromats) who roamed between the Don and Ural Rivers (7th–3d cent. B.C.) and to the Sindian and Maeotian tribes of the Azov and Kuban areas (see GRECO-BOSPORAN AND SCYTHIAN ART). Economic and proprietorial differentiations resulted in the appearance of rich barrows of tribal chiefs and notables. The Scythian tumuli had wooden funerary chambers with four-sloped roofs; earthworks and roughly executed stone statues have also survived. In the barrows of the Kuban region there have been found extremely vivid examples of the local "animal style": expressive, stylized representations of wild beasts, birds, and

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

griffins [a gold panther from the Kelermes tumulus (VI, PL. 463), a gold deer from Kostroma, and bronze chariot parts from the village of Ulski — all of the 6th cent. B.C.]. In the Scythian burials there are Greek artifacts testifying to connections with the Greek cities on the northern coast of the Black Sea. In the 6th and 5th centuries B.C. many Greek towns that formed part of the Bosporan kingdom were founded — Phanagoreia (on the Taman Peninsula), Gorgippia (mod. Anapa), Tanais (at the estuary of the Don), and Pantikapaion (mod. Kerch). Among the remarkable examples of Greek architecture and art are fine tomb structures with corbeled roofs and vaulted domes, stone public and domestic buildings, frescoes in houses and crypts (VI, PLS. 462, 472), remarkable polychrome terra-cotta vessels with figural decoration (VI, PL. 469), sarcophagi (VI, PLS. 469, 474), and steles with reliefs. There are evidences of the local art that predominated in the first centuries of our era. Also noticeable is the Greek influence on the art of the local tribes, which formed the Sindian state on the Caucasian coast (5th cent. B.C.). In the chased gold plaque with cult scenes from Karagodeuashkh on the Taman Peninsula (VI, PL. 465), as well as in the silver rhytons from Karagodeuashkh and the Kuban area, both Greek and local traits are blended. By the 2d century B.C. the Sarmatians had settled in the areas of the Kuban, the north Caucasus, and the lower Don. Their art (gold diadems, flagons, bracelets, vessels, fibulae, earrings, etc.) combines elaborate decorative representations in the "animal style" with polychrome incrustations of stones and colored glass. This combination is characteristic also of the art of the Sarmatian tribe of Alans who were settled until the 9th century of our era along the Don, and until the 13th in the northern Caucasus. The steppe Alans are represented by fortifications of stone slabs with carved geometric ornamentation and with schematized representations of animals and persons; by subterranean burials with spherical vaults; and by semisubterranean houses with walls of plaited twigs smeared with clay. Rich adornments, arms, harnesses, and textiles exemplify the culture of the northern Caucasian Alans (10–12th cent.).

The Dyakovo culture existed in the forest belt along the upper Volga and Oka rivers (7th cent. B.C.–5th cent. of our era; fortified settlements with houses of earth, pottery with "textile" motifs, metal adornments, and carvings in bone and horn); along the middle Volga, the similar Gorodets culture (pottery with "antler" designs); and along the Kama River the Ananino culture (8th–3d cent. B.C.; surface dwellings, stylized ornamental representations of beasts and birds of prey on bronze battle-axes and other objects, and stone slabs with engraved representations of warriors), which was replaced by the Pyanobor culture (3d cent. B.C.–5th cent. of our era; timber huts, bronze adornments, and cult figures). Over large territories extending as far as western Siberia and the Altai, from the second half of the 1st millennium B.C. to the early centuries of our era, local traditions were combined to a greater or lesser extent with the Scythian and, later, the Sarmatian culture. In Siberia there developed an original Scytho-Siberian animal style, on which influences from the cultures of China, Central Asia, and the Near East were superimposed. Along the lower Ob River the Ust-polui culture evolved (4th cent. B.C.–1st cent. of our era; geometric ornamentation on bronze, bone, and horn goods; animal and human figures and heads), and along the upper and middle Yenisei River, the Tagar culture (7th–2d cent. B.C.; animal-style adornments, similar to those of the Scythians, and rock drawings), and, later (1st cent. B.C.–4th cent.), the Tashtyk culture (portrait death masks of clay; bronze, stone, and wooden realistic figures of persons and animals). The finds in the Altai mountains have been especially rich (Scytho-Siberian gold artifacts; tumuli of tribal notables, 5th–3d cent. B.C., in the areas of Pazyryk and Bashadar, containing objects of metal, leather, wood, fur, and felt decorated with highly expressive stylized representations of cult scenes, beasts and zoomorphic monsters, plant and geometric ornamentation, etc.). In the 5th–6th century were formed the Turkic states in the Altai (rich adornments, hunting scenes engraved on bone, and figural engravings on stone) and the state of the Kirghiz along the middle Yenisei (gold, silver, and bronze utensils with a rich plant design in relief; expressive relief representations of riders and beasts; and rock drawings with hunting and war scenes). In the 8th–10th century the coastal area formed part of the Bokhai state (stone sculptures of persons and animals; geometric ornamentation). Stone figures of warriors were widespread from the 6th to the 9th century in the Khakass region, Tuva, and the Altai (see TURKIC ART).

In the 1st millennium of our era the eastern Slavs settled in a large territory reaching from the lower Danube and Dnieper rivers to the Baltic Sea and Lake Ladoga. In appearance their settlements were essentially fortified citadels surrounded by a rampart topped with paling or a timber wall. The domestic architecture consisted of a northern type of house made of wooden beams, and a southern type of clay hut dug partly into the ground. Remains of the earliest beamed rectangular houses with double-sloped roofs have been found in the citadel of Bereznyaki (3d–5th cent.), near Rybinsk; an idea of the southern type of house is given by the excavations of the



Union of Soviet Socialist Republics, principal centers of archaeological and artistic interest of the pre-Islamic period. *Key*: (1) Modern political boundary; (2) prehistoric sites, mainly of the Paleolithic period; (3) sites of the Neolithic period and the Age of Metals; (4) Greco-Scythian centers or those with classical influences; (5) Parthian cities; (6) centers with remains of the Sassanian period; (7) centers of the civilizations of Khwarizm; (8) centers with Buddhist buildings.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Borshevo citadel (Voronezh district; 8th–10th cent.). At Bereznyaki, each house was meant to accommodate a large patriarchal family; the houses in Borshevo were smaller and joined by passages into a complex that was intricate in plan. The art of the Slavs of the 1st to the 5th century is represented by pottery with polished geometric ornamentation and by bronze pendants, buckles, and fibulae with openwork geometric designs (Kaluga and Smolensk districts). From the 6th century, when tribal alliances began to be formed, there have survived many treasures and tombs, as well as clay vessels and silver and bronze objects, often enameled, with stylized figures of persons, animals, and birds. The Slavic barrow of the 8th–10th century, sometimes 33–40 ft. high (Smolensk), contained a wooden funerary chamber. The sanctuary of the god Perun near Novgorod (10th cent.) consisted of a circular platform with an idol in the center, surrounded by smaller platforms with pyres. In the region of Smolensk have been found several dozen pagan temples — raised round platforms (to 65 ft. in diameter) surrounded by earthen banks with palings. In the center there was a rectangular stone sacrificial altar with a covering supported by four pillars; other pillars were carved to represent human figures. The temple on Annunciation Hill (Blagoveshchenskaya Gora) near Bryansk included a large timber house, in addition to the platform with the altar and idols. An idea of the pagan divinities placed in the sanctuaries is given by written descriptions and by idols that have survived in burials in rural localities. Small bronze idols of the 9th and 10th centuries have been found along the upper Volga, in the Vyatsk area, and in the Ural region; clay statuettes have been found near Suzdal, and larger stone idols with more complex forms in the Moscow, Yaroslavl, and Kirov districts.

The neighbors of the Slavs in the north and northeast were the Finno-Ugrians (earth houses, timber structures, and metal adornments). In the 7th century, on the Caspian and Black Sea steppes, arose the state of the Turkic-speaking Khazars, which was destroyed by Russia in 965; studies have been made of the town of Sarkel with its geometric layout of brick fortifications. Under pressure of the Khazars, the Turkic-speaking Bolgars (Bulgars) moved from the steppes along the Azov Sea and the lower Volga to the middle Volga and the Kama River, where, in the 10th century, a state was founded, with its capital, Bolgar Veliki, situated near the mouth of the Kama. In the 13th century the Mongols destroyed the states of the Far East, Siberia, the Altai, and Kaman Bolgaria. Brick buildings of the 14th century have survived from the town of Bolgar: the "Black Chamber" Mausoleum and a minaret similar to those of Central Asia; the town existed until the 15th century, the period of the Golden Horde, whose dominions spread from the Danube to the Irtysh rivers. From the 9th to the 13th century the southern Russian steppe was inhabited by Turkic nomadic tribes (Pechenegs, Torki, and Berendei) and by the Polovtsi; in addition to various adornments, they left bone-encrusted quiver trimmings and funerary sculptures. The traditions of ancient art were long preserved in the folk art of the peoples of the R.S.F.S.R.

Pëtr MAKSIMOV, Anatoli KANTOR

b. Medieval and modern periods. In the 9th–10th century the rise and development of feudal relationships among the eastern Slavs resulted in the creation of a powerful Russian state (see below: *Ukraine* and *Byelorussia*) with its capital in Kiev, the emergence of a ruling class of powerful boyar landowners headed by a prince, and the conversion of Russia to Christianity (ca. 988–89). Ties with foreign states, especially Byzantium and the southern Slavic countries, were strengthened. There began the construction of large Christian churches and of princes' and boyars' residences. On the high banks of rivers (Novgorod) or on promontories at the confluence of two rivers (Pskov) were built fortified town centers — kremlins — with adjoining sections traversed by streets that converged on the kremlin, either paralleling the river or descending to it. The houses in northern towns (Novgorod, Staraya Ladoga) were wooden. In the 10th century houses in three sections were built [with a passage between the heated room for domestic use (*istobka*) and the state room (*klet*)], as well as large mansions (*khoromy*) consisting of a row of tall wooden structures (with separate roofs) set side by side and sometimes joined by passages. The first wooden cathedral, St. Sophia in Novgorod (989; destroyed 1045) had 13 "tops" and as many supporting frames. In the south the dwellings were semisubterranean, of a type also encountered in the east (Suzdal). Town fortifications consisted of wooden walls set on banks of earth.

The kinship of Russian stone churches with Byzantine and south Slavic ones is evidenced by the oldest surviving stone church in the R.S.F.S.R., the Cathedral of St. Sophia in Novgorod (XIII, PL. 56), a five-aisled, triapsidal structure with five domes resting on drums pierced by windows, galleries and porches on three sides, and a stair tower. Later, during the feudal period (12th–13th cent.), when stone churches were built in many towns, the predominant type had three aisles and six piers; from the second half of the 12th century, four piers were also used. Along with this Russian type of church, local peculiarities appeared in construction technique and the embellishment of façades. In the region of the upper Dnieper River, walls of alternating courses of stone and brick were superseded by all-brick walls, but the decorative niches on the façades and the colonnettes on the drums were retained. On the façades there were colonnettes (or clustered columns), and on walls and drums a sequence of consecutive arches — motifs related to Romanesque architecture. Along with simple buildings, such as the Church of SS. Peter and Paul in Smolensk (mid-12th cent.), churches with a more complex and dynamic distribution of spaces were built, such as the Church of the Archangel Michael in Smolensk (1191–94), with a pedestal under the drum, a tripartite façade corresponding to the form of the vaults, three relatively low porches, and low lateral apses. At first, the Novgorod churches of the 12th century were six-piered, with a tower on the west façade, three or five domes, and niches on the façades, as exemplified by the Church of St. Nicholas Dvorishchenski (founded 1113) and the churches of the monasteries of St. Anthony (1117) and St. George (Yuriev; 1119). Of smaller dimension are the four-piered churches of the end of the 12th century (SS. Peter and Paul in Novgorod, 1185–92; the Church of the Saviour at Nereditsa, outside Novgorod, 1198; St. George and the Church of the Dormition in Staraya Ladoga), which are distinguished for the simple embellishment of their façades and the picturesque distribution of their windows. Edifices of similar type in Pskov are the six-piered, three-domed Cathedral of the Ivanovski Monastery (before 1243) and the Cathedral of the Mirozhski Monastery (before 1156), which is pierless and has a cruciform plan with low adjuncts at the corners. In the northeast, in the Vladimir-Suzdal principality, building was carried out in dressed stone, often decorated with architectural and sculptural details. Recessed portals, arches of Romanesque type, slender colonnettes with sculptured capitals joined together by arches, apses, and a drum to support the dome were harmoniously combined in the typical Russian cubical church, which was domed and had semicircular blind arches (*zakomari*) on the exterior walls. The early buildings (the Cathedral in Pereslavl-Zalesski and the church in Kideksha, both 1152) are plain, but the Cathedral of the Dormition (1158–61, enlarged 1185–89) in Vladimir displays a more highly developed embellishment. The stately, graceful Church of the Intercession of the Virgin (1165) on the Nerl River near Vladimir has reliefs in the lunettes of its blind arches, while St. Dmitri (Demitrius; XIII, PL. 57) in Vladimir has reliefs covering the upper half of the façade and the drum. Finally, in the Church of St. George (1230–34) in Yuriev-Polski — which, like Suzdal Cathedral (1222–25), has porches on three sides — sculptured plant ornamentation entirely covers the walls; in the spaces formed by the blind arches there are relief representations of saints and, higher up, elaborate sculptural compositions with many figures. Neither church has retained its original domes, vaults, or upper walls. In the former prince's castle (12th cent.) at Bogolyubovo, near Vladimir, the stair tower, also decorated with blind arches, has survived.

Painting was well developed and constituted an important element in church interiors. A synthesis between architecture and painting was achieved by adapting the painted scenes and figures to the building's inner space and to the contours of the piers, vaults, and domes; the flat manner of painting left the surfaces of the walls and vaults relatively undisturbed.

The 11th-century frescoes in the drum of the central dome of the Cathedral of St. Sophia in Novgorod (XIII, PL. 64) follow Byzantine models and are distinguished for their solemn character, for their restrained and austere color scheme, and for the elongated proportions and spiritual, ascetic faces of the figures. In the 12th-century frescoes in Novgorod, Staraya Ladoga (XIII, PL. 66), and Pskov a departure from Byzantine models is evident: the figures are more squat and the faces are simpler and have more character and there is a noticeable tendency toward clear, light colors and a more vigorous — sometimes more linear — style of painting. The new Russian manner can also be seen in the frescoes of the 12th century and the beginning of the 13th in the cathedrals of the Dormition and St. Dmitri in Vladimir (XIII, PL. 67) and in the one in Suzdal.

The icon painting of Novgorod (*Ustyug Annunciation*) and of Vladimir-Suzdal (*St. Demetrius of Salonika*, the *Virgin Orans of Yaroslavl*; both in Moscow, Tretyakov Gall.) is characterized by faces based on the national type; the composition is more restrained and flatter, and the colors are varied, consisting of a range of bright colors with golden highlights on garments. In book illumination the influence of frescoes and icons is evident (Mstislav Gospel, 1103–17; Moscow, Historical Mus., Patr. 1203); the initials reflect the animal style (Yuriev Gospel, 1120–28; Moscow, Historical Mus., Fol. Perg. no. 1003). The same influences can be detected in the bas-relief animals in the Church of St. Dmitri in Vladimir and the Cathedral of Yuriev-Polski, while their flatness betrays ties with

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Union of Soviet Socialist Republics, principal centers of historical and artistic interest of the medieval and modern periods. *Key*: (1) Modern political boundary; (2) boundaries of the soviet socialist republics; (3) centers with Islamic monuments; (4) centers of Armenian art; (5) centers of Georgian art; (6) centers of Russian medieval art; (7) centers with monuments of the 16th–17th century; (8) centers with monuments of the 18th–20th century.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ancient wood carving. Sculpture in the round was evidently unknown in the 11th–13th century. A high degree of excellence was achieved in artistic handicrafts — the adornment of metal goods with enamel (crosses, small icons, trimmings on church books), filigree, tiny fused-on silver bosses, and niellowork (on silver). The technique of tracing a gold design on lacquered copper sheets was used on the doors of Suzdal Cathedral (1220–30). Stone architecture, mosaics, and frescoes were new to Russia in the 10th century and the beginning of the 11th century and were therefore executed by Greek (and perhaps southern Slavic) artisans; but Russian disciples soon appeared, and 12th-century chronicles mention outstanding Russian builders.

The Tatar invasion of Russia (ca. 1230–40) and the Mongol-Tatar dominion checked the development of Russian art, especially that of building in stone, for a long time. Wall painting yielded its leading place to panel painting. It was probably during this time that there first appeared in wooden churches the many-tiered iconostases — so typical of the succeeding period — which compensated for the absence of frescoes. Only in Novgorod and Pskov, which had not been affected directly by the invasions, were stone architecture and wall painting promptly resumed. From the end of the 13th to the 15th century the small monastic or parish church with four piers, single apse and dome, and tripartite façade predominated in Novgorod. At the end of the 13th century there appeared a new style of façade embellishment that reached its full development in the second half of the 14th century, the time of the flowering of the Novgorod republic.

Among the stone fortifications of the 14th and 15th centuries, the best preserved are the fortress at Porkhovo (1387, partly rebuilt in 1430), with its simple forms and elaborate system of defending the gates, and the walls of the citadel (kremlin) in Novgorod (1484–90), with its relatively rich decoration on the Saviour and Vladimir towers. Novgorod houses were constructed almost entirely of wood, including the large boyar mansions (*khoromy*), which consisted of several high buildings joined together. Especially noteworthy among the stone constructions is the Euphymius Hall in the residence of the archbishop, which has Gothic vaulting that attests to the presence of western European builders.

The evolution of Novgorod painting is interesting. While the frescoes of the Church of the Saviour at Nereditsa (1199) show a severe chastising divinity, those of the 14th century represent a merciful and redeeming one. As early as St. Nicholas on the Lipna an Ascension was substituted for the usual scene of the Last Judgment and some frescoes of the second half of the 14th century include impressions drawn from real life. Many-figured compositions became more frequent and complex, architectural and landscape backgrounds more varied, and human figures and faces more realistic; the former static quality was replaced by lively poses and more vigorous movement (XIII, PL. 68). The manner of painting was more dynamic, with sharp highlights on the folds of garments and the illuminated parts of faces. Light, transparent colors predominated, with the exception of the dramatic frescoes in the Church of Our Saviour of the Transfiguration, painted in 1378 by Theophanes the Greek, who used an almost monochrome range of reddish-brown and grayish-blue colors with harsh highlights (II, PL. 464; XIII, PL. 68). The Novgorod icons of the 13th to the beginning of the 15th century are distinguished by their folkloristic, lifelike features, the purity of their bright unmixed colors, their simplicity and flatness of composition, and their precise drawing (XIII, PL. 71). In the second half of the 15th century the manner of painting became more meticulous, and the dimensions of icons were reduced (XIII, PL. 69); similar changes were introduced in frescoes. Inventiveness and humor distinguish the initial letters and marginal decorations in Novgorod manuscripts.

In Pskov, which became a republic in 1348, the development of architecture followed a separate path. At first churches had roofs laid directly on the blind arches, which were sometimes on different levels (Trinity Cathedral, 1365–67); then roofs with eight slopes were built (Church of SS. Cosmos and Damian, 1462). Characteristic of Pskov churches are three low apses and various additions (low porches and chapels) that were made to enlarge the area of the building. These additions, as well as porches with thick round posts and bell towers built onto or near the church, gave the plain Pskov churches a picturesque quality. The interiors were rarely decorated with frescoes. The multicolored iconostasis as well as the black pottery resonance chambers (*golosniki*) placed along the upper parts of the walls and the drums to improve the acoustics stood out against a white background. The remains of the defensive walls of Pskov show an advanced system of defending the gates, and the defensive walls of Izborsk have retained their decoration — bands of patterned brickwork and large crosses. The frescoes in the Cathedral of the Snetogorski Monastery (XIII, PL. 68) near Pskov include complex groups of figures and are more monochrome in their reddish-brown color scheme than those in Novgorod. The Pskov icons are distinguished for their marked folkloristic character and for their frequently somber and intense range of colors.

At the beginning of the 14th century Moscow began to gain ascendance in the northeast, uniting the Russian lands and waging war against the Tatars. The first stone churches of Moscow were similar to those of Vladimir-Suzdal (12th–13th cent.) in plan and in the walls of dressed stone. The churches of the late 14th century and first third of the 15th (Cathedral of the Dormition, Zvenigorod, XIII, FIG. 93; Trinity Cathedral, Trinity-Sergius Monastery, 1422–23) had recessed portals, blind keel arches (*zakomari*), high apses, and strips of carved ornamentation dividing the façades into sections. There was no sculpture on the façades, but the elaborate transition from the lower part of the building to the drum by means of additional tiers of *zakomari* and the decorative *kokoshniki* (blind arches resembling women's headdresses) gave these churches a graceful and picturesque air. With the expansion of building activity (mid-15th cent.) the costly dressed stone was replaced by brick; on gables (the palace at Uglich, second half of 15th cent.), on the *zakomari*, and on the upper parts of apses and drums (Cathedral of the Therapont Monastery at Beloe Ozero, ca. 1490) there appeared broad bands of patterned brickwork with terra-cotta plaques.

The dramatic impact and somber color scheme of the icons painted by Theophanes the Greek in 1405 for the Cathedral of the Annunciation in Moscow were not assimilated by Muscovite artists — especially not by Andrei Rublëv (q.v.), who worked with Theophanes in the Cathedral of the Annunciation (XII, PL. 338). Typical of Rublëv's frescoes (Cathedral of the Dormition in Vladimir, 1408; XII, PL. 339) and of his icons (the Trinity icon from the Trinity-Sergius Monastery; XII, PL. 336) are masterly composition, gracefulness of drawing, and harmony of color scheme, which, along with the beauty and spirituality of the faces, create a serene and joyous mood. Rublëv's art marks the apogee of Muscovite painting in this period. The rare examples of Russian sculpture include a stone panel with a carved relief of St. George (1464; workshop of V. D. Ermolin) from the Saviour's Tower (Spasskaya Bashnya) of the Moscow Kremlin and fine miniaturelike carvings by the sculptor Master Ambrose (Amvrosi).

During the last quarter of the 15th century, when Moscow became the capital of the Russian state, Russian and Italian architects and builders constructed stone churches, palaces, and defensive walls. The buildings in the Moscow Kremlin simulate the beauty of the 12th-century architecture of Vladimir (Cathedral of the Dormition, 1475–79, by Aristotele Fioravanti of Bologna; XIII, PL. 58); they consist of elements from earlier Russian churches (Cathedral of the Annunciation, 1484–89, built by Pskov builders), of certain features from the late Gothic and early Renaissance styles (Granovitaya Palace, 1487–91, by M. Ruffo and P. A. Solari; XII, PL. 112; defensive walls and towers, XIII, PL. 60), and of typically Russian church decoration [Cathedral of the Archangel Michael, 1505–09, by Aloisio (Alevisio Novi) from Milan; XIII, PL. 58]. Above the Kremlin complex rises the tall bell tower of Ivan the Great (Ivan Veliki).

In the first half of the 16th century kremlins were built in Nizhni Novgorod, Kolomna, and Tula, and fortified monasteries were erected or enlarged. In the cities and villages churches were built with tripartite façades (churches of St. Triphon and the Conception of St. Anne in Moscow) and tiers of *kokoshnik* arches (old Cathedral of the Virgin of the Don Monastery, Moscow, 1593), but without internal piers. Wood predominated in architecture; it was used to build the huts of peasants and townspeople, boyars' houses, and tsars' palaces. Wooden churches were square in plan, with additions for the altar and porch, and had either a steep roof with two slopes or an octagonal tent roof (*shater*); some wooden churches were built on a cruciform plan. Their influence may be detected in the stone churches in the shape of tall towers or groups of towers, often with tent roofs, such as those at Kolomenskoe (XIII, PL. 255, FIG. 97) and Dyakovo (ca. 1550), near Moscow, and the Cathedral of the Intercession, known as St. Basil the Blessed, in Moscow (XIII, PL. 59, FIG. 97). The rich adornment of their façades was carried out mostly in glazed bricks. Secular buildings had plain walls adorned only with a band of patterned brickwork or an elaborate cornice.

A reverential, yet festive character prevailed in the painting of this period. The frescoes by Dionysius (ca. 1500) in the Church of the Virgin in the Therapont Monastery display a cheerful range of light, pure colors; characteristic features are the slim, elongated figures, the graceful drawing, and the richness of the garments and architectural background. The same traits are found in later frescoes, icons, and miniatures. Icons of the second half of the 16th century have more elaborate compositions filled with symbolism. The icons of the Stroganov school (end of 16th and beginning of the 17th cent.) are relatively small — more suitable for houses than for churches — and because of their meticulous painting and their combination of colors with gold seem to be precious products of the jeweler's craft. The sculpture of this period can be characterized as applied art [bas-reliefs decorating the tsar's throne in the Moscow Cathedral of the Dormition (1551), and the human figures supporting the choir in the Cathedral of St. Sophia (1533) in Novgorod].

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

In the 17th century the strengthening of secularism and closer ties with foreign nations broadened the horizon of Russian artists. More secular buildings were built, frequently of stone. The houses of wealthy townspeople in Moscow, Nizhni Novgorod, Yaroslavl, Pskov, Gorokhovets, and Kaluga were usually constructed according to a trisectional plan, with a hall in the middle. An external flight of steps led to the second, main floor, and the top floor was either stone or wood. Pskov houses for a long time preserved the simplicity of their façades, while the brick houses of central Russia had rich adornment. Palaces were still composed of a row of buildings joined together. Later, they were unified into one building and became simpler and symmetrical (the stone Lefort Palace in Moscow, 1697–98, built by the architect D. Aksamitov). Classical forms and orders, which were combined with carving in stone and glazed tiles, appeared in the 17th century (Terem Palace in the Moscow Kremlin, 1635–36, by B. Ogurtsov) and became widespread at the end of the century: the Troekurov and Volkov mansions, the Krutitski Palace (ca. 1694, by O. Startsev), and the refectories of the Simonov Monastery (ca. 1683) and the Novodevichi Convent (1685–87) in Moscow. The five-domed, pierless church with chapels, a low and spacious structure on the west, and a bell tower over the entrance predominated. In the lavish adornment of the façades the traditional vertical division into sections and the *kokoshnik* arches were combined with horizontal divisions and window bands deriving from domestic architecture. Bell towers terminated in tent roofs, and some of the churches were crowned by two or three decorative tent roofs. Among the examples of this "ornate style" of building in Moscow are the Church of the Trinity in Nikitniki (ca. 1635–53) and the Church of the Nativity of the Virgin in Putinki (1649–52). (N. B.: To distinguish churches of the same name in a single city, the Russian usage is to add the name of the district in which the church is situated.) Later, the churches were more sober and the adornment more consonant with the structure (the Moscow Church of St. Nicholas in Khamovniki, 1679). At the turn of the century, the five-domed, pierless churches had open galleries and became lighter (Cathedral of the Vvedenski Monastery in Solvychegodsk, 1683–93, and the so-called "Stroganov" Church in Nizhni Novgorod, completed 1718). The large churches of traditional type — with piers and five domes — acquired galleries, chapels, and porches as well as ornate decoration on their façades (St. Elias the Prophet, 1647–50, St. John Chrysostom in Korovniki, 1649–54, and St. John the Baptist in Tolchkov, 1671–87, all in Yaroslavl; the Church of the Resurrection in Kostroma, 1652). Though the more severe northern churches lacked additions, they had richly decorated door and window frames. Classical orders appeared at the end of the 17th century in pierless parish churches and in cathedrals. Under the influence of architecture in wood, stone churches in the baroque "Naryshkin style" were built with a large octagonal tower or with several octagonal stories rising above the central rectangular structure, as illustrated by the churches at Fili (II, FIG. 277) and Ubory (XIII, PL. 60, FIG. 97), both outside Moscow; even bell towers assumed the form of tiered octagonal turrets (Novodevichi Convent, Moscow, ca. 1690). In keeping with the prevailing taste for adornment, wooden churches were crowned with tiered towers, with a tent roof over several tiers of so-called "barrels" (*bochki*) — semicylindrical roofs ending in a peak, with a "cube" composed of two interescting "barrels," or with many domes.

Russian painting of the first half of the 17th century followed traditional formulas; but in the second half of the century, under the influence of Western art, it became increasingly secular, ornate, and elegant. Biblical and hagiographic scenes resemble genre paintings owing to their numerous secondary figures and their scenes, clothing, architecture, and landscapes from everyday life. The old traditions are reflected only in the flat composition, the conventional beauty of the faces, the elongated proportions of the figures, and the rhythmic quality of the drawing. Frescoes cover walls and vaults like multicolored patterned carpets (frescoes in the Cathedral of the Archangel in Moscow, 1652–66; wall paintings by Guri Nikitin and Sila Savin at Pereslavl, Rostov, Yaroslavl, etc.). Simon Ushakov (1626–86) used chiaroscuro effects in the faces and figures in his icons (XIII, PL. 69); his engravings reveal a study of nature and a familiarity with Western models (engravings for J. Piscator's *Theatrum Biblicum*). Ushakov and artists close to him [I. Maksimov, T. I. Filatyev, I. Vladimirov, and K. I. Ulanov (d. 1731)], others more connected with the old traditions [Nikita Pavlovets (d. ca. 1677) and F. E. Zubov (d. 1689)], and still others who had come from abroad (the Armenian I. I. Saltanov and the Pole V. Poznanski, who were closer to Western art) all worked in the Armory Palace (Hall of Arms) in Moscow, as did the Dutch artist Johann Detterson and the Flemish artist Daniel Vuchters (Wuchters), both painters of portraits in the Western manner.

In the 17th century sculpture remained tied to architecture (the bas-reliefs of the Terem Palace, Moscow, 1635–36) and the decorative arts, although a small number of carved wooden bas-reliefs and statues are known. The bas-reliefs on the interior of the church in the village of Dubrovitsa (near Moscow; end of 17th cent.) and the statues on its exterior walls were probably executed by foreign sculptors. The desire for festivity and elegance in everyday life gave a great impetus to the applied arts.

As a result of the reforms introduced in the early 18th century by Peter the Great, secularism gained the ascendant in Russian art, while the divergences between it and Western art, which were still conspicuous at the end of the 17th century, diminished. This was especially noticeable in the new capital, St. Petersburg — now Leningrad — where, along with Russian architects, there worked the Swiss architect D. Trezzini (Tressini; 1670–1734), the Italians N. Michetti (d. 1759) and G. Chiaveri (1689–1770), the Frenchman A. J. B. Le Blond (1679–1719), the Germans A. Schlüter (1660–1714, G. Schädel (ca. 1680–1752), and J. Mattarnovi (d. 1719), and others. The town plan of Leningrad (especially the network of streets crossing at right angles on Vasilevski Island) differed in its regularity from the layouts of old Russian towns. The appearance of the streets was also different owing to the solid rows of houses of standardized design facing onto them. Public buildings also underwent a change; while the Twelve Colleges (Ministries), consisting of 12 similar parts connected together, recalled the old chancelleries, the designs of the Admiralty and the Kunstkammer were entirely new for Russia. There were three-aisled churches with a tall bell tower and spire on the west side (e.g., Cathedral of SS. Peter and Paul), while the palaces were symmetrical buildings with large halls of state (the Menshikov palaces in the city and at Oranienbaum). The buildings of this period had a restrained character; only figural pediments and, occasionally, decoration around windows enlivened the smooth or somewhat subdivided façades (Summer Palace of Peter the Great). In Moscow, where the buildings were more richly decorated, there persisted the old type of church surmounted by a bell tower (Church of the Archangel Gabriel, called the "Menshikov Tower," 1704–07) and the central-plan, domed church with two chapels and bell tower (Church of St. John the Warrior, 1709–13). Even the Arsenal in the Kremlin had sculptural and painted decoration on its exterior. In Leningrad, richly embellished architecture, similar to the Italian and south German baroque, flourished in the 1740s and 1750s. During this period the non-Russian type of basilican church was superseded by the central-plan church with five domes, as exemplified by the Cathedral of the Smolny Convent (1748–64) and the Cathedral of St. Nicholas (1753–62) in Leningrad and by the Church of St. Clement (1762–70) in Moscow. There was a revival of the Russian type of tall, detached bell tower (Trinity-Sergius Monastery). The palaces of this period, despite their lavish interior and exterior decoration, had precise plans and simple contours (the Winter Palace in Leningrad, by B. F. Rastrelli, and the palaces he rebuilt at Peterhof and Tsarskoe Selo). Gardens had geometric layouts (the Summer Garden in St. Petersburg, the gardens in Peterhof, and those of the country estate of Kuskovo, near Moscow) and were graced with pavilions, fountains, and statues.

Russian sculpture became an independent branch of art. At first foreigners worked in this field, the most outstanding being the Italian Carlo Bartolomeo Rastrelli (ca. 1675–1744), author of the portrait bust and equestrian statue of Peter the Great in Leningrad. In portraiture, realistic tendencies developed; the works of I. Nikitin (ca. 1688–1741), A. M. Matveev (1701–39), I. Ya. Vishnyakov (1699–1761), I. P. Argunov (1727–1802), and A. P. Antropov (1716–95) reveal not only an assimilation of Western experiences but also an original characterization of the sitter's inner world. The official state portrait is represented by the paintings of the German G. Danhauer (Tannauer; ca. 1680–1737), the Frenchman L. Caravacque (died 1754), the German G. C. Grooth (1716–49), the Italian P. A. Rotari (1707–62), and the Frenchman L. Tocqué (1696–1772), all of whom brought the rococo style to Russia. Ecclesiastical painting came under the strong influence of secular painting. Perspectivist painting gave rise to new ways of achieving a synthesis between architecture and painting, and the illusory effect of space was used to make interiors seem larger. This type of painting was practiced by the Italians G. Valeriani (1708–61) and S. Barozzi (d. 1810), the Russians B. Sukhodolski and A. I. Belski (1730–96), and others. M. V. Lomonosov (1711–65) revived the art of mosaics, which had been all but forgotten in Russia. Handicrafts also reflected the influence of the baroque and rococo styles.

In the provinces the new architectural forms from Leningrad and Moscow were combined with the old architectural and decorative formulas, such as the tent steeples of the bell towers in Suzdal and the adornment of church façades in the Volga and Ural regions and Siberia. Still more traditional was architecture in wood: the Cathedral with three tent roofs in Kem (1714), the Church of the Trinity with five tent roofs in Nenoksa on the White Sea (1727), and the tiered, multidomed churches of the Transfiguration (1714;

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

XIII, PL. 63) and the Intercession (1764) in Kizhi, on Lake Onega. In village churches there was a widespread use of painted wooden sculpture that combined old forms with the new realism. The frescoes of churches in Vologda, Tula, and other towns followed the old traditions but made use of current motifs in the architectural backgrounds and clothing. Even in the 17th century the *lubok* — a popular hand-painted engraving with a moralistic or sharply satirical text — was in use. Folk art firmly retained ancient traditions, including motifs from pagan antiquity, and many branches of folk art were developed by non-Russian peoples.

The crisis that the feudal system was experiencing in the second half of the 18th century and the first half of the 19th gave rise to conditions that favored the transition from the sumptuousness of mid-18th century art to the civic ideals and severity of neoclassicism and to more realistic and didactic traits in the representational arts. These tendencies came to predominate in the Academy of Fine Arts, founded in 1757 in Leningrad. In architecture, neoclassicism first became perceptible in the early 1760s (Academy of Fine Arts building, Leningrad) and then emerged vividly in the works of V. I. Bazhenov (1737–99), I. E. Starov (1745–1808), and M. F. Kazakov (1738–1812). In the architectural works of Bazhenov, such as the Pashkov Palace in Moscow (PL. 238), there is still evidence of ties with the preceding period, whereas the buildings by Starov (the Tauride Palace, Leningrad) and by Kazakov (the Golitsyn Hospital, Moscow), with their plain walls and severe porticoes and colonnades, effect the transition to the more severe architecture of the beginning of the 19th century. Churches were often built in the form of rotundas with large domes (e.g., the Church of Philip the Metropolitan, Moscow, by Kazakov), a type of plan also adopted in secular buildings (e.g., the former Senate in the Kremlin, Moscow, also by Kazakov). Bazhenov and Kazakov made attempts to revive ancient Russian forms, with which they sometimes combined Gothic elements. Russian neoclassicism is closely associated with the Italian Giacomo Quarenghi (1744–1817), the architect of many buildings and palaces in Leningrad and its environs (X, FIG. 535), and the Scotsman Charles Cameron (ca. 1740–1812), who constructed buildings at Pavlovsk and Tsarskoe Selo. Gardens with more natural landscaping began to predominate.

The beginning of the 19th century is distinguished for the somber monumentality of its architecture and for a great upsurge in urban construction, especially in Leningrad, where the Admiralty (PL. 242), the Stock Exchange, the Academy of Mines (Gorni Institut), and especially the Cathedral of the Virgin of Kazan (PL. 240) were planned in close relation to the adjoining streets and squares. This concept, developed in the construction of Leningrad and new cities in southern Russia (see *Ukraine*) and in the rebuilding of old towns (about 400 rebuilt in the period 1750–1830), was especially evident in the formal and richly embellished edifices by K. I. (Carlo) Rossi (1775–1849) in Leningrad (PL. 241; X, PL. 274, FIGS. 535, 539). The buildings by V. P. Stasov (1769–1848) are more severe. Significant reconstruction work was carried out in Moscow after the fire of 1812 by O. I. Bove (Beauvais; 1784–1834), D. I. Gilardi (1788–1845), A. G. Grigorev (1782–1868), and others, whose work differed from that of St. Petersburg architects in its less severe manner and greater lyricism. In provincial towns, streets were straightened and broadened, and alongside the existing centers (kremlins and monasteries) arose new squares with administrative and commercial buildings. The differences between the architecture of the capital and the provinces diminished owing to the standard designs drawn up by the city architects. Over 150 administrative buildings were constructed according to designs by A. D. Zakharov (1761–1811), and façades of houses were based on designs by Stasov and others. The forms of neoclassicism penetrated to provincial country estates and villages, where local carpenters adapted them in an original way to the requirements of architecture in wood. From 1830 to the early 1850s the severity of Russian neoclassicism gave way to showy splendor that was already evident in the Cathedral of St. Isaac in Leningrad (1818–58) and especially in the palaces built by A. I. Stakenschneider (1802–65), which combined elements of the neoclassic, baroque, and Renaissance styles. M. D. Bykovski (1801–85) and N. L. Benois (1813–98) made use of Gothic forms, while K. A. Thon (Ton; 1794–1881) created the "Russo-Byzantine" style, combining a neoclassic distribution of space with Byzantine, Romanesque, and early Russian details.

In painting, historical subjects prevailed. But the paintings of A. P. Losenko (1737–73) or G. I. Ugryumov (1764–1823) on themes of ancient or Russian history cannot be compared with the portraits. Those by D. G. Levitski (1735–1822), F. S. Rokotov (1732/36–1808), and V. L. Borovikovski (1757–1825) — the best portraits of the second half of the 18th century — are distinguished for brilliant workmanship and the subordination of composition and coloring to the psychological individuality of the model. Genre painting included depictions of the patriarchal, domestic aspects of peasant life (M. Shibanov, d. ca. 1789) as well as its want and poverty (I. A. Ermenëv, 1736–after 1792). Simon F. Shchedrin (1745–1804), with his views of gardens in the environs of St. Petersburg, and F. Ya. Alekseev (1753/55–1824), a master of city scenes, laid the foundations of Russian landscape painting. At the beginning of the 19th century, as previously, the greatest importance was attached to historical and religious painting (A. I. Ivanov, 1775–1848; V. K. Shebuev, 1777–1855; and A. E. Egorov, 1776–1851). Peasant life was represented in an idealized and poetic spirit by A. G. Venetsianov (1780–1847), who founded a school of genre, landscape, portrait, and still-life painting. Unprecedented elements were introduced into Russian painting by the romantic portraits of O. A. Kiprenski (1782–1836) and by the more realistic portraits of V. A. Tropinin (1776–1857). Landscape painting was renewed with the Italian views of Silvester F. Shchedrin (1791–1830) and the romantic paintings of M. N. Vorobëv (1787–1855). Among the foreign artists working in Russia in the second half of the 18th century and the beginning of the 19th, mention should be made of the following: the Swede A. Roslin (1718–93), the Austrian J. B. Lampi (1751–1830), and the Englishman G. Dowe (1781–1829), all portraitists; and the Italian P. Gonzaga (1751–1831), a major scenographer.

In the mid-18th century foreign sculptors, such as the Frenchman E. M. Falconet (q.v.), who executed the monument of Peter the Great in Leningrad (1766–82), were still being called to Russia; but the lead was soon taken by Russian sculptors: F. I. Shubin (1740–1805), and the neoclassicists F. G. Gordeev (1744–1810), I. P. Prokofiev (1758–1828), and M. I. Kozlovski (1753–1802; especially the monument to Suvorov in Leningrad, 1800–01). Heroic idealization marks the work of I. P. Martos (1752/54–1835) in his monument to Minin and Pozharski in Moscow (1808–18), as well as the bas-relief medallions (1814–36) dedicated to the war against Napoleon by F. P. Tolstoy (1783–1873). Later, in the work of B. I. Orlovski (1793–1837) and P. K. Klodt (1805–67), heroic pathos was combined with true-to-life features. The leading sculptors of the end of the 18th century and the beginning of the 19th — Kozlovski, Martos, F. F. Shchedrin (1751–1825), S. S. Pimenov (1784–1833), V. I. Demut-Malinovski (1779–1846), and I. P. Vitali (1794–1855) — devoted themselves to the decoration of buildings, funerary monuments, and garden sculpture. An important role in Russian art was played by engravings (E. P. Chemesov, 1737–65; G. I. Skorodumov, 1755–92; and N. I. Utkin, 1780–1863) and lithographs (A. O. Orlovski, 1777–1832). There were remarkable achievements in the applied arts during the neoclassic period (the Imperial Factory in St. Petersburg, 1744, the factory of F. Ya. Gardner, 1766, etc.).

In the reactionary atmosphere of the reign of Nicholas I there prevailed a frigid, official academicism, sometimes tinged with pessimism, as in the works of F. A. Bruni (1799–1875). The tragic destruction of noble persons served as the theme of *The Last Day of Pompeii* (1830–33; Leningrad, Russian Mus.) by K. P. Bryullov (1799–1852), who brought vivid romantic emotions and a study of nature to the severe academic school. A. A. Ivanov (1806–58), in his *Christ's Appearance to the People* (1837–57; Leningrad, Russian Mus.), turned to the neoclassic tradition; in his sketches (especially his landscapes) and in his water colors of Biblical subjects he approached the problems of painting in a new way. In genre painting P. A. Fedotov (1815–52) headed the school of critical realism, which was acquiring increasing social significance; in his art a caustic, satirical commentary on the mores of the gentry and the merchants is combined with a sympathy for simple people. Critical realism achieved a still broader scope in graphic work (e.g., the illustrations of A. A. Agin, 1817–75). Sculpture, on the contrary, preserved the outer forms of neoclassicism, at the same time losing its monumentality and becoming turgid, complicated, and trivial; the development of realism was reflected mainly in portrait sculpture and small-scale statues.

The breakdown of the feudal serf-holding system, which precipitated the peasant reform of 1861, marked the beginnings of capitalism. The economic dominance of the middle class and its accord with the gentry, whose tastes and way of life were imitated by the former, helped to make architecture more eclectic than ever. The appearance of new types of buildings and the advance of construction techniques caused the beginnings of a breach between function and traditional architectural designs and between new materials and old forms borrowed from the Renaissance (A. I. Rezanov, 1817–87; K. M. Bykovski, 1841–1906), from the early Russian style [V. O. Sherwood (Shervud; PL. 243), 1833–97; A. N. Pomerantsev, 1849–1918], or from folk architecture in wood (I. P. Ropet, 1845–1908). Only at the turn of the century did the exponents of Art Nouveau begin to seek artistic forms in keeping with the new types of buildings and current construction techniques. The architectural works of F. O. Schechtel (1859–1926) in Moscow and F. I. Lidval (1870–1945) in Leningrad anticipated some of the features of the constructivist school of the 1920s; but most of the modernist architects merely introduced a wealth of decorative embellishment, which soon

CC-0. Panjab University Digital Preservation Foundation, Chandigarh

provoked a reaction that expressed itself in a return to the purer forms of the Italian Renaissance (I. V. Zholtovski, 1867–1959; V. A. Shchuko, 1878–1939), of Russian neoclassicism (I. A. Fomin, 1872–1936), and of early Russian architecture (A. V. Shchusev, 1873–1949). Though the pre-Revolution architects often reached a high artistic level and achieved a more organic coalescence of old forms and new types of construction, they were nonetheless unable to cross beyond the confines of stylization.

In painting, under the influence of revolutionary, democratic ideas, critical realism emerged as the dominant trend. In the 1860s V. G. Perov (1834–82) painted pictures that were intended as sharp social indictments. Satirical graphic art flourished and realism penetrated also into historical painting (V. G. Schwartz, 1838–69). In 1863 a group of artists left the Academy of Fine Arts in protest against its conformist policy and formed the Artists' Workshop, which was headed by I. N. Kramskoi (1837–87). In 1870 Kramskoi and other artists founded the Society for Traveling Art Exhibitions in opposition to academic salon art. In the exhibitions of the Peredvizhniki (Itinerants, Travelers, or Wanderers, as the members were known) — the first took place in 1871 — there was a predominance of genre paintings (K. A. Savitski, 1844–1905; G. G. Myasoedov, 1835–1911; V. M. Maksimov, 1844–1911; V. E. Makovski, 1846–1920; N. A. Yaroshenko, 1846–98; etc.). Acute psychological insight distinguishes the portraits of Kramskoi and the historical pictures of N. N. Gay (Ge; 1831–94). The landscapes of the Peredvizhniki (I. I. Shishkin, 1832–98; A. K. Savrasov, 1830–97; and F. A. Vasilev, 1850–73) reveal the beauty of the Russian countryside and stand in contrast to the romantic grandeur of the seascapes by I. K. Aivazovski (1817–1900). The most important Russian realists were associated with the Peredvizhniki: I. E. Repin (1844–1930), who painted fine portraits and portrayals of folk life, Russian history, and the fight for freedom; and V. I. Surikov (1848–1916), who, in his huge dramatic canvases, presented the people as history's chief protagonist. Close to the Peredvizhniki was V. V. Vereshchagin (1842–1904), whose treatment of battle themes was meant to provoke feelings of protest against war. The last quarter of the 19th century and the beginning of the 20th constituted a period of new and varied quests. The romantic landscapes of A. I. Kuindzhi (1842–1910) vied with the subtle plein-air quality in the landscapes of V. D. Polenov (1844–1927), I. I. Levitan (1860/61–1900), and V. A. Serov (1865–1911), who later painted portraits. Landscapes occupied a prominent place in the canvases of V. M. Vasnetsov (1848–1926) on themes from Russian epics and fairy tales, in the religious compositions and portraits of M. V. Nesterov (1862–1942), and in the genre-historical paintings of A. P. Ryabushkin (1861–1904). M. A. Vrubel (1856–1910) united elements of fantasy and symbolism. At the end of the 19th century the society Mir Iskusstva (World of Art) was founded for the purpose of advancing the principles of art for art's sake. The work of the leading exponents of this group — A. N. Benois (1870–1960), K. A. Somov (1869–1939), X. N. K. Roerich (1874–1947), and V. E. Borisov-Musatov (1870–1905) — is characterized by stylization, by idealization of the past, and sometimes by mystical overtones. Mir Iskusstva also encouraged the graphic arts and book illustration, as exemplified by the work of M. V. Dobuzhinski (1875–1957), E. E. Lanceray (Lansere; 1875–1946), and A. P. Ostroumova-Lebedeva (1871–1955), as well as the art of scenography, as attested by the endeavors of L. N. Bakst (1866–1924; XII, PL. 442) and A. Ya. Golovin (1863–1930). The younger generation of the Peredvizhniki (N. A. Kasatkin, 1859–1930; S. V. Ivanov, 1864–1910; and A. E. Arkhipov, 1862–1930) combined their interest in the life and struggle of the working class and peasantry with a freer plein-air painting, which was especially characteristic of the Union of Russian Artists (Soyuz Russkikh Khudozhnikov), founded in 1903; its chief exponents — K. A. Korovin (1861–1939), F. A. Malyavin (1869–1940), A. S. Stepanov (1858–1923), K. F. Yuon (1875–1958), A. A. Rylov (1870–1939), and the Mir Iskusstva artists B. M. Kustodiev (1878–1927) and I. E. Grabar (1871–1960), who was closest to impressionism — delighted in the picturesqueness of the Russian countryside and rural life. In the decade before the 1917 Revolution the detachment from realism and the development of modernist tendencies manifested themselves in the symbolism and stylization of K. S. Petrov-Vodkin (1878–1939) and the artists of the Blue Rose society (Golubaya Roza; founded 1907), who were attracted by primitivism and decorative exoticism; in the Cézanne-inspired pursuits of the Jack of Diamonds group (Bubnovi Valet, founded 1910; P. P. Konchalovsky, 1876–1956; I. I. Mashkov, 1881–1944); in the futurism of the rayonists (N. S. Gontcharova, 1881–1962; M. F. Larionov, 1881–1964); and especially in the mystical fantasy of Marc Chagall (q.v.) and the abstract painting of the expressionist Wassily Kandinsky (q.v.) and the suprematist K. S. Malevich (q.v.; see also NONOBJECTIVE ART).

During the period 1861–1917 sculpture was less significant than painting. Realistic tendencies manifested themselves in smaller sculpture — most notably in the work of M. M. Antokolski (1843–1902) — and in the monuments created by M. O. Mikeshin (1836–96), A. M. Opekushin (1841–1923), and S. M. Volnukhin (1859–1921). P. P. Trubetskoi (1866/67–1938) worked in an impressionist vein, as did A. S. Golubkina (1864–1927) and N. A. Andreev (1873–1932). S. T. Konenkov (b. 1874) turned to archaic forms.

Pëtr MAKSIMOV

c. The Soviet period. From the first years of the Soviet regime, new types of buildings and new principles of town planning developed in conjunction with the socialist transformation. During the periods of the Civil War (1918–20) and the reconstruction of the national economy (1921–25) the first Soviet industrial projects were built, including the Chërnoreche chemical factory (1918–19) in the Gorki district, by V. A. Vesnin and others, and the Volkhov hydroelectric station (1919–26), by O. R. Munts (1871–1942) and others. Other important works were the Central Aerodynamics Institute (1919–29) in Moscow, by A. V. Kuznetsov (1874–1954), the Gorki House of Culture (1925–27) in Leningrad, by A. I. Gegello (b. 1891) and others, and complexes of houses for workers in Moscow, Leningrad, Sverdlovsk, Novosibirsk, and elsewhere. An important experience in architectural teamwork (I. V. Zholtovski, A. V. Shchusev, and others) was the setting up of the All-Russian Agricultural Fair in Moscow (1923). Outstanding examples of memorials were the Monument to the Fighters for the Revolution in Leningrad and the Lenin mausoleum in Moscow (PL. 251).

Building activity was greatly expanded during the transition to the socialization of industry. During the years of the First Five-Year Plan (1929–32) gigantic industrial plants were constructed, and urban districts were rebuilt in Moscow, Gorki, Sverdlovsk, Cheliabynsk, Rostov-on-Don, Volgograd, Ufa, Perm, and other towns; also, many new towns arose (Magnitogorsk, Novokuznetsk, Berezniki, etc.). Among the artistic groups of this period, some were based on a purely formal and sometimes deliberately eccentric use of the forms and materials of modern architecture, as in the case of the Society of New Architects (1923–30). An influential group was the Society of Modern Architects (OSA; 1925–31), in which the leading role was played by the Vesnin brothers — Victor (1882–1950), Leonid (1880–1933), and Alexander (1883–1959) — and M. Ya. Ginzburg (1892–1946). The members of the OSA, who called themselves "constructivists," advocated industrial methods of building, an esthetic expression of modern construction techniques, and a strict concern for functional planning and the use of buildings in a socialist society. Their significant buildings of the 1930s were the House of Culture of the Moscow Automobile Factory, the Pravda newspaper building in Moscow, and the Ordzhonikidze Sanitarium at Kislovodsk. The influence of this trend made itself felt in the works of architects who were not affiliated with the OSA: the Marx-Lenin Institute, the building of the Izvestiya newspaper, and the Ministry of Agriculture — all in Moscow — as well as the Barvikha Sanitarium on the outskirts of Moscow and the theater in Rostov-on-Don. The exponents of a different tendency, who were associated with the Moscow Architectural Society (1867–1930) and the Leningrad Society of Architects and Artists (1903–32), upheld the validity of the classical heritage and based their work on that of leading pre-Revolutionary architects who continued to be active in the Soviet period (I. V. Zholtovski, A. V. Shchusev, V. A. Shchuko, and I. A. Fomin). This tendency grew stronger after the competition for the Palace of Soviets (1931–33), for which architects had as their directive an assimilation of classical and new architecture. A single organization — the Union of Soviet Architects — was founded in 1932. In the 1930s town-planning operations were expanded in the Volga and Ural regions and Siberia, and Moscow was greatly transformed through the construction of houses, factories, subways (PL. 251), and the Moscow Canal. In Leningrad, also, large housing complexes were built.

After the War of 1941–45, the reconstruction of thousands of destroyed towns and villages was undertaken: Volgograd (by K. S. Alabyan, 1897–1959); Voronezh (by L. V. Rudnev, b. 1885); Rostov-on-Don (by V. N. Semenov, 1874–1960); Pskov (by N. V. Baranov, b. 1909); Novgorod (by A. V. Shchusev); Smolensk (by G. P. Goltz, 1893–1946); Kalinin (by N. Ya. Kolli, b. 1894); and Novorossisk (by B. M. Iofan, b. 1891). There was an expansion of town building in eastern areas of the R.S.F.S.R. (at Krasnoyarsk, Komsomolsk-on-Amur, and Omsk and in the Kuzbas, Ural, and Volga regions). In Moscow, in the years 1947–53, seven skyscrapers (PL. 253) and additional residential districts were built. Between 1949 and 1955 many new towns were founded (Angarsk, Volzhski, Novokuibyshevsk, Oktyabrski, Salavat, etc.).

Since 1954 Soviet architecture has been oriented toward mass construction, with a widespread use of prefabrication. Decorativeness and the eclectic use of archaic architectural forms have come under fire. The trend toward modern, simple, functional, and technically consistent forms of architecture is illustrated in Moscow by the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Central Lenin Stadium, Convention Hall in the Kremlin (PL. 253), the Youth (Yunost) Hotel, the Pioneers' House on Lenin Hills, and the development of the southwest district (PL. 167), and in Leningrad by the Young Peoples' Theater and the Hotel Russia.

Pëtr VOLODIN

Representational art during the Revolution and the Civil War consisted primarily of political posters and cartoons (D. S. Moor, 1883–1946; V. N. Deni, 1893–1946, and V. V. Mayakovsky, 1893–1930). Monuments dedicated to the most outstanding figures of the Revolution and to the sciences and arts, in accordance with Lenin's call for "monumental propaganda," were created by N. A. Andreev, S. D. Merkurov (1881–1952), and others. Side by side with realism, an active part was played by cubism, futurism, and abstract art. However, the demands of actual life and the growing awareness of the representational arts among the people resulted in the victory of realism, the collapse of other tendencies, and the artistic reconversion of the majority of their exponents. The newly founded Association of Artists of Revolutionary Russia (1922) stimulated artists' interest in the traditions of Russian realism and in the authentic reproduction of revolutionary events, of the toil and way of life of the Soviet people, and of the new type of citizen who was emerging from the Revolution (e.g., the works of I. I. Brodski, 1883–1939; M. B. Grekov, 1882–1934; S. V. Malyutin, 1859–1937; and G. G. Ryazhski, 1895–1952). The leading artists of the Society of Easel Painters (Obshchestvo Khudozhnikov Stankovistov; 1925–32) sought artistic means for expressing the new features of Soviet life (P. P. Konchalovski, I. I. Mashkov, I. E. Grabar, K. F. Yuon, and A. A. Rylov). Humanitarian, positive attitudes toward life also gained the ascendant in sculpture (I. D. Shadr, 1887–1941; A. T. Matveev, 1878–1960; S. D. Lebedeva, b. 1892).

In 1932 the Union of Soviet Artists was founded on the principles of socialist realism (B. V. Ioganson, b. 1893; A. M. Gerasimov, b. 1881; S. V. Gerasimov, b. 1885; A. A. Deineka, b. 1899; A. A. Plastov, b. 1893; Yu. I. Pimenov, b. 1903; M. V. Nesterov; P. D. Korin, b. 1892; V. N. Baksheev, 1862–1958; N. P. Krymov, 1884–1958; and A. V. Kuprin, 1880–1960). With the intensive building of town complexes and public edifices, heroic monumental art became important, as demonstrated by the works of the sculptors V. I. Mukhina (1889–1953), M. G. Manizer (b. 1891), and N. V. Tomski (b. 1900) and the mural painter E. E. Lanceray (Lansere; 1875–1946). Biting political cartoons were produced by the Kukryniksy triumvirate (M. V. Kupryanov, b. 1903; P. N. Krylov, b. 1902; and N. A. Sokolov, b. 1903) and by B. E. Efimov (b. 1900), V. S. Ivanov (b. 1909), A. A. Kokorekin (1906–59), and V. B. Koretski (b. 1909).

In the postwar years, especially since the second half of the 1950s, art has begun to develop in various ways as the pompousness and conformity of the preceding years have been surmounted. There has also been an active struggle against individualistic, modernistic tendencies. Among the major contemporary artists are the painters V. A. Serov (b. 1910), S. A. Chuikov (b. 1902; cf. also the *Kirghiz S.S.R.*), G. G. Nissky (b. 1903), A. I. Laktionov (b. 1910), V. M. Oreshnikov (b. 1904), G. M. Korzhev (b. 1925); the sculptors S. T. Konenkov, E. V. Vuchetich (b. 1908), M. K. Anikushin (b. 1917), A. P. Kibalnikov (b. 1912), L. E. Kerbel (b. 1917); the graphic artists N. N. Zhukov (b. 1908), V. N. Goryaev (b. 1910), B. I. Prorokov (b. 1911), and D. A. Dubinski (1920–60); and theatrical set designers A. Ya. Golovin (1863–1930), P. V. Vilyams (1902–47), F. F. Fedorovski (1883–1955), and V. F. Ryndin (b. 1902). An important place in the artistic culture is held by the minor arts (china, artistic glass and crystal, textiles, furniture, lacquer painting, carpets, metalwork, carving and engraving on bone, carving and painting on wood, lace, ceramics, toys, etc.). During recent years a great deal of attention has been focused on industrial design.

Anatoli KANTOR

BIBLIOG. N. A. Ramazanov, Materialy dlya istorii khudozhestv v Rossii (Materials for the History of the Arts in Russia), Moscow, 1863; P. N. Petrov, Sbornik materialov dlya istorii imp. S.-Peterburgskoi akademii khudozhestv za sto let es sushchestvovaniya (Collection of Materials for the History of the Imperial Academy of Fine Arts of St. Petersburg during the Hundred Years of Its Existence), St. Petersburg, 1864–66; V. V. Stasov, Russkii narodny ornament (Russian Folk Ornament), I, St. Petersburg, 1872; D. A. Rovinskii, Russkie narodnye kartinki (Russian Folk Painting), 9 vols., St. Petersburg, 1881–93; D. A. Rovinskii, Prodobny slovar' russkikh gravirovannykh portretov (Detailed Dictionary of Russian Engraved Portraits), 4 vols., St. Petersburg, 1886–89; I. Tolstoi and N. Kondakov, Russkie drevnosti v pamyatnikakh iskusstva (Russian Antiquities in Monuments of Art), 6 vols., St. Petersburg, 1889–99; N. P. Sobko, Slovar' russkikh khudozhnikov (Dictionary of Russian Artists), 3 vols., St. Petersburg, 1893–99; D. A. Rovinskii, Podrobny slovar' russkikh graveorv XVI–XIX vv. (Detailed Dictionary of Russian Engravers, 16th–19th Century), 2 vols., St. Petersburg, 1895; I. E. Zabelin, Russkoe iskusstvo (Russian Art), Moscow, 1900; A. Potapov, Ocherk drevnerusskoi grazhdanskoi arkhitektury (Essay on Old Russian Civil Architecture), 2 vols., Moscow, 1902–03; A. Novitskii, Istoriya russkogo iskusstva s drevneishikh vremen (History of Russian Art from Earliest Times), 2 vols., Moscow, 1903; A. Benois, Russkaya shkola zhivopisi, St. Petersburg, 1904 (Eng. trans., A. Yarmolinsky, The Russian School of Painting, New York, 1916); D. V. Ainalov, Ocherki i zametki po istorii drevnerusskogo iskusstva (Essays and Notes on the History of Old Russian Art), 4 vols., St. Petersburg, 1908–14; I. E. Grabar and others, Istoriia russkogo iskusstva (History of Russian Art), 6 vols., Moscow, 1909–16; A. A. Bobrinskoi, Narodnye russkie derevyannye izdeliya (Russian Folk Wooden Ware), 12 vols., Moscow, 1910–14; Istoricheskaya vystavka arkhitektury, 1911 (Historical Exhibition of Architecture, 1911), St. Petersburg, 1912; E. H. Minns, Scythians and Greeks, Cambridge, 1913 (repr. 2 vols., New York, 1965); A. I. Uspenskii, Slovar' khudozhnikov v XVIII veke pisavshikh v imperatorskikh dvortsakh (Dictionary of 18th-century Artists Active in the Imperial Palaces), Moscow, 1913; A. I. Uspenskii, Tsarskie, ikonopistsy i zhivopistsy XVII veka (17th-century Imperial Icon Painters and Painters), 4 vols., St. Petersburg, 1913–16; S. N. Kondakov, Yubileiny spravochnik Imperatorskoi Akademii khudozhestv, 1746–1914 (Manual for the Jubilee of the Imperial Academy of Fine Arts, 1764–1914), 2 vols., St. Petersburg, 1914; A. Eliasberg, Russische Kunst, Munich, 1915; A. A. Bobrinskoi, Reznoi kamen' v Rossii (Carved Stone in Russia), I, Moscow, 1916; R. Newmarch, The Russian Arts, New York, 1916; M. I. Rostovtsev, Ellinstvo i iranstvo na yuge Rossii (The Greek and the Iranian Worlds in South Russia), Petrograd, 1918; F. W. Halle, Altrussische Kunst, Berlin, 1920; M. Ebert, Südrussland im Altertum, Bonn, Leipzig, 1921; L. Réau, L'art russe, 2 vols., Paris, 1921–22; M. I. Rostovtsev, Iranians and Greeks in South Russia, Oxford, 1922; V. A. Nikol'skii, Drevnerusskoe dekorativnoe iskusstvo (Old Russian Decorative Art), Petrograd, 1923; V. A. Nikol'skii, Istoriya russkogo iskusstva (History of Russian Art), Berlin, 1923; E. F. Gollerbakh and M. V. Farmakovskii, eds., Russkii khudozhestvenny farfor (Russian Art Porcelain), Leningrad, 1924; A. I. Nekrasov, Ocherki dekorativnogo iskusstva drevnei Rusi (Essays on the Decorative Art of Ancient Rus), Moscow, 1924; A. I. Nekrasov, Russkoe narodnoe iskusstvo (Russian Folk Art), Moscow, 1924; B. N. Ternovets, Russkie skul'ptory (Russian Sculptors), Moscow, 1924; V. S. Voronov, Krestyanskoe iskusstvo (Peasant Art), Moscow, 1924; M. I. Rostovtsev, Skifiya i Bospor (Scythia and Bosporus), Moscow, 1925; O. Wulff and M. Alpatov, Denkmäler der Ikonenmalerei, Hellerau, 1925; A. I. Nekrasov, ed., Barokko v Rossii (Baroque in Russia), Moscow, 1926; N. P. Kondakov, The Russian Icon, Oxford, 1927; P. Muratov, Les icones russes, Paris, 1927; G. Borovka, Scythian Art, London, 1928; N. P. Kondakov, Russkaya ikona (The Russian Icon), 4 vols., Prague, 1928–33; F. W. Halle, Die Bauplastik von Wladimir-Ssusdal, Berlin, 1929; N. P. Sychev, Iskusstvo srednevekovoi Rusi (Art of Medieval Rus), Istoriya iskusstva vsekh vremen i narodov, IV, Leningrad, 1929; M. Farbman, ed., Masterpieces of Russian Painting (Icons and Frescoes from the 11th to the 18th Century), London, 1930; P. Schweinfurth, Geschichte der russischen Malerei im Mittelalter, The Hague, 1930; D. V. Ainalov, Geschichte der russischen Monumentalkunst, 2 vols., Berlin, Leipzig, 1932–33; M. Alpatov and N. Brunov, Geschichte der altrussischen Kunst, 2 vols., Augsburg, 1932; G. Millet, ed., L'art byzantin chez les Slaves, II, Paris, 1932; O. Wulff, Die neurussische Kunst in Rahmen der Kulturentwicklung Russlands: Von Peter dem Grossen bis zur Revolution, 2 vols., Augsburg, Brünn, 1932–33; D. R. Buxton, Russian Mediaeval Architecture, Cambridge, 1934; E. Lo Gatto, Gli artisti italiani in Russia, 2 vols., Rome, 1934–35; Russkaya akademicheskaya khudozhestvennaya shkola v XVIII veke (The 18th-century Russian Academic Artistic School), Moscow, Leningrad, 1934; N. N. Sobolev, Russkaya narodnaya rez'ba po derevu (Russian Folk Wood Carving), Moscow, Leningrad, 1934; N. N. Sokolova, Mir iskusstva (World of Art), Moscow, Leningrad, 1934; M. Gibellino-Krasceninnicowa, Storia dell'arte russa, 2 vols., Rome, 1935–37; H. Weidhaas, Formenwandlungen in der russischen Baukunst, Halle, 1935; A. Gushchin, Pamyatniki khudozhestvennogo remesla drevnei Rusi (Monuments of Artistic Handicrafts of Ancient Rus), Moscow, 1936; A. I. Nekrasov, Ocherki po istorii drevnerusskogo zodchestva XI–XVII vekov (Essays on the History of Old Russian Architecture, 11th–17th Century), Moscow, 1936; V. I. Ravdonikas, Naskal'nye izobrazheniya Onezhskogo ozera (Rock Pictures of Lake Onega), Moscow, Leningrad, 1936; A. Fedorov-Davydov, ed., Mastera iskusstva ob iskusstve (Masters of Art on Art), 4 vols., Moscow, Leningrad, 1937; K. S. Kuz'minskii, Russkaya realisticheskaya illyustratsiya XVIII i XIX vekov (Realistic Russian Illustration of the 18th and 19th Centuries), Moscow, 1937; A. I. Nekrasov, Drevnerusskoe izobrazitel'noe iskusstvo (Old Russian Art), Moscow, 1937; V. I. Ravdonikas, Naskal'nye izobrazheniya Belogo morya (Rock Pictures of the White Sea), Moscow, Leningrad, 1938; D. Talbot Rice, Beginnings of Russian Icon Painting, Oxford, 1938; M. Aptekar, ed., Russkaya istoricheskaya zhivopis': Vystavka 1939 g. (Russian Historical Painting: 1939 Exhibition), Moscow, 1939 (cat.); D. N. Eding, Reznaya skul'ptura Urala (Wood Carving of the Urals), Moscow, 1940; Narodnoe iskusstvo SSSR v khudozhestvennykh promyslakh, I: RSFSR (Russian Folk Art in Artistic Industries, I: RSFSR), Moscow, Leningrad, 1940; B. V. Mikhailovkii and B. I. Purishev, Ocherki po istorii drevnerusskoi monumental'noi zhivopisi ot vtoroi poloviny XIV veka do nachala XVIII veka (Essays on the History of Old Russian Monumental Painting from the Second Half of the 14th Century to the Beginning of the 18th Century), Moscow, Leningrad, 1941; M. Gibellino-Krasceninnicowa, Gli Sciti, Rome, 1942; S. Ya. Zabello, V. N. Ivanov and P. N. Maksimov, Russkoe derevyannoe zodchestvo (Russian Wooden Architecture), Moscow, 1942; L. Réau, L'art russe, Paris, 1945; N. N. Voronin, Drevnerusskie goroda (Old Russian Cities), Moscow, Leningrad, 1945; C. G. E. Bunt, Russian Art from Scyths to Soviets, London, New York, 1946; A. A. Sidorov, Istoriya oformleniya russkoi knigi (History of the Decoration of the Russian Book), Moscow, Leningrad, 1946; V. D. Blavatskii, Iskusstvo Severnogo Prichërnomor'ya antichnoi epokni (Art of the Northern Black Sea in Ancient Times), Moscow, 1947; D. Talbot Rice, Russian Icons, London, New York, 1947; W. von Matthey, Russische Kunst, Einsiedeln, 1948; B. A. Rybakov, Remeslo drevnei Rusi (Handicrafts of Ancient Rus), Moscow, 1948; N. N. Sobolev,

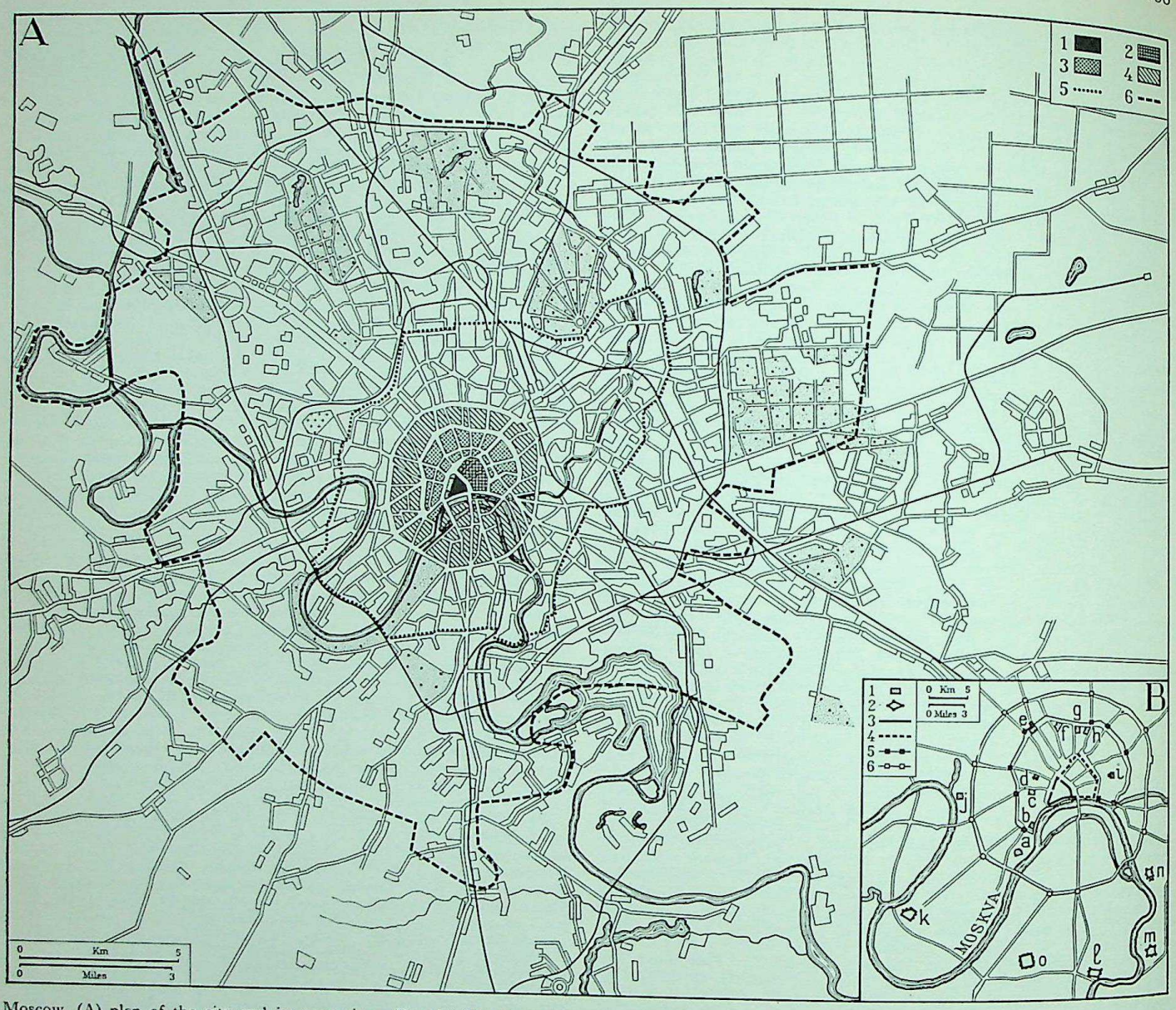
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Russkii ornament: Kamen', derevo, keramika, zhelezo, stenopis', naboika (Russian Ornament: Stone, Wood, Ceramics, Iron, Mural Painting, Printed Textiles), Moscow, 1948; W. P. Theunissen, Ikonen, The Hague, 1948; S. H. Cross, Mediaeval Russian Churches, Cambridge, Mass., 1949; D. Talbot Rice, Russian Art, West Drayton, England, 1949; M. Alpatov, Russian Impact on Art, New York, 1950; B. N. Emme, Russkii khudozhestvenny forfar (Russian Art Porcelain), Moscow, Leningrad, 1950; V. N. Ivanov and others, Sokrovishcha russkoi arkhitektury (Treasury of Russian Architecture), Moscow, 1950; P. E. Kornilov, ed., Russkaya gravyura XVI–XIX vv. (Russian Engraving, 16th–19th Century), Leningrad, Moscow, 1950; M. I. Rzyanin, Pamyatniki russkogo zodchestva (Monuments of Russian Architecture), Moscow, 1950; V. A. Shkvarikov, ed., Sovetskaya arkhitektura za XXX let: RSFSR (Thirty Years of Soviet Architecture: RSFSR), Moscow, 1950; A. N. Svirin, Drevnerusskaya miniatyura (Old Russian Illumination), Moscow, 1950; B. D. Grekov and M. I. Artamonov, ed., Istoriya kul'tury Drevnei Rusi (History of the Civilization of Ancient Rus), II, Moscow, Leningrad, 1951; N. N. Kovalenskaya, Istoriya russkogo iskusstva pervoi poloviny XIX veka (History of Russian Art of the First Half of the 19th Century), Moscow, 1951; A. A. Sidorov, Drevnerusskaya knizhnaya gravyura (Old Russian Book Engraving), Moscow, 1951; G. V. Zhidkov, Russkoe iskusstvo XVIII veka (18th-century Russian Art), Moscow, Leningrad, 1951; G. K. Burova, O. I. Gaponova, and V. F. Rumyanstseva, Tovarishchestvo peredvizhnykh khudozhestvennykh vystavok (Association of Traveling Art Exhibitions), 2 vols., Moscow, 1952–59; A. F. Korostin, Risunok russkikh masterov XVIII veka (Drawings of 18th-century Russian Masters), Moscow, 1952; A. F. Korostin and E. I. Smirnova, Russkaya gravyura XVIII veka (Russian Engraving of the 18th Century), Moscow, 1952; G. E. Lebedev, Russkaya knizhnaya illyustratsiya XIX v. (19th-century Russian Book Illustration), Moscow, 1952; A. I. Leonov, ed., Russkoe iskusstvo: Ocherki o zhizni i tvorchestve khudozhnikov: XVIII vek (Russian Art: Essays on the Lives and Work of Artists, 18th Century), Moscow, 1952; A. B. Saltykov, Russkaya keramika (Russian Ceramics), Moscow, 1952; V. V. Stasov, Izbrannye sochineniya (Selected Works), 3 vols., Moscow, 1952; Akademia nauk SSSR, Istoriya russkogo iskusstvo (History of Russian Art, ed. I. E. Grabar and others), 13 vols., Moscow, 1953–65; N. I. Brunov, Mastera drevnerusskogo zodchestva (Masters of Old Russian Architecture), Moscow, 1953; A. A. Fedorov-Davydov, Russkii peizazh XVIII–nachala XIX veka (Russian Landscapes, 18th–Beginning of 19th Century), Moscow, 1953; V. Fiala, Die russische realistische Malerei des 19. Jahrhunderts, Prague, 1953; A. P. Ivanova, Iskusstvo antichnykh gorodov Severnogo Prichërnomor'ya (Art of the Ancient Northern Black Sea Cities), Leningrad, 1953; P. E. Kornilov, Ofort v Rossii XVIII–XX vekov (Etchings in Russia, 18th–20th Century), Moscow, 1953; A. F. Korostin, Russkaya litografiya XIX veka (19th-century Russian Lithography), Moscow, 1953; F. S. Mal'tseva, Mastera russkogo realisticheskogo peizazha (Masters of Russian Realistic Landscape), 2 vols., Moscow, 1953–59; Po sledam drevnikh kul'tur: Drevnyaya Rus' (On the Track of Ancient Civilizations: Ancient Rus), II, Moscow, 1953; A. G. Romm, Russkie monumental'nye rel'efy (Russian Monumental Reliefs), Moscow, 1953; P. Schweinfurth, ed., Russian Icons, London, New York, 1953; D. P. Sukhov, ed., Russkoe zodchestvo (Russian Architecture), 6 vols., Moscow, 1953–57; A. M. Tverskoi, Russkoe gradostroitel'stvo do konsta XVII veka (Russian Town Building to the End of the 17th Century), Leningrad, Moscow, 1953; N. M. Chernyshev, Iskusstvo freski v Drevnei Rusi (The Art of Fresco in Ancient Rus), Moscow, 1954; A. E. Grabar, ed., Russkaya arkhitektura pervoi poloviny XVIII veka: Issledovaniya i materialy (Russian Architecture of the First Half of the 18th Century: Investigations and Materials), Moscow, 1954; G. H. Hamilton, The Art and Architecture of Russia, Harmondsworth, 1954; S. V. Ivanov, Materialy po izobrazitel'nomu iskusstvu narodov Sibiri XIX–nachala XX vekov (Materials on the Art of the Peoples of Siberia, 19th–Beginning of 20th Century), Moscow, Leningrad, 1954; A. I. Leonov, ed., Russkoe iskusstvo: Ocherki o zhizni i tvorchestve khudizhnikov: Pervaya polovina XIX veka (Russian Art: Essays on the Lives and Work of Artists: First Half of the 19th Century), Moscow, 1954; A. I. Leonov, ed., Russkoe sovetskoe iskusstvo: Zhivopis', skul'ptura, grafika: 1917–50 (Soviet Russian Art: Painting, Sculpture, Graphic Art: 1917–50), Moscow, 1954; N. G. Mashkovtsev, ed., Ocherki po istorii russkogo iskusstva (Essays on the History of Russian Art), Moscow, 1954; V. A. Shkvarikov, Ocherki istorii planirovki i zastroiki russkikh gorodov (Essays on the History of the Planning and Building of Russian Cities), Moscow, 1954; A. Voyce, The Moscow Kremlin: Its History, Architecture and Art Treasures, Berkeley, Los Angeles, 1954; M. V. Alpatov, Vseobshchaya istoriya iskusstv (Universal History of Art), III, Moscow, 1955; A. Chegodaev, Puti razvitiya russkoi sovetskoi knizhnoi grafiki (Development of Soviet Book Graphics), Moscow, 1955; N. I. Kaplan, Russkaya narodnaya rez'ba po myakgomu kamnyu (Russian Folk Carving in Hard Stone), Moscow, 1955; A. V. Opolovnikov, Pamyatniki derevyannogo zodchestva Karelo-Finskoi SSR (Monuments of Wooden Architecture of the Karelo-Finnish SSR), Moscow, 1955; E. S. Ovchinnikova, Portret v russkom iskusstve XVII veka (The Portrait in 17th-century Russian Art), Moscow, 1955; Russkaya zhivopis' v muzeyakh RSFSR (Russian Painting in RSFSR Museums), 11 vols., in 6, Moscow, Leningrad, 1955–63; V. V. Sadoven, Russkie khudozhniki-batalisty XVIII–XIX vekov (Russian 18th- and 19th-century Battle Painters), Moscow, 1955; D. Sarab'yanov, Narodno-osvoboditel'nye idei russkoi zhipovisi vtoroi poloviny XIX veka (The Idea of Popular Emancipation in Russian Painting of the Second Half of the 19th Century), Moscow, 1955; L. I. Yakunina, Russkoe shit'e zhemchugom (Russian Pearl Embroidery), Moscow, 1955; V. Fiala, Russian Painting of the 18th and 19th Centuries, Prague, 1956; Istoriya russkogo arkhitektury (History of Russian Architecture), 2d ed., Moscow, 1956; I. Kryukova, Russkaya narodnaya rez'ba po kosti (Russian Folk Bone Carving), Moscow, 1956; D. S. Likhachëv and others, Khudozhestvennye pamyatniki Moskovskogo Kremlya (Artistic Monuments of the Moscow Kremlin), Moscow, 1956; I. P. Rabotnova, Russkoe narodnoe kruzhevo (Russian Folk Lace), Moscow, 1956; D. B. Shelov, Antichny mir v Severnom Prichërnomor'e (The Classical World on the North Black Sea Coast), Moscow, 1956; A. A. Sidorov, Risunok starykh russkikh masterov (Drawing of Old Russian Masters), Moscow, 1956; F. Ya. Syrkina, Russkoe teatral'no-dekoratsionnoe iskusstvo vtoroi poloviny XIX veka (Russian Scenography of the Second Half of the 19th Century), Moscow, 1956; Izobrazitel'noe iskusstvo RSFSR (Fine Art of the RSFSR), 2 vols., Moscow, 1957; Izobrazitel'noe iskusstvo sovetskogo Tatarstana (Fine Art of the Soviet Tatars), Kazan, 1957; V. Makarevich, Izobrazitel'noe iskusstvo Karelii (Fine Art of Karelia), Petrozavodsk, 1957; N. G. Mashkovtsev, ed., Istoriya russkogo iskusstva (History of Russian Art, 2 vols., Moscow, 1957–60; Narodnoe dekorativnoe iskusstvo RSFSR (Decorative Folk Art of the RSFSR), Moscow, 1957; O. S. Popova, Russkaya narodnaya keramika (Russian Folk Ceramics), Moscow, 1957; I. P. Rabotnova and V. Ya. Yakovleva, Russkaya narodnaya vyshivka (Russian Folk Embroidery), Moscow 1957; I. Grabar, V. Lazarev, and O. Demus, Early Russian Icons, Greenwich, Conn, 1958; A. I. Leonov, ed., Russkoe iskusstvo: Ocherki o zhizni i tvorchestve khudozhnikov: Seredina XIX veka (Russian Art: Essays on the Lives and Work of Artists: Mid-19th Century), Moscow, 1958; T. M. Razina and others, Russkii khudozhestvenny metall (Russian Metal Art), Moscow, 1958; A. N. Reinson-Pravdin, Russkaya narodnaya skul'ptura iz dereva (Russian Wooden Folk Sculpture), Moscow, 1958; A. N. Svirin, Drevnerusskaya zhivopis' v sobranii Gosudarstvennoi Tret'yakovskoi galerei (Old Russian Painting in the Collection of the Tretyakov State Gallery), Moscow, 1958; An Exhibition of Works by Russian and Soviet Artists: Russian Painting from the 13th to the 20th Century, London, 1959; N. A. Ezerskaya, Kudozhniki Severnoi Osetii (Artists of the Northern Ossets), Moscow, 1959; V. Faleeva, Russkoe narodnoe iskusstvo (Russian Folk Art), Leningrad, 1959; M. Il'in, Russian Decorative Folk Art, Moscow, 1959; D. Sarab'yanov, Russkaya zhivopis' XIX veka (Russian 19th-century Painting), Moscow, 1959; E. G. Yakovleva, Russkie kovry (Russian Carpets), Moscow, 1959; D. D. Duncan, The Kremlin, Greenwich, Conn., 1960; M. A. Il'in, Russkaya reznaya kost' (Russian Carved Bone), Moscow, 1960; M. Kolodovskaya and E. Smirnova, Russkaya gravyura (Russian Engraving), Moscow, 1960; I. A. Potapov, Izobrazitel'noe iskusstvo sovetskoi Yakutii (Fine Art of Soviet Yakutia), Leningrad, 1960; A. A. Sidorov, Risunok russkikh masterov: Vtoraya polovina XIX veka (Drawing of Russian Masters: Second Half of the 19th Century), Moscow, 1960; G. Sternin, Russkii risunok (Russian Drawing), Moscow, 1960; S. M. Temerin, Russkoe prikladnoe iskusstvo: Sovetskoe gody (Russian Applied Art: Soviet Period), Moscow, 1960; V. M. Vasilenko, Russkaya narodnaya rez'ba i rospis' po derevu XVIII–XX vv. (Russian Folk Carving and Painting on Wood, 18th–20th Century), Moscow, 1960; K. N. Afanas'ev, Postroenie arkhitekturnoi formy drevnerusskimi zodchimi (Construction of Architectural Form by Old Russian Architects), Moscow, 1961; V. D. Blavatskii, Antichnaya arkheologiya Severnogo Prichërnomor'ya (Classical Archaeology of the Northern Black Sea), Moscow, 1961; A. L. Kaganovich, ed., Istorya russkogo iskusstva (History of Russian Art), Moscow, 1961; N. I. Kaplan, Ocherki po narodnomu iskusstvu Altaya (Essays on the Folk Art of the Altai), Moscow, 1961; K. Onasch, Ikonen, Berlin, 1961; T. M. Razina, Russkaya emal' i skan' (Russian Enamel and Filigree), Moscow, 1961; A. B. Saltykov, Russkaya narodnaya keramika (Russian Folk Ceramics), Moscow, 1961; V. M. Vishnevskaya, Russkaya narodnaya rez'ba po derevu (Russian Wooden Folk Carving), Moscow, 1961; N. N. Voronin, Zodchestvo Severo-Vostochnoi Rusi: XII–XV vv. (Architecture of Northwest Rus: 12th–15th Century), 2 vols., Moscow, 1961–62; A. I. Zotov, Narodnye osnovy russkogo iskusstva (Folk Foundations of Russian Art), 2 vols., Moscow, 1961–63; A. I. Zotov and O. I. Sopotsinskii, Russkoe iskusstvo (Russian Art), Moscow, 1961; C. Gray, The Great Experiment: Russian Art, 1863–1922, London, 1962 (bibliog.); V. V. Kostochkin, Russkoe oboronnoe zodchestvo kontsa XIII–nachala XVI veka (Russian Defensive Architecture from the End of the 13th to the Beginning of the 16th Century), Moscow, 1962; N. N. Kovalenskaya, Istoriya russkogo iskusstva XVIII veka (History of 18th-century Russian Art), Moscow, 1962; V. N. Larazev, ed., Russian Icons from the 12th to the 15th Century, New York, 1962; Yu. A. Lebedeva, Drevnerusskoe iskusstvo X–XVII vv.: Zhipovis' i arkhitektura (Old Russian Art, 10th–17th Century: Painting and Architecture), Moscow, 1962; A. I. Leonov, ed., Russkoe dekorativnoe iskusstvo (Russian Decorative Art), I, Moscow, 1962; A. I. Leonov, ed., Russkoe iskusstvo: Ocherki o zhizni i tvorchestve khudozhnikov: Vtoraya polovina XIX veka (Russian Art: Essays on Lives and Work of Artists: Second Half of the 19th Century), Moscow, 1962; I. V. Makovetskii, Arkhitektura russkogo narodnogo zhilishcha: Sever i Verkhnee Povolzh'e (Architecture of Russian Peasant Dwellings: North and Upper Volga), Moscow, 1962; J. Blankoff, L'art de la Russie ancienne, Brussels, 1963; M. Chamot, Russian Painting and Sculpture, Oxford, New York, 1963; M. Gibellino-Krasceninnicowa, L'architettura russa nel passato e nel presente, Rome, 1963; M. A. Il'in, O russkoi arkhitekture (Russian Architecture), Moscow, 1963; O. I. Lebedev, Russkaya sovetskaya zhivopis. (Soviet Russian Painting), Moscow, 1963; D. Talbot Rice, A Concise History of Russian Art, New York, 1963; Akademiya Nauk SSSR, Drevnerusskoe iskusstvo XVII veka (17th-century Old Russian Art), Moscow, 1964; N. N. Kovalenskaya, Russkii klassitsizm (Russian Classicism), Moscow, 1964; G. M. Lyudvig, ed., Ocherki istorii stroitel'noi tekhniki Rossii XIX-nachala XX vekov (Essays on the History of Building Techniques of Russia in the 19th and Beginning of the 20th Century), Moscow, 1964; Akademiya Khudozhestv SSSR, Istoriya sovetskoko iskusstva (History of Soviet Art), I, Moscow, 1965; R. Hare, The Art and Artists, of Russia, London, 1965; V. Quilici, Architettura sovietica contemporanea, Bologna, 1965; V. N. Lazarev, Old Russian Murals and Mosaics from the 11th to the 16th Century (trans., B. Roniger and N. Dunn), London, 1966; R. Wallace, The Rise of Russia, New York, 1967.

Anatoli KANTOR, Pëtr MAKSIMOV, Pëtr VOLODIN

Art centers. Moscow (Moskva). The largest city, the political economic, cultural, and industrial center of the U.S.S.R., and the capital of Russia (15th cent. to 1712), of the R.S.F.S.R. (since 1918),

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Moscow, (A) plan of the city and its expansion. *Key*: (1) The Kremlin, 12th–14th century; (2) Kitai Gorod, first half of 16th century; (3) Bely Gorod, 16th century; (4) Zemlyany Gorod, second half of 16th century; (5) city limits, late 18th century; (6) city limits, 1957. Inset B: Schematic plan of the central zone showing the walls and monasteries of the 16th and 17th centuries. *Key*: (1) Monasteries in Kitai Gorod and Zemlyany Gorod; (2) fortified monasteries on the south; (3) walls of the Kremlin, 1485–95; (4) walls of Kitai Gorod, 1535–38; (5) walls of Bely Gorod, 1586–93; (6) fortifications of Zemlyany Gorod, 1591–92. Principal monasteries: (*a*) Zachatevski: (*b*) Alekseyevski; (*c*) Krestovozdvizhenski; (*d*) Nikitski; (*e*) Strastnoi; (*f*) Vysoko-Petrovski; (*g*) Rozhdestvenski; (*h*) Stretinski; (*i*) Ivanovski; (*j*) Novinski; (*k*) Novodevichi; (*l*) Danilovski; (*m*) Simonovski; (*n*) Novospasski; (*o*) Donskoi.

and of the U.S.S.R. (since 1922). The town was first mentioned in chronicles of 1147. The Kremlin, the most ancient part of Moscow, was built in 1156 on the Borovitski hill at the confluence of the Neglinnaya and Moskva rivers. In 1339 it was enlarged and surrounded by oak defensive walls and towers; in 1367 walls and towers of white stone were erected; these were replaced in 1485–95 by brick ones (over $1^1/_4$ mi. long and enclosing an area of ca. 70 acres), which have survived to the present (XIII, FIG. 95). The basic layout of the city was determined by streets diverging radially from the Kremlin and by three belts of town fortifications marking the city's gradual growth: the fortress walls of Kitai Gorod (1535–38), designed by Petrok Maly; those of Bely Gorod (1586–93), about 6 mi. long, designed by Fëdor Kon; and the wooden walls of Zemlyany Gorod (1591–92), about 10 mi. long, which were replaced by earthen ramparts (1611). The radial ring system was consolidated in the projected town plan of 1775–90, which received further elaboration during the rebuilding of Moscow after the fire of 1812, at which time the city's central squares — Red and Theater (now Sverdlov) squares — were formed; in place of the Bely Gorod and Zemlyany Gorod, boulevards with squares at the points of intersection with the radial streets were put through. In the second half of the 19th century, Moscow became an industrial and trading center with factories, apartment houses, banks, and offices. On the outskirts of the city densely populated districts have arisen.

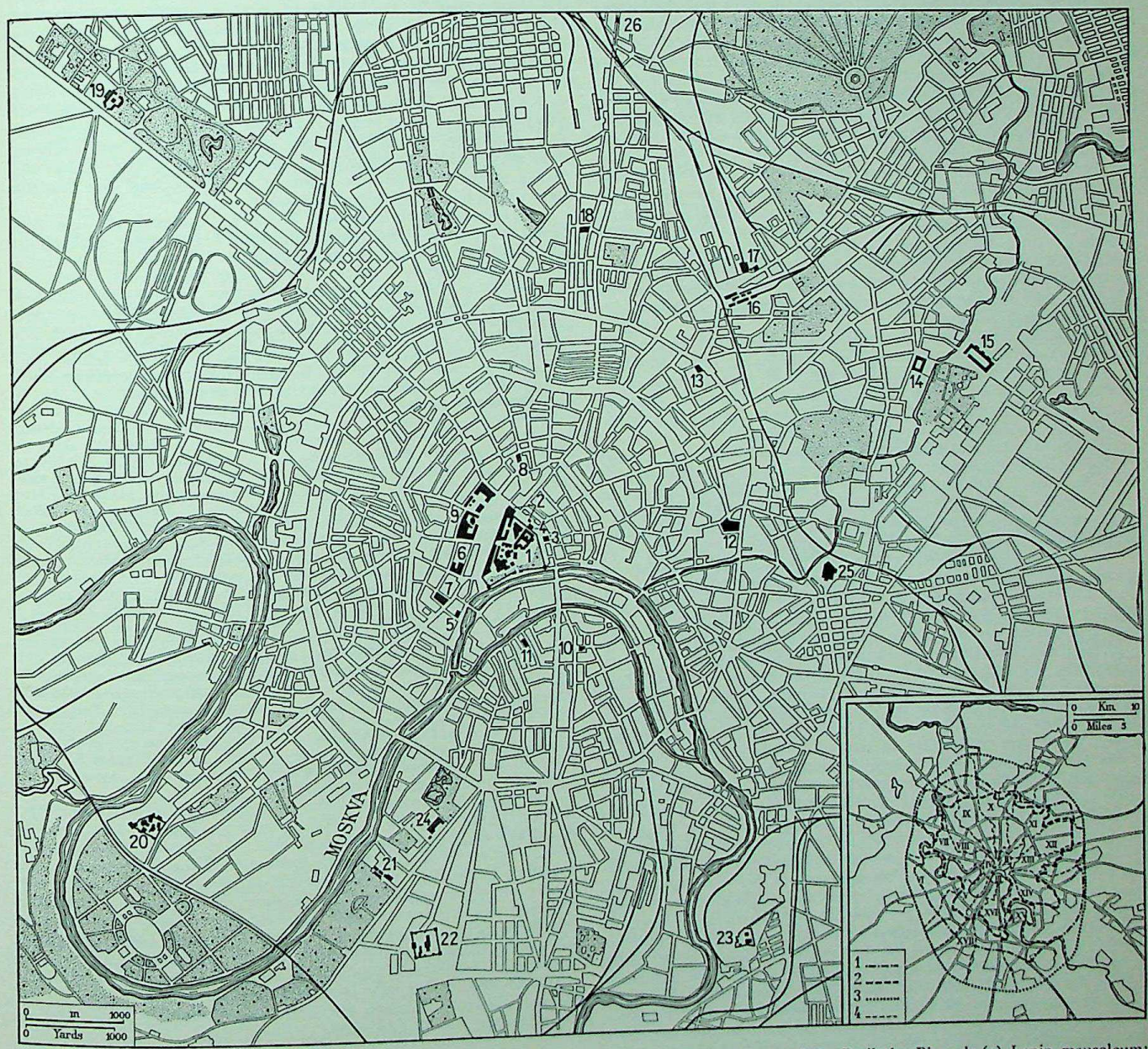
The chief architectural monument of the 14th–17th century is the Kremlin, which includes the following major edifices: the Cathedral of the Dormition, also known as the Assumption (Uspenski Sobor, 1475–79; XIII, PL. 58), built by Aristotele Fioravanti of Bologna, which contains frescoes (1513–14, 1642–43) and the tsar's throne with reliefs (1551); the Cathedral of the Annunciation (Blagoveshchenski Sobor, 1484–89), built by architects from Pskov, with frescoes (1508) and icons (1405) executed by Theophanes the Greek, Andrei Rublëv (q.v.; XII, PL. 338), and others; the Cathedral of the Archangel Michael, also known as Archangel Cathedral (Arkhangelski Sobor, 1505–09; XII, PL. 112; XIII, PL. 58), built by Aloisio (Alevisio Novi) from Milan, with frescoes (1652–66); the Church of the Ordination (Rizpolozhenie, 1484–86), built by architects from Pskov; the Granovitaya Palace, also known as the Palace of Facets (1487–91; XII, PL. 112), built by M. Ruffo and P. A. Solari; the Bell Tower of Ivan the Great (1505–08), designed by Marco Bono and completed in 1600 by Russian architects; the Church of the Twelve Apostles and the Palace of the Patriarchs (1653–56, completed 1691); and the Terem Palace (1635–36), by B. Ogurtsov, L. Ushakov, T. Sharutin, and others. In the 16th century the towers of the Kremlin were given multistoried tent roofs — the Saviour Tower (Spasskaya Bashnya) in 1624–25, and the others between 1670–80.

Other buildings of the same period, not in the Kremlin, are the Andronikov Monastery, with the Cathedral of Our Saviour (Spasski

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Sobor, ca. 1420–27) and a refectory building (1504–06) with a church (1694); the small pierless churches with cross vaults located in the former tradesmen's district: the churches of St. Trifon (early 16th cent.) and the Conception of St. Anne (16th cent.); the five-domed Smolensk Cathedral in the Novodevichi Convent (1524–25; frescoes, 1598); the tent-roofed Church of the Ascension in Kolomenskoe (XIII, PL. 255, FIG. 97); the Church of St. John the Baptist in Dyakovo (mid-16th cent.); on Red Square, the Cathedral of the Intercession (Pokrovski Sobor), later known as the Church of St. Basil the Blessed (XIII, PL. 59, FIG. 97), consisting of nine tower-shaped churches; the tent-roofed Church of the Transfiguration in the village of Ostrov near Moscow (2d half of 16th cent.); and the Cathedral of the Donskoi Monastery (1593). In the 16th century fortified monasteries were built around Moscow.

To the 17th century belong the relatively small, asymmetrical, multicontoured churches with richly adorned façades of plain and molded bricks. Examples of this ornate architectural style are the Church of the Trinity in Nikitniki (ca. 1635–53), the Church of the Nativity of the Virgin in Putinki (1649–52), the Church of St. Nicholas in Pyzhi (1647), the Church of St. Nicholas in Khamovniki (1679), and the Church of the Trinity in Ostankino (1678–92; XIII, PL. 60). (To distinguish Moscow churches of the same name, the district of the city is often given.) Among the edifices in the baroque Naryshkin style (end of 17th cent.) are the Church of the Resurrection in Kadashi (1687; bell tower, 1695), Church of the Intercession (Pokrov) in Fili (ca. 1693, II, FIG. 277), Church of the Trinity in Troitskoe-Lykovo (1698–1703), and the Church of the Virgin of the Sign (Znamenie, ca. 1702) in Sheremetev Court (ca. 1702) — all of which have a harmonious, tiered, central-plan distribution of spaces, and details in white stone on red brick walls. Other late-17th-century buildings include the Novodevichi Convent (1680–ca. 1690); the Vysokopetrovski Monastery (ca. 1690); the refectory of the Simonov Monastery (ca. 1683) and the Krutitski Palace (ca. 1694), both by O. D. Startsev; the Printing House (Pechatny Dvor, 1679); the Vol-



Moscow, plan of the central zone. Principal monuments: (1) Kremlin; (2) Red Square; (3) Church of St. Basil the Blessed; (4) Lenin mausoleum; (5) Church of the Glorification of the Virgin; (6) Lenin Library (formerly Pashkov Palace); (7) A. S. Pushkin Museum of Fine Arts; (8) Bolshoi Theater; (9) Lomonosov University; (10) Church of St. Clement; (11) Tretyakov Gallery; (12) Museum of Oriental Culture; (13) Lenin Academy of Agricultural Sciences (formerly Volkov mansion); (14) Lefort Palace; (15) Military Hospital in Lefortovo; (16) Kazan Station; (17) Yaroslavl Station; (18) Church of Philip the Metropolitan; (19) Peter Palace (Petrovski Dvorets); (20) Novodevichi Convent; (21) U.S.S.R. Academy of Sciences (Aleksandrinski Palace); (22) Museum of Architecture (formerly Donskoi Monastery); (23) Simonovski Monastery; (24) Municipal (formerly Golitsyn) Hospital; (25) Andronikovski Monastery; (26) to the villa of Ostankino. Inset: Scheme of the present city. *Key*: (1) Approximate city limits according to the town plan of 1935; (2) city limits, 1957; (3) actual city boundary; (4) district boundaries. Districts: I Sverdlovski; II Baumanski; III Kirovski; IV Frunzenski; V Leninski; VI Kievski; VII Krasnopresnenski; VIII Leningradski; IX Timiryazevski; X Dzerzhinski; XI Kuibyshevski; XII Pervomaiski; XIII Kalininski; XIV Zhdanovski; XV Propetarski; XVI Moskvorechski; XVII Oktyabrski.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

kov and Troekurov mansions; and the Lefort Palace (1697–98), by D. Aksamitov.

Constructions of the first half of the 18th century in the Muscovite baroque style are the Arsenal in the Kremlin (1702–36), by D. O. Ivanov, M. Choglokov, and C. Conrad; the Church of the Archangel Gabriel, generally known as the Menshikov Tower (1704–07), by I. P. Zarudny; the Church of St. John the Warrior (Ioann Voin, 1709–13); the Church of St. Clement (1762–70); and the Apraksin house (ca. 1760).

The most important neoclassic buildings of the second half of the 18th century are the Pashkov Palace, now the Lenin Library (PL. 238), by V. I. Bazhenov; the former senate building (1776–87), now the Supreme Soviet, in the Kremlin; the University (1787–93, rebuilt 1817–19), by D. Gilardi; and the Hall of the Noblemen's Assembly, now the Hall of Columns in the House of Trade Unions (PL. 238), the Golitsyn Hospital (1796–1801), the Church of Philip the Metropolitan (1777–88), and a group of houses, villas, and churches — all by M. F. Kazakov. Other landmarks are the Military Hospital in Lefortovo (1798–1802), by I. V. Egotov, and the Hostel (Strannopriimny Dom, 1794–1807), now the Sklifosovski Institute, by E. S. Nazarov and G. Quarenghi. The Peter Palace (Petrovski Dvorets, 1775–82), designed by M. F. Kazakov, was built in medieval style.

After the fire of 1812, architecture in Moscow acquired a marked unity of style. Among the neoclassic monuments of the first half of the 19th century are the Bolshoi Theater (1821–24), designed by O. I. Bove and A. A. Mikhailov and rebuilt (1856) by A. K. Kavos; the Food Storehouses (Proviantskie Sklady, 1832–35), by V. P. Stasov and F. M. Shestakov; the building of the Council for the Needy (Opekunski Sovet, 1823–26), by D. Gilardi and A. G. Grigorev; the Stanitskaya house (1817–22), by A. G. Grigorev; and the Usachëv-Naidënov villa (1829–31), by D. Gilardi. The suburban villa of Tsaritsino (1775–85), by V. I. Bazhenov and M. F. Kazakov, combined neoclassic principles with old Russian and Gothic forms. In neoclassic style are the suburban villas of Ostankino, Kuskovo, Arkhangelskoe, and Kuzminki.

Eclectic constructions of the middle and second half of the 19th century include the Great Kremlin Palace (1838–49), by K. A. Thon; the commercial arcades of Red Square (1889–93), at present the GUM department store, by A. N. Pomerantsev; the Historical Museum (PL. 243), by V. O. Sherwood; and the seat of the city duma (1890–92), now the Lenin Museum, by D. N. Chichagov.

Notable structures dating from the beginning of the 20th century are the Yaroslavl Railroad Station (1903–04) and the Ryabushinski house (ca. 1900), both designed by F. O. Schechtel in the Art Nouveau style; the Kazan Railroad Station (1913–26), by A. V. Shchusev; the Tarasov house (1909–10), by I. V. Zholtovski; and the A. S. Pushkin Museum of Fine Arts (PL. 243), by R. I. Klejn.

In the years 1918–24 the "Plan of the New Moscow" was drawn up under the direction of A. V. Shchusev and I. V. Zholtovski.

In the last half of the 1920s and the beginning of the 1930s many large factories and housing complexes were built. Major constructions from this period are the Lenin mausoleum (1924–30; PL. 251), by A. V. Shchusev; the Izvestiya newspaper building (1925–26), by G. B. Barkhin; the Marx-Lenin Institute (1926–27), by C. E. Chernyshev; the complex of the Lenin State Library, which was enlarged after 1920 according to plans by V. A. Shchuko and V. G. Gelfreikh; the Likhachëv automobile factory (1934–37), by E. M. Popov and others; the House of Culture of the automobile factory (1930–37), by the Vesnin brothers; the Central Statistics Bureau in Kirov Street (1929–36), by Le Corbusier (q.v.) and N. Ya. Kolli; the Pravda newspaper building (1929–36), by P. A. Golosov; and the building of the Council of Ministers of the U.S.S.R. (1933–35), by A. Ya. Langman. In 1931 a broad program of housing construction and community development was adopted, and in 1935 a general plan for the rebuilding of Moscow was approved. Participants in the drawing up and execution of the projects included architects of the older generation (e.g., V. N. Semenov, A. P. Ivanitski, B. M. Iofan, L. V. Rudnev), along with others who had received their training during the Soviet period (e.g., K. S. Alabyan, A. K. Burov, A. V. Vlasov, G. P. Goltz, A. G. Mordvinov, M. N. Parusnikov, Z. M. Rosenfeld, M. I. Sinyavski, L. Z. Cherikover, D. N. Chechulin). The central squares of Moscow were rebuilt, as well as Gorki Street, Kutuzov Prospect, Greater Kaluga Street (now part of the Lenin Prospect), the Peace Prospect, and other thoroughfares. Between 1932 and 1935, under the direction of the architects I. A. Fomin, A. N. Dushkin, and D. N. Chechulin, the first stations of the Moscow subway were built. Other projects of the 1930s were the All-Russian Agricultural Fair (1939), the Moscow Canal (1932–37), and bridges and embankments (1936–38). Since 1948 large housing developments of prefabricated reinforced-concrete constructions have been built. Many buildings based on individual designs are marred by excessive decorativeness, as exemplified by some of the skyscrapers erected in the years 1947–53, the largest of which is the Moscow State University on Lenin Hills (PL. 253), by L. V. Rudnev, S. E. Chernyshëv, P. V. Abrosimov, and A. F. Khryakov. Since 1955 housing construction has been concentrated in previously vacant areas, and a whole series of large city districts based on microcommunities has arisen (PL. 167).

Some of the major public buildings of this period are the Central Lenin Stadium (1955–56), by A. V. Vlasov, I. E. Rozhin, N. N. Ullas, A. F. Khryakov, and others; the Russia Cinema (1961), by Yu. N. Sheverdyaev, D. S. Solopov, E. A. Gadzhinskaya, and others; the Convention Hall in the Kremlin (PL. 253), by M. V. Posokhin, A. A. Mndoyants, E. N. Stamo, and P. P. Shteller; the Youth (Yunost) Hotel (1961); and the Pioneers' House (1960–62), by I. A. Pokrovski and others.

Museums and galleries in Moscow and environs: Tretyakov Gallery (1856), Russian and Soviet art; A. S. Pushkin Museum of Fine Arts (1912), a collection of world art; Museum of Oriental Culture (1918); Historical Museum (1873), collections of archaeological finds, textiles, garments, and objects used in daily life; Museum of the History and Reconstruction of Moscow (1896), material on the history and building of the city and collections of gifts presented to the city; Museum of Architecture (1935), a collection of original designs by Russian and Soviet architects; Shchusev Museum of Russian Architecture; Armory Palace (Oruzheinaya Palata), or Hall of Arms, in the Kremlin (converted into a museum in 1806), an extremely rich collection of court treasures and the minor arts; the Arkhangelskoe estate (opened as a museum after 1917), containing furniture, decorative goods, painting, and sculpture; the Ceramics Museum (1932) on the 18th-century estate of Kuskovo; Serf Art Museum (after 1917) in the Ostankino mansion.

Art schools and institutes: U.S.S.R. Academy of Fine Arts; U.S.S.R. Academy of Construction and Architecture; Surikov Institute of Art; Institute of Architecture.

BIBLIOG. I. M. Snegirov, Moskva, 2 vols., Moscow, 1865–73; I. E. Bondarenko, Arkhitekturnye pamyatniki Moskvy (Architectural Monuments of Moscow), 3 vols., Moscow, 1904–05; I. E. Zabelin, Istoriya goroda Moskvy (History of the City of Moscow), 2d ed., I, Moscow, 1905; L. Leger, Moscou, 2d ed., Paris, 1910; P. I. Gol'denberg, Staraya Moskva (Old Moscow), Moscow, 1947; Yu. Yu. Savitski, Moskva: Istoriko-arkhitekturny ocherk (Moscow: Historical-Architectural Essay), Moscow, 1947; M. N. Tikhomirov, Drevnyaya Moskva (Ancient Moscow), Moscow, 1947; S. Toropova, ed., Arkhitekturnye pamyatniki Moskvy XV–XVII vv.: Novye issledovaniya (Architectural Monuments of 15th–17th-century Moscow: New Investigations), Moscow, 1947; P. V. Sytin, Istoriya planirovki i zastroiki Moskvy (History of Planning and Building in Moscow), 2 vols., Moscow, 1950–54; A. P. Smirnov, ed., Arkheologicheskie pamyatniki Moskvy i Podmoskov'ya (Archaeological Monuments of Moscow and Its Suburbs), Moscow, 1954; A. Voyce, The Moscow Kremlin, Berkeley, Los Angeles, 1954; M. N. Tikhomirov, Srednevekovaya Moskva v XIV–XV vekakh (Medieval Moscow in the 14th and 15th Centuries), Moscow, 1957; B. Shkvarikov, ed., Moskva: Planirovka i zastroika 1945–57 (Moscow: Planning and Building, 1945–57), Moscow, 1958; P. V. Sytin, Iz istorii moskovskikh ulits (From the History of Moscow's Streets), Moscow, 1958; A. I. Vlasyuk, Moscovski Kreml' (The Moscow Kremlin), Moscow, 1958; B. S. Zemenkov, Pamyatnye mesta Moskvy (Memorable Places in Moscow), Moscow, 1959; D. D. Duncan, The Kremlin, Greenwich, Conn., 1960; V. N. Ivanov and others, Moskva: Arkhitekturny putevoditel' (Moscow: Architectural Guide), Moscow, 1960; A. P. Kovalev, Muzei i vystavki Moskvy (Museums and Exhibitions in Moscow), Moscow, 1960; P. A. Volodin and others, Novye raiony Moskvy (The New Districts of Moscow), Moscow, 1960; M. A. Il'in, Moskva, Moscow, 1963; L. S. Erokhina and M. N. Shurinova, eds., Ulitsy Moskvy (Moscow's Streets), Moscow, 1964; A. Voyce, Moscow and the Roots of Russian Culture, Norman, Okla., 1964.

Arkhangelsk (Archangel). This large port situated on the Northern Dvina River, near the White Sea, was founded in 1584. It was known as Novo-Kholmogory until 1613. Among the stone constructions of the 17th and early 18th centuries are the fortresslike market building (1668–84), designed by D. M. Startsev, with six towers and picturesque embellishment in the Muscovite ornate style, and the Novodvina Fortress (1701–05). In 1794 a town plan based on regularly aligned streets crossing at right angles was adopted. Notable structures in the neoclassic style are the provincial administrative buildings (1806) and the governor's residence (1817), both rebuilt in 1932, as well as the rope factory (beginning of the 19th cent.), by A. D. Zakharov. A new town plan was adopted in 1950. The art museum was founded in 1960.

BIBLIOG. M. F. Kuznetsov, Arkhangel'sk, Arkhangelsk, 1959.

Astrakhan. This port on the Volga River is situated about 62 mi. from the Caspian Sea. In 1558 it became a center of trade with Asia. Among the surviving monuments of art-historical interest are the stone kremlin, with defensive walls and towers (1580–1620), by Mikhail Velyaminov, Dei Gubasty, and others; the Cathedral of the Dormition (Uspenski Sobor, 1700–10), by Dorofei Myakishev; and the Cathedral of the Trinity (1698–1700). During the Soviet period

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

the city has been rebuilt in accordance with a town plan (1957) based on a network of streets crossing at right angles; in the center stands the kremlin. The art collection is housed in the Kustodiev Picture Gallery.

BIBLIOG. A. S. Shaposhnikov, Astrakhan', Moscow, 1956; A. V. Vorob'ëv, Astrakhanski Kreml' (The Astrakhan Kremlin), Astrakhan, 1958.

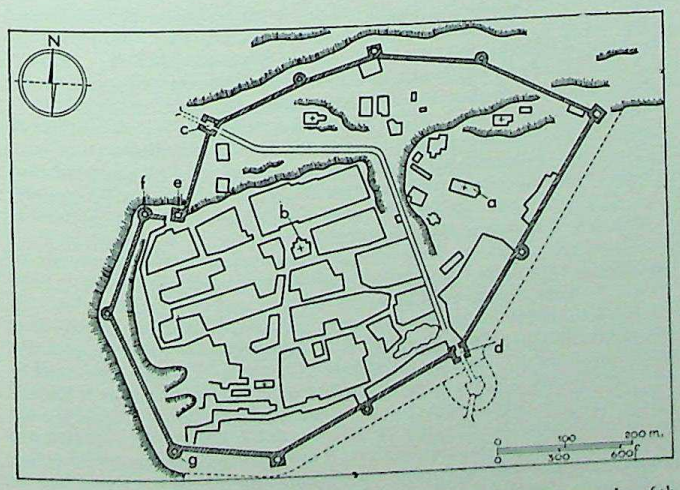
Bolgar Veliki (Bulgar Veliki, Bolgary Velikie). The ancient town that was the capital of the Volga-Kama Bulgars from the 10th to the 15th century. Destroyed in the 14th–15th century, the ruined town is located about 4 mi. from the Volga, near the village of Bolgar in the Kuibyshev district of the Tatar A.S.S.R., a subdivision of the R.S.F.S.R. Among the architectural monuments of the 13th and 14th centuries are rectangular houses with two-sloped or flat roofs and interiors richly decorated with stuccoes; baths with elaborate heating systems; the Little Minaret; and a mausoleum. The Khan's tomb, the Church of St. Nicholas, the monasterial crypt, and the ruins of the Square Mosque are all buildings of the same type, consisting of a basic cubic structure, from which, by means of pendentives, the transition is effected to an octagonal drum surmounted by a rounded cupola or a pyramid. The walls are richly decorated — outside with niches, stone carving, and colored tiles, inside with colonnettes, rosettes, and stalactites in the corners.

BIBLIOG. A. P. Smirnov, Volzhskie Bulgary, Moscow, 1951; V. V. Egerev, Arkhitektura goroda Bolgara (The Architecture of the City of Bolgar), Trudy Kuibyshevskoi arkheologicheskoi ekspeditsii, II (MIA, LXI), Moscow, 1958, pp. 360–91.

Derbent. Situated on the shores of the Caspian Sea, in the Dagestan A.S.S.R., the town has been in existence for more than one and a half millenniums. Architectural monuments of note are the town walls, with 3 gates and 30 towers (5th–6th cent.); the three-aisled mosque (Dzhuma), which was built in 733 from an existing Christian basilica and completely rebuilt in the years 1368–69, after an earthquake; Arab burials (8th cent.) in the Kyrkhlyar cemetery; and caravansaries and mosques (17th–18th cent.). A new town plan (1955), drawn up by the Leningrad Town Planning Institute, provides for expansion to the north and for the conversion of the old part of the town into a museum.

BIBLIOG. E. I. Kozubski, Istoriya goroda Derbenta (History of Derbent), Tamir-khan-shura, 1906; S. O. Khan-Magomedov, Derbent, Moscow, 1958.

Gorki (until 1932, Nizhni Novgorod). The city, founded in 1221, is situated at the confluence of the Oka and Volga rivers and consists of two parts — the Nagornaya (on the hills) and the Zarechnaya (on the rivers). The layout of the Nagornaya gravitates toward the kremlin (1500–11; including the Archangel Cathedral, 1631, by L. Vozoulin) and is based on a regular street plan (second half of the 18th cent.) combined with a radial and semiannular system. Important edifices of the 17th and 18th centuries are the Pecherski and Annunciation (Blagoveshchenski) monasteries and the Church of the Nativity — the so-called "Stroganov Church" — completed in 1718. During the Soviet period both sections of the city have expanded.



Gorki (formerly Nizhni Novgorod), plan of the kremlin in the early 16th century. Principal monuments: (*a*) Cathedral of the Saviour; (b) Archangel Cathedral; (*c*) Tower of Ivan; (*d*) Tower of Dmitri; (*e*) Clock Tower; (*f*) North Tower; (*g*) Koromyslova Tower.

The art museum (1896) contains a collection of Russian and Soviet painting, sculpture, and graphic art.

BIBLIOG. S. Agafonov, Gorod Gor'ki (The City of Gorki), Moscow, 1949; L. F. Garanina, Gorod Gor'ki: Putevoditel'-spravochnik (The City of Gorki: Guide-manual), Gorki, 1961.

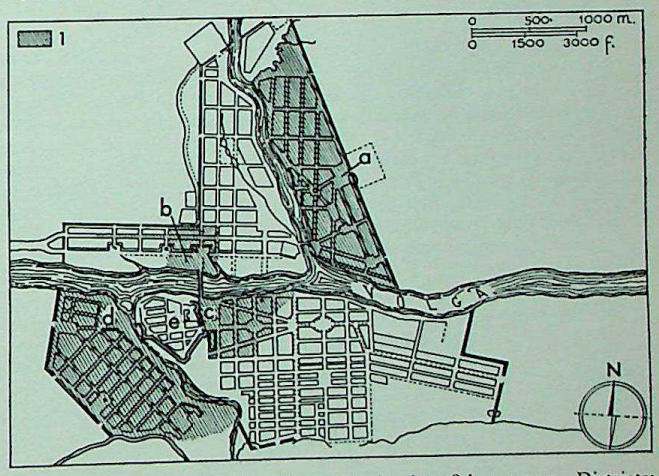
Ioshkar-Ola (until 1919, Tsarevokokshaisk; from 1919 to 1927, Krasnokokshaisk). Founded in 1578 and capital of the Mari A.S.S.R. since 1920, the town is situated on the Little Kokshaga River in the Volga River basin. The original city was built without any definite plan and contained log houses with carved ornamentation on cornices, window surrounds, porches, and gates. The church in Ezhovo (1647) and the Church of the Ascension (1756) are built of stone. During the Soviet period the town has been enlarged in conformity with a town plan.

BIBLIOG. P. A. Samsonov, Ioshkar-Ola, Ioshkar-Ola, 1960.

Irkutsk. A large industrial center of Siberia situated at the confluence of the Irkut and Angara rivers, Irkutsk was founded in 1686 and became an important political deportation center. Noteworthy buildings are the Church of Our Saviour (1706); the Church of the Raising of the Cross (1758–60); the "Humped" and "White" houses (both 18th cent.); the Technical Industrial School (ca. 1830), by the architect Rozen; the building of the city duma (ca. 1890), by the architect Rassushin; the theater (1893–97), by V. A. Shreter; and public and industrial buildings of the Soviet period. The district art museum is located here.

BIBLIOG F. A. Kudryavtsev and E. P. Silin, Irkutsk: Ocherki po istorii goroda (Irkutsk: Essays on the City's History), Irkutsk, 1947; F. A. Kudryavtsev and G. A. Vendrikh, Irkutsk, Irkutsk, 1958 (bibliog.).

Kalinin (until 1931, Tver). Situated on the Volga River, the city was first mentioned in 1134–35. From the 13th to 15th century



Kalinin (formerly Tver), plan of the city in the 18th century. Districts: (*a*) Zatveritski; (*b*) Zavolzhski; (*c*) Zagorodski; (*d*) Zatmatski; (*e*) fortress of Tver.

it was the center of the principality of Tver. The Church of the White Trinity (1564) has survived. After a fire in 1763, a three-pronged town plan with four squares along the main axis was worked out. On an octagonal plaza stand the former town hall (1770–80), at present the headquarters of the town soviet; the former House of the Noblemen (1766–70), now headquarters of the town committee of the Communist party; and the former school (1780), now the Young People's Theater. Other noteworthy monuments are the palace of Catherine the Great (1763–75), built by M. F. Kazakov and rebuilt in 1809 by K. I. (Carlo) Rossi; the 18th-century houses on the embankment; and the Hall of Columns of the Noblemen's Assembly. During the Soviet period the city has grown appreciably. The district picture gallery is located here.

BIBLIOG. V. S. Borzakovski, Istoriya tvorskago knyazhestva (History of the Tver Principality), St. Petersburg, 1876; Yu. and Z. Shamurin, Kaluga, Tver', Tula, Torzhok, Moscow, 1913; D. D. Baragin, Kalinin, Moscow, 1952.

Kaluga. Situated on the Oka River, Kaluga was first mentioned in 1371; in the 15th century it was a large fortified town. In the 18th century the town's street plan, combining radial features with streets crossing at right angles, took shape. Buildings dating from the end of the 17th century and the beginning of the 18th are the house of the merchant Korobov (end of the 17th cent.) and the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

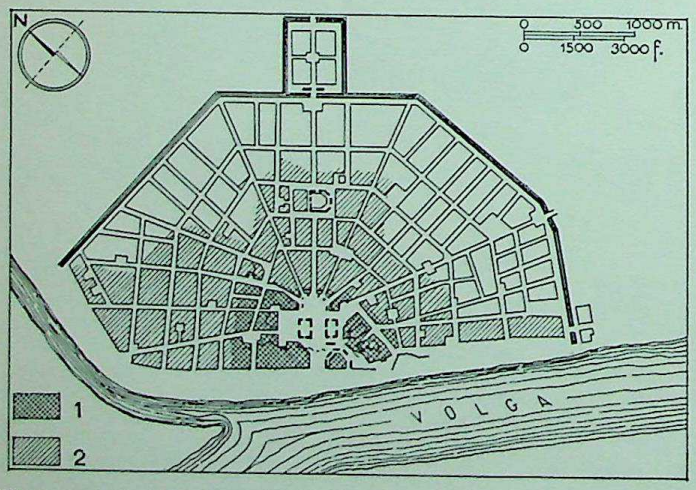
churches of the Intercession (1687) and St. George (1700–01), both in the Naryshkin style of Moscow. Among the neoclassic constructions are a complex of public buildings (1780–87), presumably designed by P. R. Nikitin; the Trinity Cathedral (1786–1819), by I. D. Yasnygin; the Institute for the Nobility (1782–85), at present the Pedagogical Institute; 18th- and 19th-century houses [e.g., the Kologrivova house (1805–08), which now houses the ethnographic and art museum]; the Market Building (1784–88), completed in the years 1811–21 by I. D. Yasnygin. The city has been enlarged in accordance with a town plan that was adopted in 1949 and worked out in detail by the Moscow Town Planning Institute in 1959. The district art museum is located here.

BIBLIOG. D. I. Malinin and others, Kaluga, Kaluga, 1912; M. V. Fekhner, Kaluga, Moscow, 1961.

Kazan. The capital of the Tatar A.S.S.R. since 1920, this city on the Volga River was founded at the end of the 14th century and became the capital of the Kazan Khanate (15th–16th cent.). In the center of the city is the stone-walled kremlin (1556, 1594), by Pskov builders (Postnik, Ivan Shiryai, and others), including the Tower of Syumbek (end of the 17th cent.), the Tower of Our Saviour (16th–17th cent.), and the five-domed Cathedral of the Annunciation (1561–62). In the 18th century the town acquired a regular street plan. Buildings of artistic significance are the Cathedral of SS. Peter and Paul (1726) and the Dryablov house (beginning of 18th cent.), both in baroque style; the 18th-century Ananaev and Merdzhani mosques; and the neoclassic buildings of the University, including the main building (1822–25), by P. G. Pyatnitski, and the anatomical theater, observatory, and clinics (all ca. 1830–40), by M. P. Korinfski. During the Soviet period Kazan has been considerably enlarged and rebuilt. The Tatar Republic Museum of Figural Art was founded in 1958.

BIBLIOG. P. M. Dul'ski, Pamyatniki kazanskoi stariny (Monuments of Kazan's Antiquity), Kazan, 1914; K. Topuridze, Kazan', Moscow, 1945; N. F. Kalinin, Kazan': Istoricheski ocherk (Kazan: Historical Essay), 2d ed., Kazan, 1955.

Kostroma. Situated on the Volga River, the town has been known since 1214. Monuments from the 16th and 17th centuries are the Cathedral of the Bogoyavlenski Monastery (1559–65; frescoes, 1672); the Ipatevski Monastery, which includes stone walls, towers, the Trinity Cathedral (1652; frescoes, 1685, by the painter Guri Nikitin and others), the bell tower (1603–05, rebuilt 1649 and 1652), and the Romanov mansion (1586–90, rebuilt 1863); the Church of the Resurrection (1652); and the Church of St. John the Theologian in the Ipatevski district (1681–87; frescoes, 1735). In 1781 a town plan, incorporating a regularly aligned, fan-shaped system of streets converging toward the Volga, was adopted. The neoclassic Market Building (1789–1800), by K. Kler and S. A. Vorotilov, was enlarged in the first third of the 19th century according to designs by N.



Kostroma, plan of the city in the late 18th century. *Key*: (1) Original nucleus, until the 14th century; (2) approximate zone of the city nucleus before the 1781 plan.

Metlin, P. I. Fursov, and V. P. Stasov. The building of the main guard (1824–25), the fire tower (1825–26), the former Assembly of the Noblemen (1837–38), now the Pioneers' House, and a group of houses were all built by the architect P. I. Fursov. Houses and public buildings have been constructed during the Soviet period. The district picture gallery is located in Kostroma.

BIBLIOG. V. N. Ivanov and M. V. Fekhner, Kostroma, Moscow, 1955; Kostroma, Kostroma, 1963.

Kursk. Situated on the right bank of the Tuskar (Tuskor) River (the Dnieper River basin), Kursk was first mentioned in chronicles of 1095. From 1597 it was a borderland fortress with a wooden prison. Important structures of the 17th and 18th centuries are the house of the Romodanov boyars (1649–80); Trinity Church (1695); and the Cathedral of St. Sergius (1752–78), in the baroque style of the school of B. F. Rastrelli. The town plan of 1782 introduced regularity into the old layout of the town. In neoclassic style are the Desinev house (1790), by G. Quarenghi, which is now part of the district hospital, and the Cathedral of the Virgin of the Sign (Znamenski, 1816–26), by A. I. Melnikov. During the Soviet period the town has been built up in accordance with a new plan drawn up in the postwar years. The district picture gallery is located here.

BIBLIOG. V. F. Gabel' and I. N. Gulin, Kursk, Moscow, 1951.

Leningrad (until 1914, St. Petersburg; from 1914 to 1924, Petrograd). Second only to Moscow among the cities of the U.S.S.R., Leningrad is one of the most important industrial, cultural, and scientific centers of the nation. From 1712 to 1918 it was the capital of Russia. The city is situated on more than 100 low islands of the Neva River delta, which are joined together by 362 bridges; it was founded in May, 1703, when the cornerstone of the Fortress of SS. Peter and Paul on Zayache Island was laid. From the shipyards (1704) — later the site of the Admiralty (PL. 242) — fanned out three streets that were to become part of the basic layout of the old part of Leningrad as well as the city's main thoroughfares. The Nevski Prospect assumed great importance with the founding of the Alexander Nevski Lavra (1710–13) at its farther end.

The major early-18th-century buildings are the Cathedral in the Fortress of SS. Peter and Paul (1712–33), by D. Trezzini, which has a bell tower (ca. 400 ft. high) surmounted by a spire and houses an iconostasis (1722–26) by I. P. Zarudny; the Twelve Colleges (1722–42), by Trezzini and others; the Kunstkammer (1718–34), by G. J. Mattarnovi, N. F. Härbel, G. Chiaveri, M. G. Zemtsov, and others; the Summer Palace of Peter the Great (1710–14); and the Menshikov Palace on Vasilevski Island (begun 1710), by G. M. Fontana and G. Schädel. In the first third of the 18th century the following palaces with parks were built around Leningrad: Strelna (1716–26), by C. B. Rastrelli, A. J. B. Le Blond, M. G. Zemtsov, and others; Peterhof (see *Petrodvorets*); Tsarskoe Selo (see *Pushkin*); and Oranienbaum (1711–20), now Lomonosov, by Fontana and Schädel. In the 1730s the plan for the city's layout was reworked by P. M. Eropkin, with the collaboration of Zemtsov and Korobov.

Mid-18th-century baroque edifices are the Stroganov (1752–54) and Vorontsov (1749–57) palaces; the Smolny Convent (1748–64), with a five-domed Cathedral in the center of a square courtyard formed by rows of cells that has four small churches at the corners; and the Winter Palace (1754–62) — all designed by B. F. Rastrelli. The Naval Cathedral of St. Nicholas (1753–62), by S. I. Chevakinski, is also baroque. By competition (1763) a new city plan was devised (A. V. Kvasov and others), further developing the regular layout of the capital. Structures in a transitional style approaching neoclassicism are the Academy of Fine Arts (1764–88), by A. F. Kokorinov and J. B. Vallin de la Mothe, and the Marble Palace (1768–85), now the Lenin Museum, by A. Rinaldi.

Neoclassic buildings of the end of the 18th century are the Tauride Palace (1783–89) and the Trinity Cathedral in the Alexander Nevski Lavra (1776–90), both by I. E. Starov; the Engineers', or Michael, Castle (1797–1800), by V. I. Bazhenov and V. Brenna; and the Academy of Sciences (1783–89), the Hermitage Theater (1783–87), and the Smolny Institute (1806–08) — all of which were designed by Quarenghi. The wrought-iron grilles for the Summer Garden (1784) were designed by Ya. M. Velten in collaboration with P. Egorov. Outstanding buildings were constructed at Oranienbaum (the Chinese Palace, 1762–68, by Rinaldi), Tsarskoe Selo, and Peterhof, and new suburban residences were begun at Gatchina (1766–81, Rinaldi) and Pavlovsk (see below).

Among the neoclassic buildings constructed in the first half of the 19th century are the Admiralty, which was rebuilt (1806–23) by A. D. Zakharov; and the Cathedral of the Virgin of Kazan (1801–11; PL. 240) and the Academy of Mines (1806–11), both by A. N. Voronikhin. Major urban complexes dating from the same period are Strelka Square on Vasilevski Island, with the Stock Exchange (1805–10), by Thomas de Thomon, and other buildings; the Parade Ground, with the Imperial Barracks (1817–20), by V. P. Stasov; and works by K. I. (Carlo) Rossi, such as the Elagin (Yelagin) Palace (1818–26; X, FIG. 535), Palace Square, with the General Headquarters (1819–29); Decembrists' Square, with the Old Senate and Holy Synod (1829–34); the New Mikhail (Michael) Palace (X, PL. 274, FIG. 539), now the Russian Museum; and the Alexandrinsky Theater (1828–32), now the Pushkin Theater, with two squares and a connecting street that form a unified composition. A. R. de Montferrand designed the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Leningrad, plan of the center. Inset: Plan of St. Petersburg in 1750. (1) Nevski Prospect; (2) Sredny Prospect; (3) Voznesenskaya Street; (4) Bolshaya Perspektivnaya Street. Principal monuments: (*a*) Fortress and Cathedral of SS. Peter and Paul; (*b*) Petrovski Park; (*c*) Kirov Park and Elagin Palace; (*d*) Strelka Square on Vasilevski Island, with the Stock Exchange (now Naval Mus.), Kunstkammer (now the Mus. of Anthr. and Ethn.), U.S.S.R. Academy of Sciences, building of the Twelve Colleges (now Leningrad University), Menshikov Palace, U.S.S.R. Academy of Fine Arts; (*e*) Admiralty; (*f*) Stroganov Palace; (*g*) Cathedral of the Virgin of Kazan (now a museum); (*h*) Cathedral of St. Isaac; (*i*) Cathedral of St. Nicholas; (*j*) Plekhanov School of Mines; (*k*) The Hermitage and Winter Palace; (*l*) Marble Palace (now Lenin Mus.) and Parade Ground; (*m*) Palace Square; (*n*) Decembrists' Square; (*o*) New Mikhail (Michael) Palace (now Russian Mus.); (*p*) Pushkin (formerly Alexandrinsky) Theater; (*q*) Anichkov Place; (*r*) Summer Palace of Peter the Great (now a museum); (*s*) Alexander Nevski Lavra and Trinity Cathedral; (*t*) Tauride Palace; (*u*) Smolny Convent and Institute; (*v*) Leningrad Historical Museum.

grandiose Cathedral of St. Isaac (1818–58), which rises to a height of over 325 ft., as well as the Alexander Column (1830–34) on Palace Square. The constructions of this period were embellished with an abundance of monumental and decorative sculpture.

Eclectic architecture of the mid-19th century is represented by the Mariinski and Nikolaevski palaces (1839–44 and 1853–61, respectively), by A. I. Stakenshneider, and The Hermitage (1839–52), by Leo von Klenze and others. In the late 19th century and the beginning of the 20th, the Art Nouveau style appeared in the works of F. I. Lidval and N. V. Vasilev, while other architects, such as I. A. Fomin and V. A. Shchuko, returned to neoclassic forms.

During the Soviet period extensive town-planning projects have been realized. In 1919, under the direction of Fomin, improvement of the city's layout was begun. In the years 1935–40 a new town plan was devised by L. A. Ilin, A. I. Naumov, E. I. Katonin, N. V. Baranov, V. A. Vitman, and others. Large housing developments and public buildings were constructed. During the postwar years hundreds of damaged buildings were restored and many new housing districts, public parks, and public buildings (hotels, theaters, a stadium, a television center, etc.) were built. In 1955 the first branch of the subway was opened.

Museums: The Hermitage, founded in 1764 to house the private collection of Catherine the Great, opened to the public in 1852, and enlarged and reorganized during the Soviet period, with the largest collection of world art in the U.S.S.R.; Russian Museum (1898), with an extensive collection of Russian art; Museum of City Sculpture (1939) in the Alexander Nevski Lavra, containing a collection of local monumental, decorative, and memorial sculpture; Leningrad Historical Museum (1918); Ethnographic Museum of the Peoples of the U.S.S.R. (1901); Peter the Great Museum of Anthropology and Ethnography (1878); Research Museum of the U.S.S.R. Academy of Fine Arts (18th cent.).

Art schools and institutes: Repin Institute of Painting, Sculpture, and Architecture; Mukhina School of Art and Industry.

BIBLIOG. D. E. Arkin, Monumental'naya skul'ptura Leningrada (Monumental Sculpture of Leningrad), Moscow, 1948; N. V. Baranov, Arkhitektura i stroitel'stvo Leningrada (Architecture and Building of Leningrad), Leningrad, 1948; N. F. Khomutetski, Leningrad: Ocherk arkhitektury (Leningrad: Essay on Architecture), Leningrad, 1953; V. I. Pilyavski, Arkhitektura Leningrada (Leningrad's Architecture), Leningrad, Moscow, 1953; A. D. Grach, Arkheologicheskie raskopki v Leningrade (Archaeological Excavations in Leningrad), Moscow, 1957; V. A. Kamenski and others, eds., Arkhitektura Leningrada: Ploshchadi, naberezhnye, prospekty, sady i parki (Leningrad's Architecture: Squares, Embankments, Prospects, Gardens and Parks), Leningrad, 1957; Leningrad: Entsiklopedicheski spravochnik (Leningrad: Encyclopedic Guide), Moscow, Leningrad, 1957; S. P. Luppov, Istoriya stroitel'stva Peterburga v pervoi chetverti XVIII veka (History of the Building of St. Petersburg in the First Quarter of the 18th Century), Moscow, Leningrad, 1957; V. Shvarts, Leningrad: Khudozhestvennye pamyatniki: Ocherk (Leningrad: Art Monuments: Essay), Moscow, Leningrad, 1957 (2d ed., 1961); N. F. Khomutetski, Peterburg-Leningrad, Leningrad, 1958; Pamyatniki arkhitektury Leningrada (Monuments of Leningrad's Architecture), Leningrad, 1958; Leningrad: Planirovka i zastroika

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1945–57 (Leningrad: Planning and Building, 1945–57), Leningrad, Moscow, 1960; E. N. Petrova, Monumental'naya i dekorativnaya skul'ptura Leningrada (Monumental and Decorative Sculpture of Leningrad), Leningrad, 1961; I. A. Bartenev, Zodchie i stroiteli Leningrada (Leningrad's Architects and Builders), Leningrad, 1963.

Murom. Situated on the Oka River, Murom is first mentioned in chronicles of 862. The tent-roofed Church of SS. Cosmos and Damian (1541 or 1565) is similar in design to the central section of the Church of St. Basil the Blessed in Moscow. The picturesque, lavishly decorated complex of the Trinity Monastery includes the five-domed Trinity Cathedral (1642) and the Church of the Virgin of Kazan (1648), to which its bell tower is joined by a covered passage. The Monastery of the Annunciation contains a five-domed church of the same name (rebuilt 1664), with a tent-roofed bell tower, and the Church of St. Stephen (1716, rebuilt 1836). The Church of the Resurrection (1658) has five domes, a covered gallery, and a tent-roofed porch. The Church of St. Nicholas (Nikola Naberezhni) was built in the years 1700–17. There are stone houses of the 19th century in the neoclassic style. During the Soviet period Murom has become an industrial center. The museum is dedicated to the artist I. S. Kulikov.

Bibliog. A. L. Mongait, Murom, Moscow, 1947.

Novgorod. This very ancient Russian city, situated on the Volkhov River, has been known since 859; in the 10th and 11th centuries it became the second largest Russian city after Kiev. From 1136 to 1478 it was the capital of the Novgorod republic. From the mid-12th century Novgorod was a large city divided by the Volkhov into two parts, with the kremlin (fortified by stone walls in 1044 and 1116; rebuilt 1331–33 and 1484–90) on the left bank, or Sophia side, and with the market and Yaroslav Palace on the right bank, or commercial side (Torgovaya Storona). The Cathedral of St. Sophia (1045–50) — built on a cruciform plan, with nave and four side aisles, three apses, five domes, and enclosed galleries on three sides — is severe and restrained in appearance. The interior contains fragments of frescoes (11th cent., 1108, and 1144), and the bronze doors (1152–54) on the west façade are from Magdeburg. Churches dating from early in the 12th century are the Cathedral of St. Nicholas Dvorishchenski (1113; frescoes, 1120–30); the Cathedral of the Nativity of the Virgin (1117; frescoes, 1125) in the Anthony Monastery; and the Cathedral of St. George (1119; frescoes, first half of the 12th cent.), built by Master Peter, in the Yuriev (George) Monastery. The Church of the Annunciation at Arkazha (1179; frescoes, 1189), SS. Peter and Paul on Sinichy Hill (1185–92), the Church of the Saviour at Nereditsa, near Novgorod (1198; frescoes, 1199; destroyed 1941–43 and since reconstructed) are all relatively small cubical structures with four piers, three apses, a roof laid directly on the vaults, and one dome. Surviving churches of the 13th–15th century are St. Nicholas on the Lipna (frescoes, ca. 1292–94; partly destroyed in 1941), St. Theodore Stratelates (1360–61; XIII, PL. 58; frescoes, ca. 1370–80), Our Saviour, on Ilin Street (1374; frescoes, 1378, by Theophanes the Greek), the Nativity of Christ in the Cemetery (na Kladbishche; 1381–82; frescoes, end of the 14th cent.), SS. Peter and Paul in Kozhevniki (1406), and St. Simon in the Zverin Monastery (1468). All these churches have one apse, outer walls divided into three sections, and four- and eight-sloped roofs, and their exterior walls are either plain or adorned with niches, patterned masonry, and carved crosses. The Euphymius Hall (1433) is a large, single-piered hall with ribbed vaults, above which there rises a lookout tower (1443). Of later date are the Church of the Holy Women Bringing Myrrh (Zhen-Mironosits, 1445, rebuilt 1510), the Church of St. Procopius (1529), and the Cathedral of the Virgin of the Sign (Znamenski Sobor, 1682) — all in the Muscovite style. From the 18th and 19th centuries there are stone houses with characteristic façades, the building of the main guard, and the Millennium Memorial of Russia (1862, by M. O. Mikeshin).

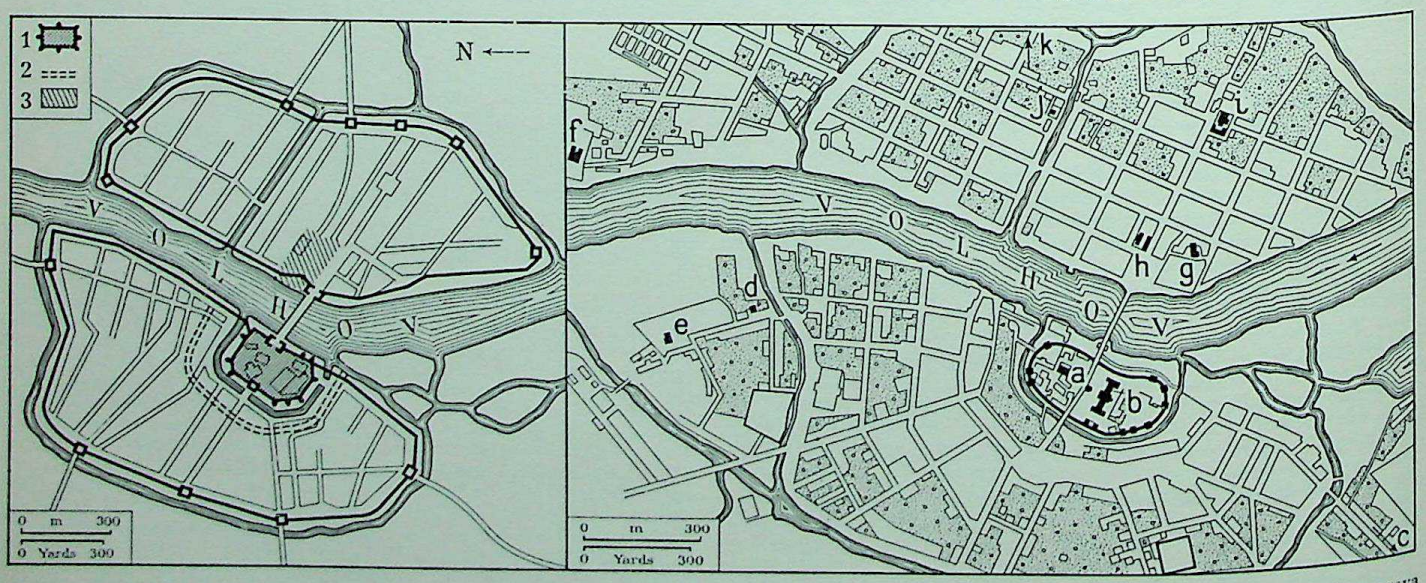
Badly destroyed during World War II, Novgorod was restored in the postwar years. The Museum of History and Art, founded in 1957, has a fine collection of 12th–16th-century icons of the Novgorod school.

Bibliog. V. N. Lazarev, Iskusstvo Novgoroda (Art of Novgorod), Moscow, Leningrad, 1947; M. K. Karger, Novgorod Veliki, Leningrad, 1961; M. H. Tikhomirova, ed., Novgorod, Moscow, 1964.

Pavlovsk. Founded in 1777–78 as the country estate of Paul I, son of Catherine II, the town is situated some 16 miles from Leningrad; from 1796 it was the summer residence of the tsars. Contructions in the neoclassic style include the Great Palace, begun (1782–86) by C. Cameron and completed (1797–99) by V. Brenna, with interiors decorated by various architects (G. Quarenghi, K. I. Rossi, A. N. Voronikhin), sculptors (I. P. Martos, M. I. Kozlovski, and others), and painters (P. Gonzaga, J. B. Scotti, and others); the park pavilions known as the Temple of Friendship (1780–82), the Apollo Colonnade (1780–83), and the Pavilion of the Three Graces (1800–01) — all by C. Cameron; the Mausoleum (1808), by Thomas de Thomon; and the Pil Tower (1795), by V. Brenna. The naturally landscaped gardens (1777–1828) cover about 1,500 acres. During the Soviet period the Great Palace was converted into a museum. The complex, which was badly damaged in the war years 1941–44, has been restored.

Bibliog. N. V. Veis, N. I. Gromova, and A. I. Zelenova, Pavlosk: Al'bom (Pavlovsk: Album), Moscow, 1952; A. I. Zelenova, Pavlovski park (The Park of Pavlovsk), Leningrad, 1958; V. Shvarts, Prigorody Leningrada (Suburbs of Leningrad), Leningrad, Moscow, 1961.

Pazyryk. At this site in a valley on the right bank of the Great Ulagan River in the Altai Mountains were found five burial mounds, or kurgans (5th-3d cent. B.C.), containing tombs of notables of a nomadic, pastoral tribe that was culturally close to the Scythians of the Black Sea coastal area. These kurgans were excavated in 1929 and in the years 1947–49. The permanently frozen ground under the cairns conserved lavishly adorned saddles, an ancient carpet with a velvety pile, felt and leather rugs (X, PL. 136), clothing and textiles,



Novgorod. *Left*: Plan of the walled city in the 15th century. *Key*: (1) The kremlin with the walls reconstructed in 1484–90; (2) the moat; (3) Torgovaya Storona (commercial side). *Right*: Plan of the present city. Principal monuments: (*a*) Cathedral of St. Sophia and the Millennium Memorial of Russia; (*b*) Museum of History and Art; (*c*) to the Church of SS. Peter and Paul on Sinichy Hill; (*d*) Church of SS. Peter and Paul in Kozhevniki; (*e*) Church of St. Simon in the Zverin Monastery; (*f*) Anthony Monastery; (*g*) Cathedral of St. Nicholas Dvorishchenski; (*h*) churches of St. George and St. Procopius; (*i*) Church of Our Saviour on Ilin Street; (*j*) Church of St. Theodore Stratelates; (*k*) to the Church of the Nativity of Christ in the Cemetery (na Kladbishche).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

vessels and other utensils, bronze censers, and musical instruments (see also GOLD- AND SILVERWORK; METALWORK; SIBERIAN CULTURES; TAPESTRY AND CARPETS; TEXTILES). Many of these items bear remarkable representations in the Scytho-Siberian animal style (II, FIG. 31; see GRECO-BOSPORAN AND SCYTHIAN ART). The finds include numerous objects of Central Asian, Iranian, and Chinese provenance.

BIBLIOG. S. I. Rudenko, Kul'tura naseleniya gornogo Altaya v skifskoe vremya (Civilization of the Peoples of the Altai in Scythian Times), Moscow, Leningrad, 1953; K. Jettmar, Zum "Spielteppich" aus dem V. Pazyryk-Kurgan, CAJ, VIII, 1963, pp. 47–53; S. I. Rudenko, EAA, s.v. (See also bibliog. of ASIATIC PROTOHISTORY.)

Pereslavl-Zalesski (Pereyaslavl). This town on the shores of Lake Pleshcheyev was founded in 1152; from 1174 to 1302 it was the center of the Pereyaslavl principality. The white stone Cathedral of the Transfiguration of Our Lord (1152) is a four-piered, single-domed, three-apsed church with sparse adornment. The Church of the Metropolitan Peter (1585) has a tent roof and is cruciform in plan. The walled and towered Nikitski Monastery (12th cent.) has a Cathedral and a refectory containing the Church of the Annunciation (all, 1561–64), as well as a bell tower (1668). The Danilov-Trinity Monastery includes the Trinity Cathedral (ca. 1530), built by Grigori Borisov, with frescoes (ca. 1660) by Guri Nikitin, Sila Savin, and others); there is also a tent-roofed bell tower and a refectory (end of the 17th cent.). The Goritski Monastery has lavishly decorated entrance gates (17th cent.) and buildings of the 17th and 18th centuries, which now house the ethnographical museum. During the Soviet period, both domestic and industrial construction has been carried out.

BIBLIOG. M. N. Tikhomirov, Drevnerusskie goroda (Old Russian Cities), Moscow, 1946; N. N. Voronin, Pereslavl'-Zalesski, Moscow, 1948; Arkhitekturnoe nasledstvo (Architectural Patrimony), II, Moscow, 1952, pp. 43–66; K. I. Ivanov, Pereslavl'-Zalesski, Yaroslavl, 1959; A. Kokorin and Yu. Khalaminski, Po starym russkim gorodam (On Old Russian Cities), Moscow, 1962.

Petrodvorets (until 1944, Peterhof). Situated about 18 miles from Leningrad on the shores of the Gulf of Finland, this town is famous for its palaces and gardens of the 18th and 19th centuries. In the center of the complex is the Great Palace (1714–28), which was rebuilt in the baroque style (1747–52) by B. F. Rastrelli. The Lower Garden (ca. 256 acres) is laid out in the form of two intersecting tridents and contains many fountains — among them, the Great Cascade with numerous gilded statues, including one that depicts Samson tearing open the jaws of a lion (1800–02), by M. I. Kozlovski (restored in 1947 by V. L. Simonov). The pavilion of Peter the Great, Monplaisir, was built in the years 1714–25 by J. Braunstein, A. J. B. Le Blond, and N. Michetti. The park pavilions known as the Hermitage (1721–25) and Marly (1720–24) were also built by the architect Braunstein. The colonnaded pavilions (1803) are by A. N. Voronikhin. The Upper Garden has a regular system of lanes. There are also naturally landscaped gardens (end of the 18th–19th cent.), such as the English Garden and the Alexander Garden. The English Palace (X, FIG. 535) was designed by Giacomo Quarenghi in 1781–91). During the Soviet period, museums were established in the palaces and pavilions. The complex, which was badly damaged in the war years 1941–43, has been restored.

BIBLIOG. V. I. Pilyavski, Petrodvorets (b. Peterhof), Moscow, 1949; N. N. Fedorova, Petrodvorets, Moscow, 1956; N. I. Arkhipov and A. G. Raskin, Petrodvorets, Leningrad, Moscow, 1961; V. Shvarts, Prigorody Leningrad (Suburbs of Leningrad), Leningrad, Moscow, 1961.

Phanagoreia (Rus., Fanagoriya; Gr., Φαναγόρεια). This ancient Greek town is located on the shores of the Taman Bay of the Black Sea (see GRECO-BOSPORAN ART). Founded in the 6th century B.C., it became part of the Bosporan kingdom in the 5th century B.C. and was destroyed by the Huns in the 4th century B.C. Excavations have brought to light remains of houses (6th cent. B.C.), monumental public buildings (5th–3d cent.) such as an Ionic temple, gymnasiums, defensive walls (3d–2d cent.), and large tombs (4th–3d cent.) with corbeled roofs. On the walls of the buildings and tombs there are fragments of wall paintings. The finds include pottery and bronze and silver adornments.

BIBLIOG. A. P. Smirnov, ed., Fanagoriya (MIA, LVII), Moscow, 1956.

Pskov. One of the oldest Russian cities, Pskov has been known since 903; from 1348 to 1510 it was the center of the Pskov republic. The kremlin (known as the Krom) — the oldest part of the city, situated at the confluence of the Pskov and Velikaya rivers — had stone fortifications as early as the 13th century. As the city grew, new belts of defensive walls, built of the local stone, formed the Dormontov Town, the Middle Town (1309–75), and the Opolny Town (1465). In the 16th century the building of the defensive walls (ca. 6 mi. long) with monumental towers (e.g., the Gremyachaya Tower, 1525) was completed. Among the many noteworthy buildings are the Cathedral of the Transfiguration of Our Lord (Spaso-Preobrazhenski) in the Mirozhski Monastery (before 1156; frescoes, mid-12th cent.), a cruciform structure, with low corner additions and a dome; the Cathedral of the Ivanovski Monastery (before 1243), a three-aisled church with its roof laid directly on the vaults and with six piers, three domes, and three apses; the Cathedral of the Snetogorski Monastery (1311; frescoes, 1313); the Trinity Cathedral in the kremlin (1365–67), by Master Kiril, which was later rebuilt (1682–99). Churches of the 14th–16th century are St. Basil "s Gorki" (1413), SS. Cosmos and Damian "s Primostya" (1462), St. George "s Vzvoza" (1494), the Dormition "s Paromenya" (1521), the Resurrection "so Stadishcha" (ca. 1530), St. Nicholas (15th cent.), and the Epiphany (early 16th cent.) — all of which are small single-domed churches with three apses, low additions on three sides, bell towers (with two, three, and five apertures), and simple adornment on the upper parts of the walls, apses, and drums. Stone houses of the 17th century are the three-story Pogankin mansion, and the Lapin, Trubinski, and Sutotski houses; their façades have small windows without surrounds, and only the stone porches are adorned with carving. During the Soviet period the city has been enlarged through the construction of new houses and public buildings. There is an ethnographical museum.

BIBLIOG. V. Lavrov and P. Maksimov, Pskov, Moscow, 1950; Yu. P. Spegal'ski, Pskov, Leningrad, 1963; Yu. P. Spegal'ski, Pskovskie kamennye zhilye zdaniya XVII v. (17th-century Pskov Stone Dwellings), Moscow, Leningrad, 1963.

Pushkin (until 1917, Tsarskoe Selo; until 1937, Detskoe Selo). The town, about 16 mi. from Leningrad, has a remarkable 18th- and 19th-century architectural and garden complex. The Great Palace of Catherine II, in the baroque style, was built in the first half of the 18th century by J. Braunstein, A. V. Kvasov, and S. I. Chevakinski and was subsequently rebuilt (1752–57) by B. F. Rastrelli; the façade is about a thousand feet long. The splendidly decorated rooms of state, arranged enfilade, were partly rebuilt by C. Cameron, V. P. Stasov, and other architects. The Agate Pavilion, the Hanging Garden, the Cameron Gallery, and the Pantheon (all, 1780–93) were designed by Cameron. The Alexander Palace (1792–96), by G. Quarenghi, is neoclassic in style. The Catherine Gardens include the Old Garden (1720–21) and the English Garden (second half of the 18th cent.). In 1818 the Alexander Gardens, including the Menagerie (1718), were transformed by A. A. Menelas into a naturally landscaped park; the New Gardens (1745) were laid out by A. V. Kvasov and S. I. Chevakinski. The various gardens contain numerous ornamental constructions, sculpture, and pavilions: the Hermitage (1743–54), by A. V. Kvasov, S. I. Chevakinski, and B. F. Rastrelli; the Grotto (1755–63), also by Rastrelli; the Concert Hall (1782–86), by Quarenghi; the Chinese Village (ca. 1774–96), begun by V. I. Neyelov and Cameron and completed (1817–22) by Stasov; the Admiralty (1773–77), by Neyelov; the Chesmensk Column (1771–78) and the Orlov Gates (1773–76), both by A. Rinaldi; and the statue of the Milkmaid (1810), by P. P. Sokolov. The Lyceum, which Pushkin attended, was build by Neyelov (1788–92) and rebuilt in 1811 by Stasov; in the garden there is a monument to Pushkin (1899–1900), by R. R. Bakh. In the town proper are the Great Orangery (1820–23), the Stables (1823), and the Riding School (Manezh, 1819–21) — all by Stasov. During the Soviet period the palaces have been converted into museums. The complex, partially destroyed in the years 1941–44, has been restored.

BIBLIOG. S. S. Bronshtein, Arkhitektura goroda Pushkina (Architecture of Pushkin), Moscow, 1940; V. V. Lemus and E. L. Turova, eds., Gorod Pushkin: Al'bom (City of Pushkin: Album), Moscow, 1954; S. S. Bronshtein, Gorod Pushkin, Leningrad, Moscow, 1958; V. Shvarts, Prigorody Leningrada (Suburbs of Leningrad), Leningrad, Moscow, 1961.

Rostov Veliki (Rostov-Yaroslavski). Situated on the shores of Lake Nero, this old Russian town was founded in very ancient times and first mentioned in chronicles of 863. From the 12th century it was the major town of the Rostov-Suzdal principality, and from 1207 to 1474 it was the center of the Rostov principality. In the 16th and 17th centuries Rostov flourished because of its favorable geographical position. The major artistic monuments are the Cathedral of the Dormition (ca. 1589), which is five-domed and similar in plan to the Dormition cathedrals in Vladimir and Moscow; the Cathedral of the Abraham Monastery (1553), a four-piered, five-domed edifice surrounded with galleries and chapels that marks the beginning of the Yaroslavl school of ecclesiastical architecture; and the Church of the Ascension (1566), by Andrei Maly, a small, pierless edifice with a single dome, which resembles earlier churches in the suburbs of Pskov and Novgorod. The seat of the metropolitan, known as the Kremlin (1670–83), has walls and towers and comprises the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

house of the metropolitan (the lower floor, 16th cent.; twice rebuilt, end of the 18th and mid-19th cent.), now housing the ethnographic museum; the churches above the gateways of the Resurrection (1670), St. John the Theologian (1683), and Our Saviour "na Senyakh" (1675); a single-piered refectory, known as the White Mansion (1672), with an area of about 984 sq. ft.; the Church of St. Gregory the Theologian (1680); and the Red Mansion (ca. 1672–80). All of these buildings are situated around a central square and are interconnected by passages along the walls; the remarkable frescoes in the churches were painted in the years 1770–80 by Yaroslavl and Kostroma artists. The walled and towered complex of the SS. Boris and Gleb Monastery (16th–17th cent.), about 11 mi. from Rostov, includes the Cathedral (1522–24), the Church of the Annunciation and a refectory (1524) by Grigori Borisov, and the Church of St. Sergius (1545), with decoration added in 1680. The Cathedral of St. Dmitri in the Spaso-Yakovlevski Monastery (1802–04), by G. E. Dikushin and A. F. Mironov, is neoclassic in style. During the Soviet period major restoration work has been carried out.

Bibliog. B. von Eding, Rostov Veliki, Uglich, Moscow, 1913; S. V. Bessonov, Rostov Veliki, Moscow, 1945; V. S. Banige and others, Rostov Yaroslavski: Putevoditel' po arkhitekturnym pamyatnikam (Rostov-Yaroslavski: Guide to Architectural Monuments), Yaroslavl, 1957; A. Kokorin and Yu. Khalaminski, Po starym russkim gorodam (On Old Russian Cities), Moscow, 1962.

Ryazan (until 1776, Pereyaslavl-Ryazanski). Known since 1095, Ryazan was the capital of the Ryazan principality from the beginning of the 14th century until 1521; in the 16th century it formed part of a chain of military outposts (*zasek*) that defended Moscow on the south. The kremlin, situated at the confluence of the Trubezh and Lybed rivers, includes the Cathedral of the Nativity (15th cent.?; rebuilt at the beginning of the 19th cent.); the Archangel Cathedral (end of the 16th–beginning of the 17th cent.), a triapsidal, single-domed structure of squat proportions; the Cathedral of the Dormition (1693–99), by Ya. G. Bukhvostov, a five-domed edifice (ca. 230 ft. high) with a gallery at the base, three tiers of huge windows, portals with lavish surrounds carved in white stone, and a tiered, steepled bell tower (1789–1840) in the neoclassic style; the bishop's residence, known as the Oleg Palace (1653–92), connected by a stone passage with the Cathedral of the Dormition; the Church of the Holy Spirit (1642), with two tent roofs; and the Monastery of Our Saviour, with the churches of the Epiphany (Bogoyavlenie, 1647) and the Transfiguration (1702). Located in the town are the Church of Our Saviour (1695) and various buildings in neoclassic style, such as the administrative buildings (1786), the commercial arcades (end of the 18th–beginning of the 19th cent.), the former Noblemen's Assembly (end of the 18th cent.), the upper school (1808), the hospital (1816), the seminary (1812–16), and houses. During the Soviet period Ryazan has become a large industrial and cultural center. The district art museum is located here.

About 31 miles from Ryazan are the ruins of Staraya Ryazan (Old Ryazan; 10th–16th cent.), capital of the Ryazan principality in the 12th and 13th centuries. Excavations have revealed three stone churches, earthen ramparts, houses, pieces of jewelry, and other relics.

Bibliog. M. A. Il'in, Ryazan', Moscow, 1954; A. L. Mongair, Staraya Ryazan' (Old Ryazan), Moscow, 1955.

Smolensk. Situated on the upper Dnieper River, Smolensk is first mentioned in chronicles of 865. Slavic barrows (9th–11th cent.) have been found in the nearby village of Ghëzdovo. From the 12th century the town was the center of the Smolensk principality. The early churches were four-piered: SS. Peter and Paul (1146; addition of 1752–57), St. John the Theologian (1173–76), and the Archangel Michael (Svirskaya, 1191–94). The town walls with towers (1596–1600) were built by F. S. Kon. Buildings in the 17th-century Muscovite style are the Cathedral of the Dormition, begun by A. Korolkov (1677–79) and completed by A. I. Shedel (1732–40); and the two-story, pierless church of the Ascension Monastery (1694–98), by G. Vakhromeev. The Cathedral of the Transfiguration in the Abraham Monastery (1775) is baroque. After the war of 1812, the city began to expand according to a plan adopted in 1818. The Noblemen's Assembly (1825), now the Medical Institute, was built by A. I. Melnikov in the neoclassic style. The expansion and reconstruction that has taken place during the Soviet period has provided for careful preservation of the historical center.

Bibliog. I. D. Belogortsev and I. D. Sofinski, Smolensk, Moscow, 1952; D. A. Ardusin, Smolensk, Smolensk, 1957.

Suzdal. Founded in the 10th–11th century on the banks of the Kamenka River in the Oka River basin, Suzdal was first mentioned in chronicles of 1024; from the 13th century to 1350, it was the center of the Suzdal principality. It contains many fine examples of Russian architecture. In the kremlin stands the Cathedral of the Nativity (1222–25, rebuilt in 1528; frescoes, 1233 and 17th cent.), a six-piered church with three porches, a carved portal, and two copper doors decorated with gold tracery (1220–30). The kremlin also contains the bishop's apartments (16th–17th cent.) and a bell tower (1635). In the town and its environs there are various picturesque monastic complexes: the Spaso-Efimevski Monastery, which has a wall with 12 towers (ca. 1660), a Cathedral (mid-16th cent.; frescoes, 1689), the chambers of the archimandrite with an attached refectory (1525), the Church of the Dormition (mid-16th cent.), and a bell tower (16th–17th cent.); the Rizpolozhenski (Ordination) Monastery, with a three-domed Cathedral (1530–1560s) and a gate with two tent roofs (1699) by the architects Mamin, Gryaznov, and Shmakov); and the Pokrovski (Intercession) Monastery, with numerous buildings of the 16th century, including a three-domed Cathedral (1518), a church, and a refectory as well as an 18th-century wall. Among the stone parish churches of the 17th and 18th centuries are the Dormition (1650), St. Athanasius (1720), and St. Nicholas (1720), which have bell towers with bulbous tent roofs. The Church of SS. Boris and Gleb (1152, rebuilt in the 18th cent.; 12th-cent. frescoes) in the nearby village of Kideksha is the earliest white stone building in northeastern Russia. During the Soviet period much restoration work has been done. The Museum of History and Art was founded in 1957.

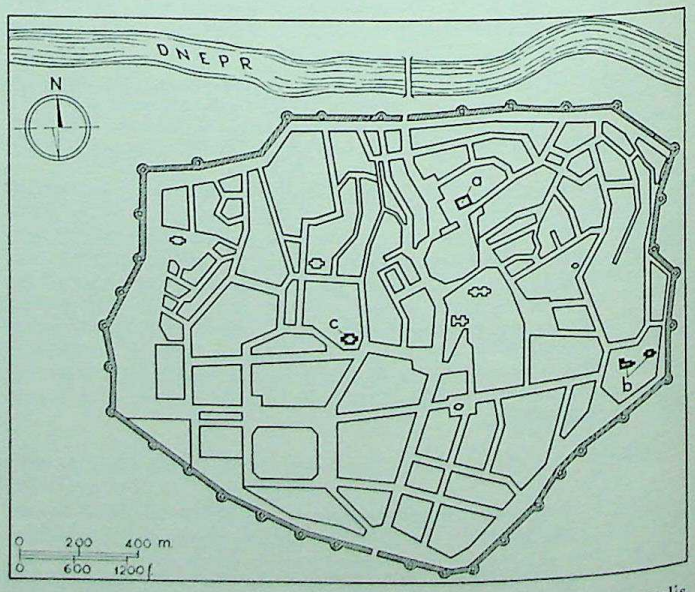
Bibliog. A. Varganov, Suzdal', Moscow, 1944; N. N. Voronin, Pamyatniki Vladimiro-Sudzal'skogo zodchestva XI–XIII vekov (Monuments of Vladimir-Sudzal Architecture of the 11th–13th Century), Moscow, 1945; N. N. Voronin, Vladimir, Bogolyubovo, Suzdal', Yur'ev-Pol'ski, Moscow, 1958; A. Kokorin and Yu. Khalaminski, Po starym russkim gorodam (On Old Russian Cities), Moscow, 1962.

Sverdlovsk (until 1924, Ekaterinburg). This large industrial and cultural center in the Urals, situated on the Iset River in the Ob River basin, was founded in 1721. The Rastorguev-Kharitonov villa, the former mining chancellery, the hospital of the Upper Iset Factory, the mansion of the gold-mining industrialist Ryazanov, and the Alexander Nevski Cathedral — all in neoclassic style — were built between 1817 and 1842 by the architect M. P. Malakhov. During the Soviet period many new buildings have been constructed.

Bibliog. P. Volodin, Sverdlovsk, Moscow, 1948; L. P. Neverov, Sverdlovsk: Spravochnik (Sverdlovsk: Guide), Sverdlovsk, 1956; P. G. Panov, Sverdlovsk v nastoyashchem i budushchem (Sverdlovsk: Present and Future), Sverdlovsk, 1958; N. S. Alferov, Zodchnie starogo Urala (Architects of the Old Urals), Sverdlovsk, 1960.

Tomsk. Founded in 1604, this town in Siberia is situated on the Tom River. Edifices dating from the 18th and 19th centuries are the stone churches of the Annunciation (1776) and the Resurrection (1789–1807); the town hall (1802–12); the administrative buildings (1830–42); and the University (end of the 19th cent.; main building, 1885, by A. K. Bruni). In the Soviet period building has proceeded in accordance with the existing town plan; streets and squares have been renovated and new thoroughfares created.

Bibliog. A. I. Popov, Tomsk, Moscow, 1959.



Smolensk, plan of the old city within the 16th- and 17th-century walls. (*a*) Cathedral of the Dormition; (*b*) Abraham Monastery; (*c*) Ascension Monastery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Tula. Located on the Upa River (a tributary of the Oka), Tula is first mentioned in chronicles of 1146; since the 17th century it has been a center of the iron industry. It has a combined radial and ring layout, with the kremlin (1514–21) at the center. The most important architectural monuments are the churches of the Annunciation (1692), St. Nicholas Zaretski with a bell tower (1730–34), and the Ascension (1755–87); the houses of the Demidovs (ca. 1730) and the Liventsovs (ca. 1760), as well as others; and the Cathedral of the Dormition (1762–64; 18th-cent. frescoes). At the end of the 18th century and the beginning of the 19th, similar stone buildings lined the main streets. The Noblemen's Assembly, by V. F. Fedoseyev, dates from the years 1830–40. During the Soviet period construction has been carried out on the basis of a new town plan. The district art museum is located here.

BIBLIOG. A. A. Kiparisova, Tula, Moscow, 1948; M. I. Rostovtsev, Tula, Tula, 1958.

Ufa. Since 1922 the capital of the Bashkir A.S.S.R. (Bashkiria), Ufa is situated on the Belaya River (a tributary of the Kama) and is one of the largest industrial and cultural centers of the Ural region. It was founded in 1586. There still exist wooden houses with rich carved decoration and neoclassic buildings dating from the first third of the 19th century. During the Soviet period the town has been greatly enlarged. The Nesterov Art Museum of the Bashkir Republic is located in Ufa.

BIBLIOG. N. Lermontov and M. Sakhautdinova, Gorod Ufa (The City of Ufa), Moscow, 1948; Kh. Ya. Takhaev and I. I. Parkhomenko, Ufa: Stolitsa Bashkirskoi ASSR (Ufa: Capital of the Bashkir Autonomous Republic), Moscow, 1952.

Uglich. Situated on the banks of the Volga, on the site of a Slavic settlement (8th–9th cent.), Uglich is first mentioned in chronicles of 1148. The brick throne building of the prince's palace, known as the Palace of the Crown Prince Dmitri, has rich patterned brickwork on its pediments (second half of 15th cent.). The Church of the Dormition (the Divine Church, 1628) has three tent roofs. The Monastery of the Resurrection (1674–77) includes the five-domed Cathedral with chapels, a bell tower, and a single-pierced refectory with the Church of Hodegetria (Odigitria); the buildings, which are joined together by a covered passage, form a picturesque and somewhat austere ensemble. Dating from late in the 17th century are the Church of St. Dmitri (1683–92), the Church of the Nativity (1689–1700), and the Smolensk Church (1700) in the ornate style. There are also stone and wooden houses from the 18th century. In the town's environs stands the St. Nicholas Uleiminski Monastery (17th cent.).

BIBLIOG. B. von Eding, Rostov Veliki, Uglich, Moscow, 1913; E. V. Mikhailovski, Uglich, Moscow, 1948; A. Kokorin and Yu. Khalaminski, Po starym russkim gorodam (On Old Russian Cities), Moscow, 1962.

Ulyanovsk (until 1924, Simbirsk). Situated on the banks of the Volga and Sviyaga rivers, the town, founded in 1648, was the birthplace of Lenin, who was born V. I. Ulyanov. Among the neoclassic buildings are the Trinity Cathedral (1822–44) and the former Noblemen's Assembly (1848), both by M. P. Korinfski. The administrative center dates from 1804, and the Market Building, by A. I. Melnikov, was built in the years 1832–36. During the Soviet period, especially after World War II, large-scale reconstruction projects have been carried out.

BIBLIOG. E. I. Golenko, Ul'yanovsk, Moscow, 1956.

Veliki Ustyug. This northern town in the European part of the U.S.S.R., at the confluence of the Sukhona and Yug rivers, was founded in very ancient times and first mentioned in chronicles of 1212. The location of the town on the water route leading from Moscow to the seaport of Arkhangelsk and to Siberia accounted for its prosperity in the 17th and 18th centuries. At the end of the 18th century the town acquired a regular street plan. Architectural monuments of note are the monasteries of the Archangel Michael (1653) and Troitsko-Gledenski (1659), including cathedrals, bell towers, and refectory buildings; the Cathedral of the Dormition (1619–22), which was repeatedly rebuilt (last in 1780); and the churches of the Ascension (1648), similar to the ornate Moscow churches; the Transfiguration (1689–96) and St. Dmitri of Salonika (1700–08), both in the local building style; the Anointing (1714–23); the Transfiguration (1725–39); St. Nicholas (begun 1682); and St. Simeon Stylites (1765), in the baroque style. Stone constructions of the 18th and early 19th centuries include the baroque Shilov and Zakharov houses, the seminary (1725–28), and the commercial arcades (1819–23). In the Soviet period, housing, technical institutes, schools, and other buildings have been constructed.

BIBLIOG. P. A. Tel'tevski, Veliki Ustyug, Moscow, 1960.

Vladimir. One of the most ancient Russian towns, Vladimir is situated about 112 mi. east of Moscow. From the 12th to the beginning of the 14th century it was the capital of a great principality and surpassed Kiev as Russia's most important center. The major monuments of the Vladimir-Suzdal school of architecture are the white stone Cathedral of the Dormition (1158–61, enlarged 1185–89), which contains fragments of wall paintings of the 12th and 13th centuries and frescoes by Andrei Rublëv (XII, PL. 339) and Daniel (Daniil) Chorny (1408); remains of parts of the suburban residence (1158–65) of Prince Andrei Bogolyubski in the nearby village of Bogolyubovo; the fortified Golden Gate (1158–64); the Church of the Intercession of the Virgin (1165) on the Nerl River near Vladimir, which is a relatively small, single-domed, triapsidal church with relief decoration on the exterior; and the Church of St. Dmitri (1193–97; with wall paintings), the main church of the prince's court, which is similar in design to the Church of the Intercession and has exceptionally rich decorative carving in white stone on its façades. From the 17th–18th centuries remain the five-domed Church of Our Lady (1644–49), with a tent-roofed bell tower; St. Nicholas Mokry (1732–35), crowned with tiers of octagonal turrets; and St. Nikita the Martyr (1762–65), in the baroque style. Structures in the neoclassic style are the administrative building (1785), the commercial arcades (1787–90), the former Noblemen's Assembly (1826), and the upper school (1840). During the Soviet period there has been a great deal of industrial and domestic construction.

BIBLIOG. N. N. Voronin, Vladimir, Moscow, 1945; N. N. Voronin, Vladimir, Bogolyubovo, Suzdal, Yur'ev-Pol'ski, Moscow, 1958; V. I. Kazarinova, Arkhitektura Dmitrevskogo sobora vo Vladimire (Architecture of the Cathedral of St. Dmitri in Vladimir), Moscow, 1959; N. N. Voronin, Zodchestvo Severo-Vostochnoi Rusi: XII–XV vv. (Architecture of Northeast Rus.: 12th–15th Century), 2 vols., Moscow, 1961–62; A. Kokorin and Yu. Khalaminski, Po starym russkim gorodam (On Old Russian Cities), Moscow, 1962.

Vologda. Founded in 1147, the town is situated on the Vologda River (a tributary of the Sukhona). The five-domed, triapsidal Cathedral of St. Sophia (1568–70) contains frescoes (1686–88) by the Pereslavl painter Dmitri Plekhanov; its bell tower (1654–59) was altered by a superimposition made in 1869. The part of the kremlin within defensive walls (1671–75) includes the episcopal palace (1659), with two-story cells, the treasury chancellery, and the three-story baroque house of the bishop, the so-called "House of Joseph the Golden" (1764–69). The Cathedral of the Resurrection was erected in the years 1772–76. The most important churches are the five-domed Church of SS. Constantine and Helen (ca. 1690), with two tiers of decorative *kokoshnik* arches; the baroque Sretenski Church (1731–35); the Church of St. John Chrysostom (end of the 17th–beginning of the 18th cent.); the Church of the Intercession in Kozelena (1704–10); and the Church of St. Valaam Khutynski (before 1777). The Prilutski Monastery (16th–17th cent.) is located near Vologda. Examples of 18th- and 19th-century domestic architecture are the Petrov house (1704) and the house on the Red Army Embankment (1777), in the baroque style; the house of Admiral Barsh (1781), with lavish exterior adornment, in a transitional style between baroque and neoclassicism; and, in the neoclassic style, the Maslennikov house and the Skulyabinski Poorhouse (both ca. 1780), the governor's house (1792), and the Vitushechnikov house (1822–23). The district picture gallery is located here.

BIBLIOG. G. Lukomski, Vologda v eë starine (Vologda in the Past), St. Petersburg, 1914; M. V. Fekhner, Vologda, Moscow, 1958; N. S. Bobrov-Novgorodski, V serdtse Rusi Severnoi (In the Heart of Northern Rus), Vologda, 1959.

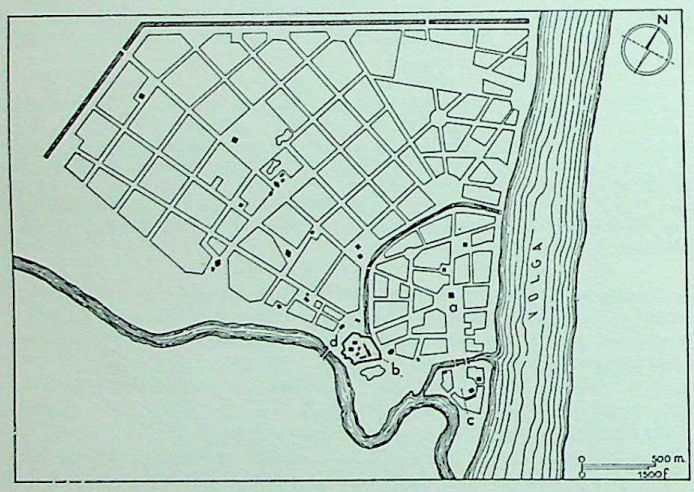
Voronezh. This city on the Voronezh River (a tributary of the Don) was founded in 1586 as a fortress for defense against the Crimean and Nogai Tatars. Among the 17th- and 18th-century architectural monuments destroyed during the German occupation of 1942 and 1943 were the Arsenal (1696); the churches of the Dormition (1694), St. Euphrasia (Eupraxia, 1738–61), and the Resurrection (1752–68); and the Mitrofanev Monastery (1784–87). The Church of St. Nicholas (1720–49) and the Potëmkin Palace (1760) have been restored. The postwar town plan (1950–52), drawn up by L. V. Rudnev, retains the "trident" principle of the 18th-century plan. After World War II large-scale construction projects were undertaken. The district museum of the figural arts is located here.

BIBLIOG. E. Kalinina, Istoriya goroda Voronezha (History of Voronezh), Voronezh, 1941; N. V. Troitski, Voronezh, Moscow, 1959.

Yaroslavl. Founded about 1024, this town on the Volga River was first mentioned in chronicles of 1071. From 1218 it was the capital of a principality. Yaroslavl experienced its greatest development in the 16th and 17th centuries. Noteworthy architectural monu-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ments are two stone towers of the fortress (16th cent.); the Monastery of the Transfiguration of the Saviour, with a three-domed Cathedral (1516; frescoes, 1564), the entrance known as the Holy Gates (1516; frescoes, 1564), and a single-piered refectory (first half of the 16th cent.); and churches of the 17th-century Yaroslavl school, primarily five-domed, four-piered edifices with enclosing galleries and porches, detached tent-roofed bell towers, and rich interior and exterior adornment (wall paintings, tiles, patterned brickwork, carving in wood): St. Nicholas Nadein (1621; frescoes, 1640); the picturesque Church of the Prophet Elias (1647–50; frescoes, 1681); St. John Chrysostom in Korovniki (1649–54; frescoes, 1732), a symmetrical church with two tent-roofed chapels; St. Nicholas Mokry (1672; frescoes, 1673); and St. John the Baptist in Tolchkovo (1671–87; frescoes, 1695), with 15 domes. Some 17th-century stone houses remain. Yaroslavl was the center of a local school of icon painting (12th–14th cent.) and of fresco painting (17th–18th cent.). The regular street plan adopted in 1778 has persisted to the present day. The neoclassic style is represented by the ensembles of the three central squares; the administrative building (1780–84); the commercial arcades (1813–18), by P. Ya. Pankov; and the Demidovski Lyceum (first quarter of 19th cent.), by A. I. Melnikov. During the Soviet period, a plan



Yaroslavl, partial plan of the city in the second half of the 18th century. Principal monuments: (*a*) Central Square with the Church of the Prophet Elias (Elijah); (*b*) Monastery of the Transfiguration of the Saviour; (*c*) Rubleny Gorod; (*d*) Church of the Epiphany.

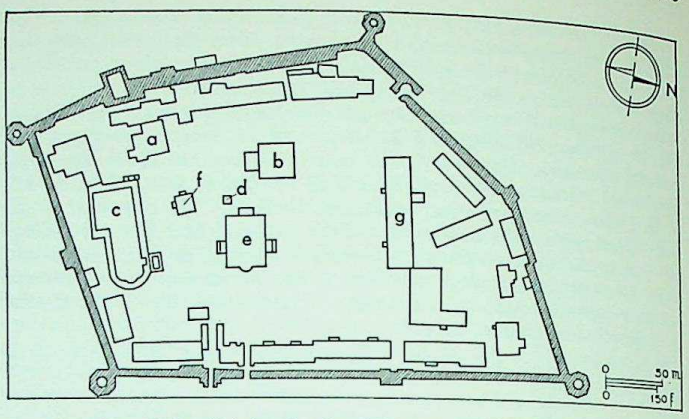
for rebuilding and enlarging Yaroslavl was drawn up. An ethnographic museum and the district art museum are located here.

BIBLIOG. A. M. Pavlinov, Drevnosti rostovskie y yaroslavskie (Antiquities of Rostov and Yaroslavl), Moscow, 1892; V. N. Ivanov, Yaroslavl', Moscow, 1946; A. I. Suslov and S. S. Churakov, Yaroslavl', Moscow, 1960.

Yuriev-Polski. Situated on the Koloksha River (a tributary of the Klyazma), the town was founded in 1152. There have survived the remains of ancient earthen ramparts. The Cathedral of St. George (1230–34) is a small, white stone church, with four piers and three porches; the exterior walls are completely covered with extremely fine carving. The Archangel Monastery, founded in the 13th century, consists mostly of 17th- and 18th-century buildings and has a tent-roofed bell tower. Yuriev-Polski has an ethnographic museum.

BIBLIOG. N. N. Ushakov, Sputnik po drevnemu Vladimiru i gorodam Vladimirskoi gubernii (Guide to Old Vladimir and the Cities of the Vladimir Province), Vladimir, 1913; N. N. Voronin, Vladimir, Bogolyubovo, Suzdal', Yur'ev-Pol'ski, Moscow, 1958.

Zagorsk (until 1930, Sergiev). The town, about 44 mi. north of Moscow, grew out of the settlement around the Trinity-Sergius Monastery, which was founded in the first half of the 14th century. The monastery is one of Russia's, largest architectural complexes of the 15th–18th century. Structures in the Muscovite style are the four-piered, triapsidal, single-domed Trinity Cathedral (1422–23), which contains icons by Andrei Rublëv (q.v.) and Daniel (Daniil) Chorny; the Church of the Holy Spirit (1476–77), built by Pskov architects; the five-domed Cathedral of the Dormition (1559–85), with frescoes (1684); and the brick walls and towers (1540–50; rebuilt in the 17th cent.). Monastery buildings in the 17th-century Naryshkin style are the tent-roofed Church of SS. Zosimus and Sabas, with hospital buildings (1635–37); the refectory and its church (1686–92), with rich exterior decoration; and the tsar's palace, comprising the Chertogi mansion, the church above the gates, and a chapel. The many-storied bell tower (1741–69), by D. V. Ukhtomski and others,



Zagorsk, plan of the Trinity-Sergius Monastery. Principal buildings: (*a*) Trinity Cathedral; (*b*) bell tower; (*c*) refectory; (*d*) chapel; (*e*) Cathedral of the Dormition; (*f*) Church of the Holy Spirit; (*g*) palace of the tsars.

is baroque. In the 19th and 20th centuries many of the monastery structures were rebuilt. From the 15th to the 16th century Zagorsk was a center of folk handicrafts: wood and bone carving, painting on wood, and toymaking. The museum in the monastery, established in 1920, houses a rich collection of Russian painting and minor arts of the 15th–18th century. There is also a museum of toys.

BIBLIOG. V. I. Baldin, Zagorsk, Moscow, 1958; I. V. Trofimov, Pamyatniki arkhitektury Troitse-Sergievoi Lavry (Architectural Monuments of the Trinity-Sergius Monastery), Moscow, 1961; A. Kokorin and Yu. Khalaminski, Po starym russkim gorodam (On Old Russian Cities), Moscow, 1962.

Zvenigorod. Located about 37 mi. from Moscow, the town is first mentioned in chronicles of 1328. In the 14th and 15th centuries it was a fortified town. There are remains of the earthen fortifications of the kremlin, and the white stone, single-domed Cathedral of the Dormition (1399) survives. The complex of the Savvino-Storozhevski Monastery includes the white stone Cathedral of the Nativity (ca. 1405; 15th-cent. frescoes of the school of Rublëv), which is similar in design to the Cathedral of the Dormition; the refectory 1652–54) with the Church of the Transfiguration (1693); the bell tower (mid-17th cent.); the palaces of the tsar (1652–54) and the tsaritsa (1650–52); the seat of the archimandrite (18th–19th cent.); and walls and towers (1650–54). During the Soviet period Zvenigorod, which occupies a picturesque site, has been transformed into a health resort with many rest homes and sanitariums.

BIBLIOG. N. Ya. Tikhomirov, Zvenigorod, Moscow, 1948; Istoriko-kul'turnye pamyatniki Zvenigorodskogo raiona: Kratki putevoditel (Historical-cultural Monuments of the Zvenigorod Region: Short Guide), Zvenigorod, 1957; S. N. Borovkova, Zvenigorod i okrestnosti (Zvenigorod and Environs), Moscow, 1962.

Prokopi TELTEVSKI, Pëtr VOLODIN, Elizaveta SILVERSVAN

BYELORUSSIA (White Russia; Byelorussian S.S.R.). *Historical and artistic periods.* Flint figurines, decorated pottery, and remains of pile dwellings have survived from the Neolithic period. In the second half of the 1st millennium B.C. Byelorussia was settled by Slavic tribes; from the 10th to the 13th century it formed part of Kievan Russia and some early Russian artistic centers (e.g., Polotsk, Vitebsk, Grodno) were founded there.

The Byelorussian nationality and culture were formed in the 14th–16th century, but from the beginning of the 14th century the territory of present Byelorussia was under the dominion of Lithuania; after the Union of Lublin (1569) it became part of Poland, remaining under its control until the end of the 18th century. In Byelorussian medieval art the artistic heritage of both Kievan Russia and western Europe was reflected. In the modern era Byelorussian artistic culture has had more affinity to that of Russia.

The medieval towns developed as trading centers or frontier fortresses. At the foot of the castle lay the trading and artisan districts, generally enclosed by wooden fortifications. Until the 16th century the layout of the towns was irregular. Monumental constructions of this period were primarily defensive. The large castles of the 13th–14th century (Kamenets, Novogrudok) had wooden walls and brick tower-dungeons. In the 14th century castles of stone and brick (Lida, Krevo) were built. Brick churches of the 15th and 16th centuries, while similar in plan to Russian churches, had a hall-like interior and often had fortified towers at the corners (Malo-Mozheikovo, Synkovichi). In miniatures and painting of the 14th–16th century the canons regulating icon painting were interpreted with

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

some freedom, and liberal use was made of ornamental motifs (miniatures of the Mstizhski and Orshanski Gospels, 14th cent.; the icon of *Paraskeva Pyatnitsa*, 16th cent., in the Byelorussian Art Mus., Minsk). Byelorussian sculpture of the 14th–17th century was influenced at first by the Romanesque and Gothic styles (crucifix, 14th cent., in the Byelorussian Art Mus.) and then by the Renaissance (carved gate from Grodno, late 16th cent., in the same museum). With the introduction of printing in the 16th century, engravings began to make their appearance.

Beginning in the late 16th century the local artistic traditions intermingled with baroque tendencies introduced by the Jesuits. Many Catholic monasteries were erected in the baroque style. On large estates private fortress-towns arose that had a regular layout (Bykhov, Nesvizh). In the 17th-century castles the means of defense were shifted to the surrounding ramparts and bastions. The manor house assumed the character of a palace (castle at Nesvizh). The Byelorussian baroque style reached its apex in the 18th century, at which time an indigenous type of church emerged with a richly decorated façade crowned by two tall towers (Carmelite church in Glubokoe, Cathedral of St. Sophia in Polotsk). Owing to the large-scale Jewish immigration at the beginning of the 17th century, a special type of synagogue came into use: a four-piered hall with a square plan, covered by nine vaults.

After the union of Byelorussia with Russia (1772–95) many towns were replanned on neoclassic lines. The principles of Russian neoclassicism spread also to buildings (Rumyantsev-Paskevich Palace in Gomel, 1785–93; Cathedral of St. Joseph in Mogilev, 1781–98, destroyed). In the 19th century Byelorussian realistic art came into being and developed in close contact with that of Russia. The leading Byelorussian artists (I. T. Khrutski, 1806–after 1855; A. G. Goravski, 1833–1900; N. Yu. Silivanovich, 1834–1919) received their artistic training at the St. Petersburg Academy of Fine Arts.

Local artistic life grew especially spirited at the beginning of the 20th century when the first studio-schools came into being (the one of Yu. M. Pen, 1854–1937, in Vitebsk, and of Ya.M. Kruger, 1869–1940, in Minsk), and the Minsk Society of Art Lovers was founded. In painting and graphic art of this period a note of social protest could often be found. Folk arts flourished, especially the weaving of textiles and wood carvings.

After the 1917 Revolution (and especially after World War II) the planned reconstruction of cities, towns, and villages was carried out. In the architecture of the 1920s and 1930s constructivist tendencies were successfully combined with those of a modernized classicism (I. G. Langbard, 1882–1951; G. L. Lavrov, b. 1896; A. P. Voinov, b. 1902; and V. N. Varaksin, b. 1901). Since the mid-1940s modern buildings have crowded out the old wooden ones.

Painting and sculpture have flourished in the Soviet period (painters V. V. Volkov, b. 1881, I. O. Akhremchik, b. 1903, E. A. Zaitsev, b. 1908, and V. K. Tsvirko, b. 1913; sculptor and graphic artist A. M. Brazer, 1892–1942; and sculptors A. V. Grube, b. 1894, Z. I. Azgur, b. 1908, and A. O. Bembel, b. 1905). In 1941–45 and the early postwar years war themes predominated. In recent years painters such as M. A. Savitski, b. 1922, and M. V. Dantsig, b. 1930, have produced works of a realistic nature.

BIBLIOG. I. I. Iodkovski, Tserkvi prisposoblennye k oborone v Litve i Litovskoi Rusi (Churches Adapted to Defense in Lithuania and Lithuanian Rus'), Drevnosti, VI, 1915, pp. 43–67; M. Shchakatsikhin, Gravyuri i knizhnyya azdoby ŭ vydan'nyakh Frantsishka Skaryny (Engravings and Decorations of Books in Frantsishek Skaryna's Editions), in Chatyrokhsotletsbtse belaruskaga druku: 1525–1925 (Four Centuries of Byelorussian Printing: 1525–1925), Minsk, 1926, pp. 180–227; M. Shchakatsikhin, Narysy z gistoryi belaruskaga mastatstva (Historical Compendium of Byelorussian Art), I, Minsk, 1928; M. Grinbiat et al., Ocherki po istorii izobrazitel'nogo iskusstva Belorussii (Essays on Byelorussian Fine Art), Moscow, Leningrad, 1940; Iskusstvo Sovetskoi Belorussii: Sbornik (Art of Soviet Byelorussia: Miscellany), Moscow, Leningrad, 1940; Izobrazitel'noe iskusstvo Belorusskoi SSR: Katalog vystavski (Fine Art of the Byelorussian SSR: Exhibition Catalog), Moscow, Leningrad, 1940; A. Davidovich, Belaruskiya gravery (Byelorussian Engraving), Belarus', 9, 1946; N. M. Nikolskoi, ed., Belaruskae narodnae mastastva, I: Tkatstva, Kaŭradzelle, Vyshyvanne, Vyazanne, Naboika (Byelorussian Folk Art, I: Textiles, Embroidery, Knitting, Printed Textiles), Minsk, 1951; Yu. A. Egorov, Gradostroitel'stvo Belorussii (City Planning in Byelorussia), Moscow, 1954; M. A. Il'in, Svyazi russkogo, ukrainskogo i belorusskogo iskusstva vo vtoroi polovine XVII v. (Connections Between Russian, Ukranian, and Byelorussian Art in the 2d Half of the 17th Cent.), Vestnik Moskovskogo universiteta, 7, 1954, pp. 75–84; M. S. Katser, Belorusskaya arkhitektura (Byelorussian Architecture), Minsk, 1956; Yu. A. Egorov and A. P. Voinov, ed., Arkhitektura i gradostroitel'stvo Sovetskoi Belorussii (Architecture and City Planning of Soviet Byelorussia), Minsk, 1957; P. N. Gerasimovich and P. P. Nikiforov, Izobrazitel'noe iskusstvo Belorusskoi SSR (Fine Art of the Byelorussian SSR), Moscow, 1957; M. and K. Piechotkowski, Bóżnice drewiane, Warsaw, 1957 (Eng. trans., R. Langer, Wooden Synagogues, Warsaw, 1959); M. S. Katser, ed., Narodnae i prykladnae mastatsva Savetskai Belarusi (Folk and Applied Art of Soviet Byelorussia), Minsk, 1958; L. A. Malchanava, Belaruskaya narodnaya arkhitekturnaya raz'ba (Folk Architectural Sculpture in Byelorussia), Minsk, 1958; M. S. Katser and V. M. Makarevich, Iskusstvo Belorussii 14–17 vekov (Byelorussian Art, 14th–17th Centuries), Vseobshchaya istoriya iskusstv, II, 1, Moscow, 1960, pp. 194–98; V. A. Kotoe, Novoe v arkhitekturno-stroitel'noi praktike Belorussii (New Trends in Architecture and Building in Byelorussia), Arkhitektura SSSR, 11, 1960, pp. 36–39; M. Orlova, Iskusstvo Sovetskoi Belorussii (Art of Soviet Byelorussia), Moscow, 1960; E. D. Kvitnitskaya, Starye gorodskie derevyannye doma jugo-zapadnoi Belorussii (Old Wooden Town Houses of Southwestern Byelorussia), Architekturnoe nasledstvo, 13, 1961, pp. 23–32; Zhilishchnoe stroitel'stvo, 7, 1961 (sp. no. dedicated to Byelorussian buildings); V. Aladov, Belorussiya, Arkhitektura SSSR, 9, 1962, pp. 24–26; V. A. Chanturiya, Arkhitektura Belorussii: kontsa XVIII-nachala XIX veke (Byelorussian Architecture: Late 18th–Early 19th Century), Minsk, 1962; F. D. Gurevich, Drevnosti Belorusskogo Poneman'ya (Antiquities of the Byelorussian Niemen Region), Leningrad, 1962.

Elena KVITNITSKAYA (architecture), Elena ALADOVA, Elizaveta ORLOVA (sculpture, painting, minor arts)

Art centers. Minsk (originally Mensk, Menesk, Men'sk). The capital of the Byelorussian S.S.R. (since 1919), it was first mentioned in chronicles of 1067. There are remains of a church of the first half of the 12th century. Baroque monasteries of the 17th and 18th centuries include a Bernardine monastery, a Bernardine convent, and the Monastery of SS. Peter and Paul. The present architectural aspect of Minsk was formed during the Soviet period, when the city underwent basic reconstruction. The chief buildings are the Hospital Center (1928–30, G. L. Lavrov), University Center (1928–31, I. K. Zaporozhets and G. L. Lavrov), and Lenin Library (1930–32, G. L. Lavrov). Constructions built by I. G. Langbard: Government House (1930–33), Officers' House (1934–35), Byelorussian Opera and Ballet Theater (1934–37), and Byelorussian Academy of Sciences (1935–39). Buildings by A. P. Voinov: Pioneers' Center (1935–36, with V. N. Varaksin), Party School of the Republic (1937–38), Hotel Belarus (1938), and the headquarters of the Central Committee of the Byelorussian Communist Party (1940–41, completed in 1947 by V. N. Varaksin). V. A. Korol and M. I. Baklanov also contributed public buildings. The Byelorussian Art Museum — until 1957 the Byelorussian Picture Gallery — was founded in 1939; it contains a collection of Byelorussian art of the 16th–20th century and Russian art of the 18th–early 20th century.

BIBLIOG. M. S. Osmolovski, Minsk, Moscow, 1950; V. R. Tarasenko, Drevni Minsk (Ancient Minsk), Materialy po arkheologii BSSR, I, Minsk, 1957, pp. 182–257; E. V. Aladova, ed., Gosudarstvenny khudozhestvenny muzei BSSR (State Art Museum of the BSSR), Moscow, 1958; F. S. Martinkevich, Minsk, Moscow, 1958; E. M. Zagoral'ski, Drevni Minsk, Minsk, 1963.

Gomel (originally Gomi). A town plan with a regular alignment of streets was adopted in the first half of the 19th century. The neoclassic Rumyantsev-Paskevich Palace, now the Regional Museum, Library, and Pioneers' Center, has a central section from 1785–93; additions are from the first half of the 19th century; the palace is set in a park. The wooden Church of St. Elias (Elijah) is from the late 18th century. Other buildings of note are the Cathedral of SS. Peter and Paul (1809–24, architect Klark), the Paskevich funerary chapel (2d half of 19th cent.), and the Russian Provincial Theater (1947–56, A. V. Tarasenko).

BIBLIOG. F. A. Zhudro et al., Gorod Gomel': Geograficheskostatisticheski ocherk (The City of Gomel: Geographical-statistical Essay), Zapiski Severo-Zapadnogo Otdela imperatorskogo Russkogo Geograficheskogo Obshchestva, II, 1912, pp. 293–353; S. Lebedev, Gomel', Minsk, 1962.

Grodno (originally Gorodno). The town was first mentioned in chronicles of 1128. The historical center of the city includes the Old Castle with the so-called "Lower Church" (1st half of 12th cent.), the so-called "Upper Church" (late 14th–early 15th cent.), and the Batori Palace, now the Historical and Archaeological Museum (after 1579, badly marred by reconstructions); the Church of SS. Boris and Gleb (12th cent.); and a palace known as the New Castle (mid-18th cent.; rebuilt in 1952 by V. N. Varaksin). In the modern center: a Jesuit church (1647–67, towers and dome rebuilt in 18th cent.), a Bernardine church (1595–1618, rebuilt in 18th cent.), and a Brigittine church (1642–51). In the Zanemanski suburb: a Franciscan church (1635, later rebuilt).

BIBLIOG. I. I. Iodkovski, Grodno, Vilna, 1923; N. N. Voronin, Drevnee Grodno (Old Grodno) (MIA, 41), Moscow, 1954; E. D. Kvitnitskaya, Stroitel'stvo Tyzengauza v Grodno (Building Activity of Tyzengauz in Grodno), Arkhitekturnoe nasledstvo, 11, 1958, pp. 21–42; V. I. Kudryashev, Grodno, Moscow, 1960.

Lida. Only the ruins of the castle remain (ca. 1325, destroyed in 1710).

BIBLIOG. W. Szukiewicz, Zamek w Lidzie: Dwory, zamki, i patace (The Castle of Lida: Courts, Castles, and Palaces,) Ziemia, 46, 1911, pp. 748–49.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Mir. The Illinich Castle dates from the early 16th century, and the palace is from the second half of the 16th century.

BIBLIOG. I. I. Iodkovski, Zamok v Mire (The Castle of Mir), Drevnosti, VI, 1915, pp. 18–29.

Mogilev. The castle was begun in 1267. A new large castle and fortifications were erected about 1526. The Church of S. Nicholas was begun in 1669.

BIBLIOG. A. and M. Trubnicki, Khronika belorusskogo goroda Mogileva (Chronicle of the Byelorussian City of Mogilev, tr. from Pol.), Moscow, 1887; E. R. Romanov, ed., Pervoistochniki dlya istorii Mogilevskogo (Sources for the History of the Mogilev Region), Odessa, 1916; M. Katser, Arkhitektura goroda Mogileva (Architecture of the City of Mogilev), Izvestiya Akademii nauk Belorusskoi SSR, 6, 1948, pp. 45–53; G. I. Grushenko, ed., Mogilev: istoricheski ocherk (Mogilev: Historical Essay), Minsk, 1959.

Nesvizh. The Radziwill Castle was begun in 1583. Other buildings of artistic interest are the baroque Town Hall (1596); the Benedictine monastery (1590–96); the Bernardine monastery (founded in 1598); and the Jesuit monastery with a college (1584–93) and a church (a baroque domed basilica, 1584, G. M. Bernardoni da Como).

BIBLIOG. B. Taurongiński, Z dziejów Nieswieza (On the History of Nesvizh), Warsaw, 1937.

Novogrudok (originally Novgorodok, Novogorodok). The town was mentioned in chronicles of 1116. There are ruins of the castle (destroyed in 1710), the lower part of the main tower (14th cent.), and other towers from the 16th century; the palace dates from the late 16th–early 17th century and has a chapel (late 17th cent.); the castle Church of the Dormition is from the 14th century. Other buildings include the Church of SS. Boris and Gleb (1517, later rebuilt), the synagogue (1648), and a Catholic parish church (1719–23).

BIBLIOG. J. Żmigrodzki, Nowogródek: Zarys historyczny (Novogrudok: Historical Essay), Vilna, 1924; R. Gürtler, Roboty konservatorskie na Górze Zamkowej w Nowogródku (Work of Conservation on Góra Zamkowa at Novogrudok), Ochrona zabytków sztuki, 1–4, I, Warsaw, 1930–31.

Polotsk (originally Poltesk, Polotesk). The town was mentioned in chronicles of 862. Until the beginning of the 14th century it was the capital of the Polotsk principality. The Cathedral of St. Sophia (2d half of 11th cent.) was transformed into a baroque basilica with two towers (ca. 1750). The Church of SS. Boris and Gleb is in ruins (1st half of 12th cent., architect Ioann). The Cathedral of the Monastery of Our Saviour and St. Euphrosyne (before 1159, architect Ioann) has frescoes of the 12th century. There is a Jesuit college (the main part begun in 1750) with the Church of St. Stephen (consecrated in 1745).

BIBLIOG. A. P. Sapunov, ed., Vitebskaya starina (Antiquity of Vitebsk), V, Vitebsk, 1888; N. N. Voronin and V. N. Lazarev, Iskusstvo zapadnorusskikh knyazhestv (Art of the Western Russian Principalities), Istoriya russkogo iskusstva, I, Moscow, 1953, pp. 303–29; I. S. Kravchenko and N. V. Kamenskoi, Polotsk: istoricheski ocherk (Polotsk: Historical Essay), Minsk, 1962.

Vitebsk (originally Vit'besk). The town was mentioned in chronicles of 1021. In 1101–1320 it was the capital of a principality. Noteworthy buildings are the remains of the Church of the Annunciation (12th cent.); a Jesuit college (18th cent.); the former governor's palace (until 1772); the Town Hall, now the Ethnographic Museum (1775; the third floor is from the early 19th cent.); and the Church of Our Saviour (1813).

BIBLIOG. A. P. Sapunov, ed., Vitebskaya starina (Antiquities of Vitebsk), 5 vols., Vitebsk, 1883–88; A. P. Sapnuov, Pamyatniki vremen drevnikh i noveishikh v Vitebskoi gubernii (Old and Newer Monuments of the Vitebsk Province), Vitebsk, 1903; A. P. Sapunov, "Chertëzh" goroda Vitebska 1664 goda ("Plan" of the City of Vitebsk of 1664), Vitebsk, 1910; N. N. Voronin and V. N. Lazarev, Iskusstvo zapadnorusskikh knyazhestv (Art of the Western Russian Principalities), Istoriya russkogo iskusstva, I, Moscow, 1953, pp. 303–29; H. A. Nikitsyn, Vitebsk, Minsk, 1959.

Elena KVITNITSKAYA

UKRAINE (Rus., Ukraina; Ukrainian S.S.R.). *Historical and artistic periods. a. Antiquity.* From sites of the Upper Paleolithic period (the Kirillov site at Kiev, the Moltsov site on the middle Dniester, Mezin near Novgorod-Seversk, etc.) have come schematized representations of animals, birds, and humans (carvings and drawings on bone). The Neolithic period (5th–3d millennium B.C.) is represented by port-ayals of humans and animals on the walls of grottoes in the Stone Burial (Kamennaya mogila, north shore of the Sea of Azov). From the Copper and the Bronze Age (3d–2d millennium B.C.) are numerous remains of the Tripole culture (the Dnieper and Dniester areas) including painted pottery, statuettes of humans and animals made of baked clay, and the ruins of large houses of beaten clay (the settlements of Kolomiishchina on the middle Dnieper, of Luka Vrublevetskaya on the Dniester, etc.). The ornamental motifs are geometric in the north and east and spiral and meander in the Dnieper area and the southwest. Characteristic of the Ukrainian steppe are the numerous barrows of the Copper and the Bronze Age. In the 1st millennium B.C. the megalithic constructions in the Crimea (semi-dolmens of the southern coastal area and menhirs) appeared.

From the 1st millennium B.C. to the beginning of the 1st millennium A.D. the art of the kingdoms of classical antiquity and of the Scythian tribes developed in the southern Ukraine (see GRECO-BOSPORAN AND SCYTHIAN ART). In the northern Black Sea area are ruins of the classical cities that began to be established in the 6th century B.C.: Tyras (at the estuary of the Dniester); Olbia (at the mouth of the Dnieper and Bug rivers); Theodosia (in the Crimea); Chersonesos (near mod. Sevastopol); and Pantikapaion (mod. Kerch), which was the capital of the Bosporan kingdom from the 5th century B.C. to the 4th century of our era. Remains of houses, temples, public buildings, fortifications, and tombs with corbeled roofs (the Golden, Royal, and Melek Chesmen tumuli, 4th cent. B.C., VI, PL. 470, FIG. 854) have been excavated. Figural and decorative art is represented in wall paintings in houses and tombs (VI, PL. 462; Demeter tomb at Pantikapaion, 1st–2d cent., VI, PL. 472), mosaics (the floor of the baths at Chersonesos, 2d–1st cent. B.C.), sculpture in marble (VI, PL. 473) and terra cotta, sarcophagi (VI, PL. 474) and funerary steles, and gold coins (VI, PL. 471). Scythian barrows and ramparts of hill forts have been preserved in the southern Ukraine. Excavations on the outskirts of Simferopol have brought to light the remains of the Scythian city of Neapolis (Neapol Skifski), the capital of the Scythian kingdom from the 4th century B.C. to the 3d century of our era, with mausoleums, tombs with wall paintings, Greek inscriptions, and sculpture. The Scythian jewelry found in this area is known the world over: the gold comb from Solokha (VI, PL. 465), the electrum vase and objects of gold from Kul Oba (VI, PLS. 465, 466; XIII, PLS. 187, 191), and the silver vases and gold objects from Chertomlyk (VI, PLS. 466–468) — all from the 4th century B.C. Typical of this art are dynamic representations of animals (the "animal style," which reappears in Sarmatian and, later, in Slavic art).

b. Medieval and modern periods. On the northern shore of the Black Sea are the remains of numerous Christian churches of the 5th–10th century, with plain exteriors and richly decorated interiors (the mosaic floors of the Uvarov Basilica and of the so-called "Suburban Church" at Chersonesos, 6th–10th cent.). A surviving example of the Byzantine type of church is the one of St. John the Precursor in Kerch (10th–14th cent.) with fragments of frescoes. Of great interest are the "cave towns" in the southwestern Crimea — castle-forts and monasteries with remains of defensive walls and towers, palaces, basilicas, and houses hewn out of the cliffs.

The art of the eastern Slavs of the 1st millennium A.D. is represented by fibulae, buckles, and pendants, often with representations of animals and people. The technique of champlevé was widely practiced. Many of the ornamental and representational motifs were connected with Slavic beliefs. Sculpture is represented by the square pillar with reliefs, surmounted by a head with four faces, that was found in the Zbruch River. Numerous Slavic citadels enclosed by massive earthen ramparts have survived to the present day.

With the formation of a powerful feudal state — Kievan Russia, which, in the 9th–10th century, united the eastern Slavic tribes — began the great period of ancient Russian art, which became the artistic source of the Great Russian, Ukrainian, and Byelorussian peoples. Large cities were built in the Ukraine: Kiev, Chernigov, Pereyaslavl, Belgorod, and Vladimir Volynsk. Ordinary buildings were generally made of wood. Monumental constructions (palaces and churches) were of stone or brick. Typical was the Byzantine technique of construction, as well as certain compositional features taken from folk architecture in wood. In the late 10th and in the 11th century large churches were built with a cruciform plan, a dome, and many cupolas: the Desyatinnaya Church (989–96) and the five-aisled Cathedral of St. Sophia (ca. 1037) in Kiev (XII, PL. 128; XIII, FIG. 84) and the Cathedral of the Transfiguration in Chernigov (ca. 1036). During the intensive building of monasteries, from the second half of the 11th to the early 12th century, a type of single-domed cruciform church with plainer and more restrained forms evolved: the Cathedral of the Dormition (1073–78, destroyed in 1941) in the Monastery of the Caves (Pecherskaya Lavra) in Kiev.

The interiors of the churches were richly decorated with mosaics, frescoes, and carving. In the Cathedral of St. Sophia in Kiev are remarkable mosaics (the huge figure of the Virgin Orans, the scene of the Eucharist, the figures of the Church Fathers in the central apse, XIII, PL. 64) and frescoes (portraits of members of the family of Yaroslav the Wise, secular scenes, etc.). Also outstanding are the mosaics and frescoes of the church of the Monastery of St. Michael (XIII, PL. 65) in Kiev. In the 11th century icon painting was taught

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in a school at the Monastery of the Caves, and the artist Alimpi (Alipi) enjoyed especial renown. Representational reliefs executed on slate slabs (2d half of 11th cent.) have been preserved. Miniatures dating from the 11th and 12th centuries include the Gospels of Ostromir (1056–57, XIII, PL. 73) and the Svyatoslav Miscellany (1073, Moscow, Historical Mus.). Objects of jewelry made by Kievan masters (XIII, PL. 70) were embellished with cloisonné enamel, chasing, niello, and filigree. Typical were plant ornamentation and plaited motifs, representations of animals and birds connected with pagan beliefs, and portrayals of Christian subjects.

From the second quarter of the 12th century, as Kievan Russia broke up into feudal principalities, local architectural and artistic schools were formed. Local materials were used for building. In Galician Russia an architecture in white stone developed (Church of St. Panteleimon at Galich, late 12th cent.) with carving resembling that found on Romanesque buildings. Ceramic slabs, with ornamental and representational embellishment, were used as the facing. In the Dnieper area (principalities of Kiev, Chernigov, and Pereyaslavl) the technique of ornamental brickwork was developed: the Cathedral of SS. Boris and Gleb (12th cent.) and the Cathedral of the Eletski Monastery (mid-12th cent.), both in Chernigov, and the Cathedral of Kanev (1144). At the end of the 12th century churches with complex structures deriving from folk architecture in wood were built with rich brick decoration on the exterior walls: the Church of Good Friday (Paraskeva-Pyanitsa, XIII, PL. 57) in Chernigov and the Church of St. Basil in Obruch. An outstanding example of mural painting is found in the Church of St. Cyril in Kiev, executed by local masters (mid-12th cent.).

In the 13th century the Tatar-Mongol invasion dealt a heavy blow to the development of the culture of ancient Russia. In the 14th century part of the Ukrainian territory was seized by Lithuanian and Polish overlords. The architecture of this period was marked by a greater defensive aspect. Numerous fortresses, castles, and fortified monasteries were built. Ecclesiastical buildings also assumed a defensive character (church-fort at Sutkovtsi, 15th–16th cent.). Large churches in Volynia (Church of the Apparition at Ostrog, Church of the Trinity at Mezhirich, 15th–16th cent.) preserved the ancient Russian type of cruciform, domed building, but presented elongated proportions, many-sided drums, and new materials (fluted bricks). In the Crimea, Genoese types of fortresses (14th–15th cent.) were erected at Theodosia, Sudak, and Balaklava. Among the Crimean ecclesiastical and burial buildings of interest are the Armenian churches, Moslem mosques, and mausoleums. In the 16th–18th century the Bakhchisarai Palace of the Khans was built.

In painting of the 14th–16th century, which retained ancient Russian traditions, there was a perceptible effort to achieve greater animation in movement and more original compositions (murals in the church of Luzhany, 15th cent., and church of Lavrov, 16th cent.; the work of Ukrainian masters in Poland; see POLAND). Beginning in the 15th century the preference in painting was for icons rather than frescoes. In the 15th century the icons were distinguished by the simplicity of their composition and the richness of their color schemes and in the 16th century by their expressivity of lines and figures. Sculpture employed low relief. In miniatures the narrative element was stressed and worldly subjects were introduced (Kievan Psalter, 1397); in book ornamentation there was widespread use of the "animal style" and of plaiting motifs.

In the western districts, in the second half of the 16th century, Renaissance motifs were widely used; this was connected with the more active economic life of the cities (Lvov, Lutsk) and the broadening of cultural ties with other nations. Especially expressive was the architecture of the school that was formed in Lvov (architects P. Krasovski, P. Barbon, P. Rimlyanin, V. Kupinos, and A. Prikhilny), where, along with Renaissance forms, occasional use was made of compositional elements drawn from folk architecture in wood. In the Dnieper area — church in Sulimovka, 1627, and Church of St. Elias (Elijah) in Subbotovo, 1653 — and in Volynia — Church of the Dormition in Niskenichi, 1653 — wooden churches with three or five chambers were constructed, a type characteristic of Ukrainian architecture. In the western districts, in connection with the strengthening of the Polish-Catholic expansion (17th cent.), numerous Catholic monasteries and churches in baroque style were erected.

In the icons of the second half of the 16th century a typical feature was the lighter color range and the predominance of pale blue tones. In the 17th century chiaroscuro, numerous details from the local way of life, and figures of donors were introduced in icon painting, and a typically Ukrainian iconography was formed. Decorative and realistic tendencies were mingled in the carved tombstones of the church elders and the laity beginning in the late 16th century.

In ornamentation, plant motifs of a Renaissance type predominated. A high degree of excellence was achieved in metal casting (Lvov) and in pottery (painted and, in the late 16th cent., glazed; also, glazed tiles). The sculpture of the 16th–17th century is represented by funerary monuments. Miniature painting was similar to Great Russian icon painting.

The union of the Ukraine with Russia (1654) played a great role in the development of the Ukrainian national culture. In the second half of the 17th century new towns were created (e.g., Poltava, Kharkov, Sumy) and much building was undertaken. Architecture in stone adopted the forms of the Ukrainian wooden architecture. Types of three- and five-chambered, many-domed churches were created (Cathedral of the Intercession in Kharkov, 1689, three-chambered; Church of the Trinity at Gustyn, 1671, Church of the Dormition at Lyutenko, 1686, and the Church of All Saints over the entrance to the Monastery of the Caves in Kiev, 1696–98, all five-chambered. In the cathedrals of many monasteries ancient Russian traditions were retained. Numerous civic buildings from the second half of the 17th and the early 18th century have been preserved. By the 18th century the ensembles of the present St. Sophia and the Monastery of the Caves, both in Kiev, had been built, as well as that of the Gustynski Monastery at Priluki. Typical of this period were the decorated external walls, rich brick ornamentation, and the use of elements of 17th-century Russian architecture (window frames, portals, etc.). At this time many Russian architects were at work in the Ukraine (O. D. Startsev, D. V. Aksamitov) and many Ukrainian ones in Russia (I. P. Zarudny, d. 1727). From the 1730s on, the architecture of St. Petersburg exerted a growing influence. Architects from Russia erected buildings in the Ukraine: J. G. Schädel (1680s–1750) built the bell tower of the Monastery of the Caves in Kiev (1731–45); A. V. Kvasov (d. 1772), the Cathedral at Kozelts (1752–63); and I. F. Michurin (1700–63), the Church of St. Andrew in Kiev (1747–53, PL. 237) according to designs by B. F. Rastrelli. The major Ukrainian architects of this period were I. G. Grigorovich-Barski (1713–85) and S. D. Kovnir (1695–1786), both of whom worked in Kiev. Characteristic of the architecture was the use of baroque details and the abundance of molded ornamentation on the façades. In the architecture of the western districts the baroque style predominated: the Jesuit college in Kremenets (1731–43), Town Hall in Buchach (1751), and Cathedral of St. George in Lvov (1746–62), the last two by B. Meretin (d. 1759). The majority of the remarkable Ukrainian buildings in wood are from the 17th to the 18th century. The main types of wooden churches were those with three frames and one or three domes (Cathedral of St. George in Drogobych, 1st half of 17th cent.; Church of St. Nicholas, originally in the village of Krivki, now at Lvov, 1763), those with five frames and one or five domes (Church of the Intercession in Romen, now in Poltava, 1764), and, less frequently, those with nine frames and many domes (Cathedral at Novomoskovsk, 1773–81, Ya. Pogrebnik). Often the domes were shaped like helmets. The main type of Ukrainian peasant house was the *khata* divided into three sections (vestibule, storeroom, and living quarters), made of logs in the north and of beaten clay in the wooded and steppe regions. Characteristic of these houses is an exterior coat of clay and whitewash that was often tinged with light colors, such as pale blue and pink. In the Carpathian mountain regions very ancient types of houses have survived.

Beginning in the second half of the 17th century, portraits were more elaborate and individualized. In icons and wall paintings (A. Galik, 1703–63, and others) elements taken from Dutch and other engravings were combined in an original way with folk art. The representations of saints were often distinguished from portraits only by the ornamental gold background (I. Rutkovich and I. Kondzelevich). Typical of the iconostases of the 17th and the early 18th century were the clear proportions, the unity of style in painting, carving, and architecture, and the abundance of secular subjects. In the course of time the iconostases became more sumptuous, more brightly colored, more profuse with gold and carving, and had more icons. Sculpture in metal and wood became widespread, as did engravings with religious and secular subjects. Minor arts flourished: polished ceramics (including tiles with elaborate designs), glass, carpets with geometric and plant ornamentation, embroidery in silk and gold thread, and silver church vessels in the baroque manner. In folk art the popular image of the Cossack Mamai playing a pandora was represented on shutters, doors, trunks, and wooden beehives and in easel paintings.

In the second half of the 18th century highly simplified, individualized portraits were the fashion. After the opening of the St. Petersburg Academy of Fine Arts (1757), most of the gifted artists who had begun their careers in the Ukraine (e.g., D. G. Levitski, 1735–1822, and V. L. Borovikovski, 1757–1825) went to the capital.

In the 18th century neoclassicism predominated in architecture largely because of the contributions of leading Russian architects of the neoclassic school: I. E. Starov (who laid out the city Ekaterinoslav), C. Cameron (palace at Baturin, 1799–1803), G. Quarenghi (palaces at Khotino, Lyalichi, etc.), A. D. Zakharov (Cathedral at Ekaterinoslav, 1830–35), A. I. Melnikov (semicircular square in Odessa, 1826–31), and T. de Thomon (Column of Glory in Poltava, 1805–11). Ukrainian architects were also active (A. I. Melenski, 1766–1833, and P.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

A. Dubrovski, b. 1782/83). In the second third of the 19th century neoclassic traditions (buildings of V. I. Beretti, 1781–1842, in Kiev) vied with eclectic tendencies as displayed in mansions in the Crimea (Vorontsov mansion at Alupka, 1830–37, built by E. Blore, 1789–1879). At the end of the 18th century and in the first half of the 19th, remarkable gardens with natural landscaping were created.

The development of easel painting was connected with the spread of revolutionary, democratic ideas which aroused interest in the common people's way of life and history, in socially significant subjects, and in the development of realism. The founder of the new school of Ukrainian painting was T. G. Shevchenko (1814–61); his precursors were the portraitists V. A. Tropinin (1776–1857, worked in the Ukraine in 1804–23) and K. S. Pavlov (1792–1852, worked in the Ukraine in 1820–46), as well as the landscape artist V. I. Shternberg (1818–45, worked in the Ukraine in 1837–38). The importance of Shevchenko as a master of critical realism and as the inspired poet of the masses was also significant for Russian art.

In the late 18th and the early 19th century artistic goods of an industrial nature were created: carpets, blown glass (bottles shaped like stylized bears, sheep, lions, cockerels), ceramics (vessels, tiles), and china and faïence. Ancient geometric designs continued to be used in wood carving and in peasant embroidery, which was generally executed in red, black, and white. In the western areas an original national character was kept in folk art, whereas in the work of professional artists who received their training in Italy or Austria the national traits disappeared.

The development of capitalism in the second half of the 19th century gave rise to new types of building. Architecture became eclectic: the Cathedral of St. Vladimir in Kiev (1852–96), the Galician Diet (now the University) in Lvov (1877–81), and the metropolitan's residence (now the University) in Chernovitsi (1864–73). In the early 20th century architecture reflected both the Art Nouveau style (the Gorodetski house in Kiev, 1902–03) and neoclassicism (the Arcades in Kiev, 1913–14). During this period architects also attempted to work out a national style (the building of the District Assembly in Poltava, 1905–09).

The life and sufferings of the Ukrainian peasants were represented in paintings by followers of Shevchenko — L. M. Zhemchuzhnikov (1828–1912), I. I. Sokolov (1823–1910), K. A. Trutovski (1826–93), and D. I. Bezperchi (1825–1913). The subsequent development of realistic painting was bound up with the Peredvizhniki movement. Nature and peasant life were portrayed by P. D. Marynovich (1856–1933), N. K. Pimonenko (1862–1912), S. I. Svetoslavski (1857–1931), P. A. Levchenko (1856–1917), V. D. Orlovski (1842–1914), and N. D. Kuznetsov (1850–1929). Subjects drawn from history formed the basis for the paintings of S. I. Vasilkovski (1854–1917), F. S. Krasitski (1873–1944), A. A. Murashko (1875–1919), A. G. Slastion (1868–1933), and I. S. Izhakevich (1864–1962). In the second half of the 19th century art schools were created in which instruction was given by artists of the realist school: in Kiev by N. I. Murashko (1844–1909), in Odessa by K. K. Kostandi (1852–1921), and in Kharkov by S. M. Prokhorov (1873–1948). Sculpture was represented by the works of L. V. Pozen (1849–1921).

In the late 19th and early 20th century the traditions of national art were retained mainly in the peasant way of life. In the interiors of the *khatas* liberal use was made of decorative mural painting (plant and, less frequently, zoomorphic ornamentation). The designs of carpets began to be executed predominantly in bright colors with black, dark blue, and white backgrounds. In central Ukraine carpets with a smooth surface (*kilimy*) and with a shaggy surface (*kotsy*) were made; in Podolia embroidered carpets were customary. Typical items were decorative textiles: bedspreads (*ryadno*, generally of a checked design in red, green, black, and purple woolen yarn), hand towels (*rushniki*), and lengths of textiles draped as skirts (*plakhta*) of a checked design in bright colors. Printing on calico was prevalent (plant motifs, stylized birds, etc.). The centers of the textile production were the villages of Sorochintsy, Shishaki, and Reshetilovka. Various kinds of pottery were produced: round pitchers (*kumantsy*); small barrel-shaped vessels (*bariltsy*), sometimes in form of sheep; and decorative platters, generally with representations of flowers, birds, and human figures in the center. Embossed leather, inlay, and wood carving flourished in the western Ukraine.

c. The Soviet period. During the Soviet period new towns were built and old ones reconstructed. Many large apartment houses, clubs, theaters, schools, cultural centers, sanatoriums, and other public buildings were constructed. In 1930 a vast project for the reconstruction of Crimean resorts was planned. During the war of 1941–45 hundreds of Ukrainian towns and villages were damaged. These were reconstructed and new building was begun on a large scale in the postwar period.

During the Civil War (1918–20) political poster art and caricatures were especially developed by A. I. Strakhov (b. 1896), B. E. Efimov (b. 1900), and Z. Sh. Tolkachev (b. 1903). In the 1920s and early 1930s the themes of revolutionary transformations and of building a new way of life were widely reflected in painting, the graphic arts, and sculpture. Artistic unions were founded: the Association of Artists of Red Ukraine and the Association of Revolutionary Art of the Ukraine, whose members worked in cubist, futurist, and expressionist styles and also attempted to revive medieval forms (M. L. Boichuk, b. 1883, and his followers). Subsequently the realistic tendency emerged as the dominant one: painters F. G. Krichevski (1879–1947), N. S. Samokish (1860–1944), K. D. Trokhimenko (b. 1885), S. M. Prokhorov (1873–1948), G. P. Svetlitski (1872–1948), N. G. Burachek (1871–1942), and A. A. Shovkunenko (b. 1884); sculptors M. I. Gelman (b. 1892) and E. A. Blokh (1881–1943); graphic artists I. S. Izhakevich, V. I. Kasiyan (b. 1896), and I. A. Daits (1897–1954); and the theatrical designers A. G. Petritski (b. 1895), A. V. Khvostov (b. 1895), and V. G. Meller (1884–1962). In the 1930s artists who had been trained during the Soviet period emerged: painters M. G. Deregus (b. 1904), V. N. Kostetski (b. 1905), A. M. Dovgal (b. 1904), V. F. Mironenko (b. 1910), and A. S. Pashchenko (b. 1906); and sculptors G. L. Pivovarov (1908–42) and M. G. Lysenko (b. 1906).

The artists of the postwar period are: painters G. S. Melikhov (b. 1908), T. N. Yablonskaya (b. 1917), M. M. Bozhi (b. 1911), S. A. Grigorev (b. 1910), V. G. Puzyrkov (b. 1918), M. I. Khmelko (b. 1919), and I. I. Bokshai (b. 1891); sculptors A. A. Kovalev (b. 1916), I. M. Gonchar (b. 1911), and A. P. Oleinik (b. 1914); and graphic artists V. G. Litvinenko (b. 1908) and E. L. Kulchitskaya (1877–1961). Artistic industries have been developing (ceramics, glass, textiles and embroidery, and carving in wood) and folk art is thriving.

BIBLIOG. B. I. and V. N. Hanenko, Drevnosti Pridneprov'ya (Antiquities of the Dnieper Region), 6 vols., Kiev, 1899–1907; V. Gnatyuk, Tkatstvo u Shidni Galichini (Textiles of Western Galicia), Lvov, 1900; G. G. Pavlutski, Derevyannye i kamennye hramy (Wooden and Stone Churches) (Drevnosti Ukrainy, I), Kiev, 1905; D. V. Ainalov, Ocherki i zametki po istorii drevnerusskogo iskusstva (Essays and Notes on the History of Ancient Russian Art), St. Petersburg, 1908; W. Łoziński, Złotnictwo lwowskie (Goldsmith's Work of Lvov), Lvov, 1912; Ukraininskoe narodnoe tvorchestvo (Ukrainian Folk Art), 2 vols., Poltava, 1912–13; V. V. Hvoika, Drevnie obitateli Srednego Pridneprov'ya i ikh kul'tura v doistoricheskie vremena (The Ancient Inhabitants of the Middle Dnieper Region and Their Civilization in Prehistoric Times), Kiev, 1913; E. Kolbenheyer, Motive der hausindustriellen Stickerei in der Bukowina, Vienna, 1913; V. Shcherbakivs'ki, Ukraïns'ke mistetstvo (Ukrainian Art), I, Lvov, Kiev, 1913; M. I. Rostovtsev, Antichnaya dekorativnaya zhivopis' na yuge Rossii (Ancient Decorative Painting in Southern Russia), 2 vols., St. Petersburg, 1914; K. Sherotski, Ocherki po istorii dekorativnogo iskusstva Ukrainy, I: Khudozhestvennoe ubranstvo doma v proshlom i nastoyashchem (Historical Essays on Ukrainian Decorative Art, I: Interior Decoration in Past and Present), Kiev, 1914; H. K. Lukomski, Starinnaya arkhitektura Galitsii v ocherkakh i risunkakh (Old Architecture of Galicia in Sketches and Drawings), Petrograd, 1915; G. K. Lukomski, Starinnye usad'by Khar'kovskoi gubernii (Old Country Houses of Kharkov Province), I, Petrograd, 1917; F. Ernst, Ukrainske mistetstvo XVII–XVIII vv. (Ukrainian Art, 17th–18th Cent.), Kiev, 1918; F. I. Shmit, Mistetstvo staroï Rusi-Ukraïni (Art of Old Rus-Ukraine), Kharkov, 1919; A. Lushpins'ki, Derev'yani tserkvi Galichini XVI–XVIII v. (Galician Wooden Churches, 16th–18th Cent.), Lvov, 1920; I. Sventsits'ki, Pochatki knigopechatannya na zemlyakh Ukraïni (Beginnings of Printing in the Ukrainian Lands), Lvov, 1924; B. Krizhanovski, Ukrainskie i rumynskie kilimy (Ukrainian and Romanian "Kilimy"), Leningrad, 1925; D. Shcherbakivs'ki and F. Ernst, Ukrains'ki portret XVII–XX st. (The Ukrainian Portrait, 17th–20th Cent.), Kiev, 1925; V. Sichins'ki, Arkhitektura staroknyazivs'ko dobi: X–XIII st. (Architecture of the Period of the Old Principates: 10th–13th Cent.), Prague, 1925; V. Sichins'ki, Arkhitektura v starodrukakh . . . (Architecture in Old Printed Matter . . .), Lvov, 1925; P. N. Popov, Materiyali do slovnika ukraïns'kikh graveriv (Materials for a Repertory of Ukrainian Engraving), 2 vols., Kiev, 1926–27; D. Shcherbakivs'ki, Ukraïns'ke mistetstvo (Ukrainian Art), II, Kiev, Prague, 1926; K. Krzhemins'ki, Stinni rezpisi na Umanschchini: Motivi ornamentu (Wall Paintings of the Uman Area: Ornamental Motifs), Kam'yanets na Podillyu, 1927; G. G. Pavluts'ki, Istoriya ukraïns'kogo ornamentu (History of Ukrainian Ornament), Kiev, 1927; Ukraïns'ki muzei: Zbirnik pershi (Ukrainian Museums: First Collection), Kiev, 1927; E. Sichins'ki, Oberonni zamo zakhidnogo Podillya XIV–XVII st. (Defensive Castles of Western Podoliai 14th–17th Cent.), Kiev, 1928; I. Sventsits'ki, Ikonopis Galits'hoï Ukraïni, XV–XVI vikiv (Icon Painting of the Ukraine, 15th–16th Cent.), Lvov, 1928; S. Taranushenko, Mistetstvo Slobozhanshchini XVII–XVIII vv. (Art of Slobozhanshchina, 17th–18th Cent.), Kharkov, 1928; A. I. Zaremb-ski, Narodnoe iskusstvo podol'skikh ukraintsev (Folk Art of Ukrainian Podolia), Leningrad, 1928; T. Seweryn, Pokucka majolika ludowa (Folk Majolica of Pokuta), Kraków, 1929; S. Szuman, Dawne kilimy w Polsce i na Ukrainie (Ancient "Kilimy" of Poland and Ukraine), Poznán, 1929; E. V. Berchenko, Nastinne malyuvannya ukraïnskikh khat ta gospodar'kikh budivel' pri nikh (Wall Paintings in Ukrainian Cottages . . .), Kharkov, Kiev, 1930; M. Alpatov and N. Brunov, Geschichte der altrussischen Kunst, Augsburg, 1932; T. Mańkowski, Lwowski cech malarzy w XVI i XVII wieku (The Painters' Guild of Lvov in the 16th and 17th Centuries), Lvov, 1936; M. Dragan, Ukraïns'ki derev'yani tserkvi (Ukrainian Wooden Churches), 2 vols., Lvov, 1937; M. V. Babenchikov, Narodnoe dekorativnoe iskusstvo Ukrainy i ego mastera (Decorative Folk Art of the Ukraine and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Its Masters), Moscow, 1945; S. V. Bessonov, Arkhitektura Zapadnoi Ukrainy (Architecture of Western Ukraine), Moscow, 1946; V. D. Blavatski, Iskusstvo Severnogo Prichërnomor'ya antichnoi epokhi (Art of the Northern Black Sea in Ancient Times), Moscow, 1947; Istoriya kul'tury drevnei Rusi (History of the Civilization of Ancient Rus'), 2 vols., Moscow, Leningrad, 1948–51; B. A. Rybakov, Remeslo drevnei Rusi (Handicrafts of Ancient Rus'), Moscow, 1948; P. G. Yurchenko, Derev'yane zodchestvo Ukraïni XVIII–XIX st. (Ukrainian Wooden Architecture, 18th–19th Cent.), Kiev, 1949; Arckhitekturni pam'yatniki: Sbornik statei (Architectural Monuments: Collection of Articles), Kiev, 1950; A. N. Svirin, Drevnerusskaya miniatyura (Old Russian Illumination), Moscow, 1950; Arkhitektura Ukrainskoi SSR (Architecture of the Ukrainian SSR), 2 vols., Moscow, Kiev, 1951–54; N. D. Manucharova, Dekorativno-priklade mistetstvo Ukraïni (Minor Arts of the Ukraine), Kiev, 1952; I. E. Grabar' et al., ed., Istoriya russkogo iskusstva (History of Russian Art), I, Moscow, 1953, passim; Pamyatniki arkhitektury Ukraini (Architectural Monuments of the Ukraine), Kiev, 1954 (cat.); Zodchestvo Ukrainy: Sbornik statei (Architecture of the Ukraine: Collection of Articles), Kiev, 1954; Antichnye garoda Severnogo Prichërnomor'ya (Ancient Cities of the Northern Black Sea), I, Moscow, Leningrad, 1955; C. I. Kasiyan, ed., Russko-ukrainskie svyazi v izobrazitel'nom iskusstve (Russo-Ukrainian Ties in Art), Kiev, 1956; P. I. Makushenko and Z. A. Petrova, Narodnaya arkhitektura Zakarpat'ya (Folk Architecture of Transcarpathia), Kiev, 1956 (cat. ed. by Yu. Nel'govski); D. B. Shelov, Antichny mir v Severnom Prichërnomor'e (The Ancient World on the Northern Black Sea), Moscow, 1956; V. Sichins'ki, Istoriya ukraïns'kogo mistetstva, I: Arckhitektura (History of Ukrainian Art, I: Arhcitecture), New York, 1956 (bibliog.); V. I. Kasiyan and Yu. Ya. Turchenko, Ukraïns'ka radyans'ka grafika (Soviet Ukrainian Graphics), Kiev, 1957; V. V. Kuril'tseva and N. V. Yavorskaya, Iskusstvo Sovetskoi Ukrainy, ocherki: Zhipovis', skul'ptura, grafika (Art of the Soviet Ukraine, Essays: Painting, Sculpture, Graphics), Moscow, 1957; Narisi istoriï arkhitekturi Ukraïnskoï RSR (Historical Sketches of the Architecture of the Ukrainian SSR), I, Kiev, 1957; Narisi starodavn'oï istoriï Ukraïns'koï RSR (Sketches of the Ancient History of the Ukrainian SSR), Kiev, 1957 (2d ed., 1959); Ya. P. Zatenats'ki, Ukraïns'ki, radyans'ki zhivopis' (Soviet Ukrainian Painting), Kiev, 1958; P. M. Zholtovs'ki, Vizvol'na borot'ba ukraïns'kogo narodu v pam'yatkakh mistetstva XVI–XVIII st. (The War of Liberation of the Ukrainian People in Monuments of Art, 16th–18th Cent.), Kiev, 1958; L. Ya. Kaganov, Ukraïns'ka kniga kintsya XVI–XVII st. (Ukrainian Books at the End of the 16th–17th Cent.), Kharkov, 1959; G. G. Mezentseva, Muzei Ukrainy (Museums of the Ukraine), Kiev, 1959; Pitaniya istoriï arkhitekturi ta budivel'noï tekhniki Ukraïni: Zbirnik statei (Questions of Architectural History and Building Technique in the Ukraine: Collection of Essays), Kiev, 1959; P. O. Bilets'ki, "Kozak Mamai," ukraïns'ka narodna kartina ("Cossack Mamai," Ukrainian Folk Picture), Lvov, 1960; P. O. Bilets'ki, Le portrait dans la peinture ukrainienne, Cah. du monde russe et sovietique, I, 1960, pp. 630–36; V. H. Bilozub et al., ed., Ukraïns'ke narodne misterstva (Ukrainian Folk Art), 3 vols., Kiev, 1960–62; P. I. Hovdya, Ukrainskoe sovetskoe izobrazitel'noe iskusstvo: Zhivopis', skul'ptura, grafika (Soviet Ukrainian Art: Painting, Sculpture, Graphics), Kiev, 1960; P. I. Hovdya, Znivopis' radyans'koï Ukraïni (Soviet Ukrainian Painting), Kiev, 1960; Yu. S. Aseev and G. A. Lebedev, Arkhitektura Kryma (Architecture of the Crimea), Kiev, 1961; A. P. Ivanova, Skul'ptura i zhivopis' Bospora (Sculpture and Painting of the Bosporus), Kiev, 1961; V. I. Kasiyan and Yu. Ya. Turchenko, Ukraïns'ka dozhovtneva realistichna grafika (Realistic Ukrainian Graphic Art Before the October Revolution), Kiev, 1961; M. I. Marchenko, Istoriya ukraïns'koï kul'turi (History of Ukrainian Civilization), Kiev, 1961; V. P. Samoilovich, Narodna tvorchist' v arkhitekturi sil'skogo zhitla (Folk Art in the Architecture of Country Houses), Kiev, 1961; H. A. Gritsei et al., Ocherki istorii arkhitektury Ukrainskoi RSR (Essays on the History of Architecture in the Ukrainian SSR), Kiev, 1962; Materialy po etnografii i iskusstvovedeniyu (Materials for Ethnography and Study of Art), Kiev, 1962; H. N. Logvin, Ukrainskoe iskusstvo X–XVIII vv. (Ukrainian Art, 10th–18th Cent.), Moscow, 1963; L. C. Milyareva and H. N. Logvin, Ukrainskoe iskusstvo XIV–pervoi poloviny XVII v. (Ukrainian Art, 14th–1st Half of 17th Cent.), Kiev, 1963; M. Gębarowicz, Szkice z historii sztuki XVII w. (Essays on the History of Art of the 17th Cent.), Toruń, 1966; V. D. Blavatski, EAA, s.v. Crimea.

Yuri Aseev, Platon Beletski

Art Centers. Kiev. The capital (from 1934) of the Ukrainian S.S.R., Kiev is situated on the hilly right bank and on the low left bank of the Dnieper River. Settlements were made on the area of Kiev in the Paleolithic period (Kirillov site). In the 9th–12th century Kiev was the capital of the ancient Russian state; in the 14th century it became the center of the Ukraine. The Upper Town (Old Kiev), established in the 10th–11th century, was the residence of the reigning prince; the Lower Town (the Podol) lies in a valley along the Dnieper; Pechersk developed in the mid-11th century when the Monastery of the Caves was founded.

The St. Sophia complex (now a museum) includes: the Cathedral of St. Sophia (XII, pl. 128; XIII, fig. 84) — an outstanding church dating from about 1037, restored in the 17th–18th century when cupolas and façades in the Ukrainian baroque style were added, with famous mosaics (XIII, pl. 64) and frescoes from the 11th century; the bell tower (lower story early 18th cent., second and third stories 1744–48, fourth story 1851–52), in Ukrainian baroque style; and the seminary (1763–67), the former metropolitan's residence (1722–57), and the Zaborovsky Gate (1746, built by J. G. Schädel), all in Ukrainian baroque style. The Monastery of the Caves (Pecherskaya Lavra) includes: the Church of the Trinity (built over the entrance gate of the monastery, 1108, rebuilt during the 17th–18th cent.), with frescoes (18th cent.) in the interior; the Church of All Saints (1696–98), one of the finest buildings in Ukrainian baroque style; the bell tower of the monastery (1731–45, by J. G. Schädel); and the Kovnirovski building (1721–72) with bell towers (1754–61 and 1759–62) by S. D. Kovnir. The Vydubetski Monastery includes: the Cathedral of St. Michael (1070–88, rebuilt in the 18th cent.), the five-domed Church of St. George (1696–1701), the bell tower (1727–33), and the refectory (1696–1701). The Florovski Monastery in the Podol includes: the Cathedral of the Ascension (1722–32), the refectory (late 17th cent.), and the rotunda-shaped Church of the Resurrection (1824, A. I. Melenski). The Golden Gate (1037), now in ruins, formed part of the fortification system of ancient Kiev. The Church of Our Saviour in Berestovo (1113–25, rebuilt in the 17th–18th cent.) has a bell tower of the early 19th century (A. I. Meleski). The Church of St. Cyril (mid-12th cent., restored in the 17th cent.) has a pediment added in the middle of the 18th century by I. B. Grigorovich-Barski; there are remarkable frescoes of the 12th century and murals of 1883–84 by M. A. Vrubel in the gallery.

Constructions in baroque style: the Old Kiev Academy in the Podol (1703, rebuilt in 1732–40 by Schädel); the house of Peter the Great in the Podol (early 18th cent.); the Church of St. Nicholas (1772–75) and the Church of the Intercession (1766) in the Podol, both by Grigorovich-Barski; the Church of St. Andrew (1747–53, Rastrelli and I. F. Michurin), with an iconostasis designed by Rastrelli and paintings by A. P. Antropov and T. K. Levitski-Nos. The former Imperial Palace (1752–55) was built by Rastrelli and Michurin and rebuilt in 1868–70 by K. Ya. Maevski. Buildings in the neoclassic style are the Rotunda over Askold's grave (1810, A. I. Melenski), the Contract Building in the Podol (1817, V. I. Geste), the Shevchenko University building (1837–43, V. I. Beretti), and the Institute for Young Girls of the Nobility (1838–42, V. I. Beretti, rebuilt in 1957). The Cathedral of St. Vladimir was erected in 1852–96 by the architects I. V. Shtrom, P. I. Sparro, A. V. Beretti, and others.

In the Soviet period monumental public buildings, housing developments, and sports arenas have been built. During the war of 1941–45 the city was badly damaged, but it has been reconstructed.

Museums: The Museum of Ukrainian Art (1899), the largest existing collection of Ukrainian art (14th–20th cent.); Museum of Russian Art (1922), ancient Russian painting and paintings by Russian artists of the 18th–20th century; Museum of Western and Oriental Art (1919); St. Sophia Museum (1934), mosaics and frescoes from St. Sophia and the Monastery of St. Michael (XIII, pl. 65); Museum of the Monastery of the Caves (1926); Historical Museum (1899), Scythian, classical, and Slavic antiquities and Ukrainian handicrafts of the 14th–19th century; and the Shevchenko Literary and Artistic Museum (1949).

Bibliog. D. Ainalov and E. Redin, Drevnie pamyatniki iskusstva Kieva (Ancient Art Monuments of Kiev), Kharkov, 1899; Kiïv ta yogo okolitsya v istoriï i pam'yatkakh (Kiev and Its Environs in History and Monuments), Kiev, 1926; Kiïv, Kiev, 1930; A. D. Radchenko, Gosudarstvenny arkhitekturno-istoricheski zapovednik "Sofiiski muzei": putevoditel' (State Architectural-Historical Depository — the Museum of St. Sophia: Guide), 2d ed., Kiev, 1952; Yu. S. Aseev, Drevni Kiev: X–XVIII vv. (Ancient Kiev: 1–th–18th Cent.), Moscow, 1956; M. K. Karger, Drevni Kiev (Ancient Kiev), 2 vols., Moscow, Leningrad, 1958–61; H. N. Logvin, Kievo-Pecherskaya lavra, Moscow, 1958; O. K. Kasimenko, et al., ed., Istoriya Kieva (History of Kiev), 2 vols., Kiev, 1959–60; I. A. Ignatkin, Kiev, Kiev, 1960; V. N. Lazarev, Mozaiki Sofi Kievskoi (Mosaics of St. Sophia of Kiev), Moscow, 1960; H. N. Loggin, Kiev, Moscow, 1960; I. N. Shumilin, Vospominanie o Kievo-Pecherskoi lavre (Reminiscence of the Kiev Pecherskaya Lavra), Munich, 1960; M. M. Shul'kevick, Kiev, 2d ed., Kiev, 1963.

Bakhchisarai. Situated in the valley of the Churuk-Su River, the town was founded at the end of the 15th century; in the 16th–18th century it was the capital of the Crimean khanate. The town is divided into a new part and an old part retaining its medieval layout and narrow streets. The Palace of the Khans (16th–18th cent., now the Palace Mus. includes the Ambassadors' Court and the Aleviz Portal (1503, architect Alevisio Novy), the Large Mosque (16th–18th cent.), the mausoleum in the cemetery of the Girei dynasty (17th–18th cent.), the Sary-Gyuzel baths (1533), the Golden Fountain (1733), and the Fountain of Tears (1764). The Bakhchisarai Palace Museum (1920) has a collection of medieval art.

On the western outskirts of the town is Eski-Yurta (the village of Podgorodneye) with mausoleums of the 14th–18th century; on the eastern outskirts is Salachike (the village of Starosele) with the mausoleum of Khaji-Girei and Mengli-Girei (1501) and the Zynjirli madrasah (1500). Nearby is the Monastery of the Assumption (15th–19th cent.), a cave complex. In the environs are the mausoleum of Djanik-Khanum (1337) and ruins of numerous medieval cave towns, fortresses, and monasteries of the 6th–15th century.

Bibliog. P. V. Nikol'ski, Bakhchisarai i ego okrestnosti (Bakhchisarai and Its Environs), 2d ed., Simferopol, 1927.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Kiev, plan. Inset: Center of the city in the 10th–11th century superimposed on the plan of the modern city. (Note: *a* and *g* in the inset are the same as *p* and *o* respectively on the plan.) *Key*: (1) Vladimir's city with the Podol Gate at the north, the gate toward Borichev at the southeast, and the Batya Gate at the south; (2) Yaroslav's city with the Lyadski Gate at the southeast, the Golden Gate at the south, and the Lvov Gate at the southwest. Principal monuments: (*a*) Cathedral of St. Sophia; (*b*) Church of St. Basil; (*c*) Church of St. Theodore Monastery; (*d*) Cathedral of St. Michael and Church of St. Demetrius; (*e*) Church of the Desyatina and court buildings; (*f*) Monastery of the Raising of the Cross; (*g*) Church of St. Andrew; (*h*) remains of stone walls and Church of St. George; (*i*) Palace and Church of St. Irina. Other monuments: (*j*) Monastery of the Caves (Pecherskaya Lavra); (*k*) former Imperial Palace; (*l*) Shevchenko State University; (*m*) Cathedral of St. Vladimir; (*n*) Theater of Opera and Ballet; (*o*) see *g*; (*p*) see *a*; (*q*) Old Kiev Academy and Contract Building in the Podol; (*r*) Florovski Monastery in the Podol; (*s*) Vydubetski Monastery; (*t*) Monastery of St. Cyril; (*u*) zoo. Suburbs: (*v*) Lukyanovka; (*x*) Solomyanka; (*y*) Kurenevka.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Chernigov. The town is situated on the right bank of the Desna River. One of the most ancient towns of the Ukraine, it was first mentioned in documents of 907; from 1024 it was the capital of the Chernigov principality. The main architectural monuments are: the Cathedral of the Transfiguration (ca. 1036), a three-aisled, five-domed building with two towers, with fragments of frescoes in the interior; the Cathedral of the Annunciation (built in 1186); the Cathedral of SS. Boris and Gleb (12th cent., rebuilt in the 17th cent., destroyed in 1941, restored in 1954–55, XIII, PL. 56); the Church of Good Friday (Paraskeva-Pyatnitsa, late 12th–early 13th cent., rebuilt in the 17th–18th cent., destroyed in 1941–43, restored in 1962, XIII, PL. 57); the Regimental Chancery (late 17th cent.), one of the finest monuments of the Ukrainian baroque style; the St. Catherine Church (1698–1705, restored in 1954–55); the College (1700–02); the episcopal palace (now housing the Archives; 1780, rebuilt in 1903); and the residence of the governor (1804–06, A. D. Zakharov). The Eletski Monastery includes the Cathedral of the Dormition (12th cent.), cells (16th cent.), and a refectory and bell tower (17th cent.); nearby is the Black Grave (a barrow over the burial of the reigning prince, 10th cent.). The Trinity Monastery in the Boldina Hills includes the Trinity Cathedral (1679–95, A. Zernikau), the refectory (17th cent.), the bell tower (1775–78), and the Church of St. Elias (12th cent.). During the Soviet period, and especially after World War II, the town has been enlarged and rebuilt. The Historical Museum (1896) has a collection of ancient Russian jewelry and Ukrainian art.

BIBLIOG. B. A. Rybakov, Drevnosti Chernigova (Antiquities of Chernigov), MIA, 11, 1949, pp. 7–93; I. A. Ignatkin, Chernigov, Moscow, 1955; M. T. Yatsura, Chernigov, 2d ed., Kiev, 1961.

Chernovtsy (Chernovitsy). The town is situated in the foothills of the Carpathian Mountains, on the right bank of the Prut River. In the 12th–13th century it was the ancient Russian town of Chern; it was first mentioned under its present name in 1408. It is the historical center of Bucovina (Bukovina). Of architectural interest are the wooden churches of the Bucovin type — St. Nicholas (1607), the Trinity (1774), the Dormition (1783), and Goryachi Urban in the suburbs (17th cent.); the Monastery at Gorechi (1767); the residence of the Bucovin metropolitans (now the University, 1864–73, I. Glavka); and the Theater (1904–05), F. Fellner and H. Helmer). Chernovtsy is a center of wood carving. The Historical-Ethnographical Museum (1940) has a collection of Slavic antiquities and objects of Bucovin applied art.

BIBLIOG. L. Novitski and B. Timoshchuk, Chernivtsi, Chernovtsy, 1959 (Eng. trans. in part, Washington, 1962).

Dnepropetrovsk (until 1926, Ekaterinoslav). The city is situated on both banks of the Dnieper River. It was founded in 1778. The city was laid out in 1790–92 by I. E. Starov. The Potëmkin Palace (1787–89, I. E. Starov, rebuilt in the 1830s, destroyed in 1942–43, restored in 1951–53), the Cathedral (1830–35, designs of 1806 by A. D. Zakharov), and the cloth factory (late 18th cent., F. I. Volkov) are in the Russian neoclassic style. In the Soviet period modern residential districts and public buildings have been constructed. The Art Museum (1914) has a collection of paintings by Russian and Ukrainian artists. The Historical Museum (1902) contains Scythian, Slavic, and Zaporozhe Cossack objects.

BIBLIOG. O. A. Shvidkovski, Dnepropetrovsk, Moscow, 1960.

Feodosiya (anc. Theodosia; Gr., Θεοδοσία). This Crimean seaport on the coast of the Black Sea was founded by the Greeks in the 6th century B.C.; as a classical town it lasted until the 4th century A.D. In the 13th–14th century it was the Genoese fortress town of Kaffa; from 1475 it was Turkish and from 1783 it was Russian. The old part of town preserves its medieval layout. Remaining from the Genoese period are the defensive walls and the following towers: Clement (1348), Dokov (14th cent.), Constantine (1382–1448), and Giovanni di Scapo (1342). The main churches are: St. John the Precursor (1348, interesting carving in stone), St. Stephen (14th cent.), St. John the Theologian (14th cent.), St. Sergius (14th cent.), and the Church of the Archangels (1408). The Mosque of Mufti-dzhami dates from 1623. Of the buildings from the 19th and the early 20th century, the villas on the coast (now sanatoriums) deserve special mention. The Aivazovski Picture Gallery (1880), housed in a building designed by the artist, includes about 400 works by Aivazovski. The Ethnographical Museum (1811) contains ancient and medieval art.

BIBLIOG. M. Malowist, Kaffa, Warsaw, 1947; N. Barsamov, Feodosiya, Simferopol, 1953; V. I. Balakhonov, Feodosiya, Simferopol, 1963; V. D. Blavatsli, EAA, s.v. Crimea.

Kamenets Podolski. The town was built on a picturesque plateau above the Smotrich River (a tributary of the Dniester); it was first mentioned in chronicles of 1062; in the 16th–18th century it was the largest stronghold in the Ukraine. Part of the tangled network of old streets with a market square in the center remain. The castle (15th–early 16th cent., rebuilt in the 17th–18th cent.) includes walls, towers (15th–17th cent.), and the drawbridge (14th–17th cent.). Other interesting buildings are the market square with the Magistracy (16th–18th cent.), a Russian town gate with fortifications (16th cent.), the Catholic Cathedral (16th cent.), and the tower of the Armenian Church (16th cent.). Churches: St. Nicholas (14th cent.), SS. Peter and Paul (15th and 16th cent.), and the wooden Church of the Exaltation of the Cross (Krestovozdvizhenski) at Karvarsary (1799). Monasteries: Franciscan (16th–18th cent.), Dominican (14th–18th cent.), and the Trinity (1747). There are stone houses of the 16th and 18th centuries. During the Soviet period the town has been enlarged and beautified. The Historical Museum (1890) has a collection of Slavic antiquities and objects of minor art.

BIBLIOG. P. Yurchenko, Kam'yanets'-Podil's'ka fortetsya (The Fortress of Kamenets Podolski), Kiev, 1950; T. M. Budyans'ka, Zamok Kam'yanets'-Podil's'komy (The Castle of Kamenets Podolski), Kiev, 1961.

Kanev. The town is situated on the right bank of the Dnieper River. From the 12th century it was known as a frontier town of Kievan Russia. The Cathedral of the Dormition (1144), an outstanding monument of ancient Russian architecture, has survived. Near the town is the Shevchenko Memorial Center.

BIBLIOG. Kanivs'ki derzhavni muzei-zapovidnik "Mogila T. G. Shevchenka" (The Museum-Depository of Kanev: the Shevchenko Tomb), Kiev, 1961; S. K. Kilesso, Kanev, Kiev, 1964.

Kerch (anc. Pantikapaion; Gr., Παντικάπαιον). This town on the straits of Kerch was founded by the Greeks in the 6th century B.C. under the name of Pantikapaion; from 480 B.C. to ca. A.D. 370 it was the capital of the Bosporan kingdom; in the 5th–10th century it was the Byzantine town of Bospor; in the 10th–11th century it was the Russian town of Korchev; in the 14th–15th century it was the Genoese fortress town of Cerchio; from 1475 it was the Turkish fortress town of Kerch; from 1774 it formed part of Russia. Important monuments of antiquity in and near the town include the Royal, Golden, Melek Chesmen, and Kul Oba tumuli (4th cent. B.C., VI, PL. 470, FIG. 854); many tombs, some with frescoes (VI, PL. 462; Demeter tomb, 1st–2d cent., VI, PL. 472); and remains of buildings on Mithridates Hill, where the acropolis of Pantikapaion was located (see also GRECO-BOSPORAN AND SCYTHIAN ART). A monument of medieval architecture is the Church of St. John the Precursor (10th–14th cent.) with fragments of frescoes. The Pushkin Historical and Archaeological Museum was founded in 1826.

BIBLIOG. F. Gusarov and L. Chuistova, Kerch', Simferopol, 1955; F. Tusarov, Kerch': istoriko-kraevedcheski ocherk (Kerch: Historical-Regional Essay), 2d ed., Simferopol, 1963; V. D. Blavatski, EAA, s.v. Crimea.

Kharkov. The city was founded in 1655 as a military outpost for defense against the Crimean Tatars and is at present a large industrial center. The major architectural monuments are: the Cathedral of the Intercession (1689), an outstanding example of Ukrainian architecture; the Cathedral of the Dormition (1771) and a bell tower in neoclassic style (1824–33, E. A. Vasilev); the old buildings of the University, including the Catherine Palace (1767–76), the University church (1823), and the chemistry and physics buildings (1820–23). During the Soviet period the city has been largely rebuilt, and many new structures have been erected (e.g., the House of Industry, PL. 252). The Historical Museum (1920) has a collection of primitive and Slavic art and of Ukrainian minor arts of the 17th–19th century. The Museum of Figural Art was founded in 1886.

BIBLIOG. A. M. Kas'yanov, Khar'kov, Kiev, 1950; O. F. Mikhailik, Khar'kovu 300 let (The Tercentenary of Kharkov), Kharkov, 1958.

Lvov (Leopoli; Ger., Lemberg; Pol., Lwów). The city, situated in the valley of the Peltev River, was founded in the 13th century. It is the historical center of Galicia and is now one of the important towns of the Ukraine. Ruins of the ancient citadel (the Tall Castle, 14th cent.) have been preserved. The center of the old town is the rectangular market place. There are many fine architectural monuments: the churches of St. Nicholas, of St. Onofrius, and of Good Friday (Paraskeva-Pyatnitsa) and the Catholic churches of St. Mary of the Snow and St. John the Precursor (both late 13th cent., greatly changed when rebuilt in the 16th–19th cent.). The Cathedral (1360–1493, by P. Shteker, I. Grom, and A. Rabish) is in Gothic style;

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the Campani Chapel (late 16th–early 17th cent., P. Rimlyanin) is Renaissance, and the Boimi Chapel (1609–17, G. Sholts) has rich carved decorations by A. Pfister. The Armenian church (1363–70, by Doring) was rebuilt in the 15th–17th century. The market square includes the Renaissance house of the Black Stone (2d half of 16th cent., P. Krasovski), the Renaissance Kornyakt House (now the Historical Mus., 1580, P. Barbon), and the Town Hall (1835). The complex of the Lvov Brotherhood includes the three-domed Church of the Dormition (1598–1631, P. Rimlyanin, A. Prikhilny, and V. Kupinos), the stately four-storied bell tower (the Kornyakt Tower, 1573–78, P. Barbon and P. Rimlyanin; fourth story added in 1672 by P. Beber), and the Chapel of the Three Prelates (1578, P. Krasovski); these constitute the finest example of Renaissance architecture in the Ukraine. The Bernardine monastery has a basilica decorated with baroque details and sculpture (1606–30, Rimlyanin and Prikhilny). The Royal Arsenal is now the Historical Archives (1635, P. Grodzinski). The Monastery of St. George has a cathedral in baroque style (1746–62, B. Meretin). The Dominican Cathedral is also baroque (1749, M. Urbanik and Ya. de Vitt). The Church of St. Nicholas (1763, formerly in the village of Krivki) is an example of wooden architecture. The Osolinski Palace (now the Public Lib., early 19th cent.) and the Old Theater (now the Zankovetski Theater, 1842, L. Pikhl) are in neoclassic style. The Theater of Opera and Ballet dates from 1897–1900 (Z. Gorgolevski). During the Soviet period industrial and residential building has been carried out and cultural centers, cinemas, and schools have been constructed.

Museums: Museum of Ukrainian Art (1905), icons (14th–17th cent.), portraits, and paintings (19th–20th cent., mainly by western Ukrainian artists); Picture Gallery (1907), Russian and European art; Museum of Ethnography and Handicrafts (1951); and Historical Museum (1898).

Bibliog. V. A. Vereshchagin, Stary L'vov (Old Lvov), Petrograd, 1915; T. Mańkowski, Lwowskie koscioli barockowe (Lvov's Baroque Churches), Lvov, 1932; Dovidnik po istorichnikh mistsyakh l'vivshchini (Guide to Historic Places in the Lvov Area), Lvov, 1954; Narisi istorii L'vova (Historical Sketches of Lvov), Lvov, 1956; S. M. Zemtsov, L'vov, Moscow, 1956; W. Mudra, ed., Lviv [Lvov]: A Symposium on Its 700th Anniversary, New York, 1962; A. Pashuk and I. Derkach, L'vov: Putevoditel' (Lvov: Guide), Lvov, 1963.

Neapol Skifski (Neapolis; Gr., Νεάπολις). Ruins on the southeastern outskirts of Simferopol. In the 3d–2d century B.C. this was an important artistic and commercial center and the capital of the Scythian kingdom in the Crimea. Neapol flourished particularly in the 2d century B.C. Its culture reflected its mixed Scythian and Greek character. Systematic excavations (since 1945) have brought to light a massive defensive wall with towers, parts of the urban districts, a necropolis, a mausoleum with rich burials of a king and nobles, and burial vaults with wall paintings of the 1st century of our era (see VI, col. 857). In the 3d–4th century the town declined as a result of invasions by the Huns.

Bibliog. P. N. Shul'ts and V. A. Golovkina, Neapol' Skifski, in Po sledam drevnikh kul'tur (On the Track of Ancient Cultures), I, Moscow, 1951, pp. 143–68; P. N. Shul'ts, Mavzolei Neapolya Skifskogo (Mausoleums of Neapol Skifski), Moscow, 1953; V. D. Blavatski, EAA, s.v. Crimea.

Odessa. Odessa, a seaport on the coast of the Black Sea, was founded in 1794 on the site of an ancient Russian settlement; later it was the site of the Tatar settlement of Khajibei, of a Turkish fortress (1764), and of a Russian fortress (1792). Monuments in the neoclassic style are the semicircular square (1826–31, A. I. Melnikov) with the Potëmkin Stairs (1837–41, F. K. Boffo), the old Stock Exchange (1829–34, Boffo and G. I. Torichelli), the Vorontsov Palace (1826–31, Boffo), the city hospital (1804–20, Thomas de Thomon), and the Pushkin house (early 19th cent.). Constructions in an eclectic style include the Theater of Opera and Ballet (1884–87, F. Fellner and H. Helmer), the new Stock Exchange (now the Philharmonic, 1895–98, A. I. Bernardatsi), and the public library (1905–07, F. P. Nesturkh). In Shevchenko Park are the remains of the fortress (1799) and the Lanzheron Arch (1830).

Museums: Archaeological Museum (1825), classical art from excavations at Olbia, Chersonesos, and other sites; Museum of Western and Oriental Art (1919); Picture Gallery (1899); and the Historical and Ethnographical Museum (1854).

Bibliog. M. M. Sinyaver, Arkhitektura staroi Odessy (Architecture of Old Odessa), Leningrad, 1935; Odessa: Kratki spravochnik-putevoditel' (Odessa: Short Manual-Guide), Odessa, 1956.

Pereyaslavl-Khmelnitski (until 1943, Pereyaslavl). This town on the Trubezh River (a tributary of the Dnieper) was first mentioned in 907 in a pact concluded between ancient Russia and Byzantium; in 1239 it was destroyed by the Tatars, then rebuilt in the 17th century. It has in general preserved its ancient radial layout. The ramparts (10th–17th cent.) of the citadel and the surrounding town survive, as well as remains of buildings from the 11th and 12th centuries. There are some buildings in the Ukrainian baroque style: the Church of St. Michael (1649) and its bell tower (17th cent.) and the Ascension Monastery with its Cathedral (1700), bell tower (1776), and college (18th cent.). The Historical Museum was founded in 1954.

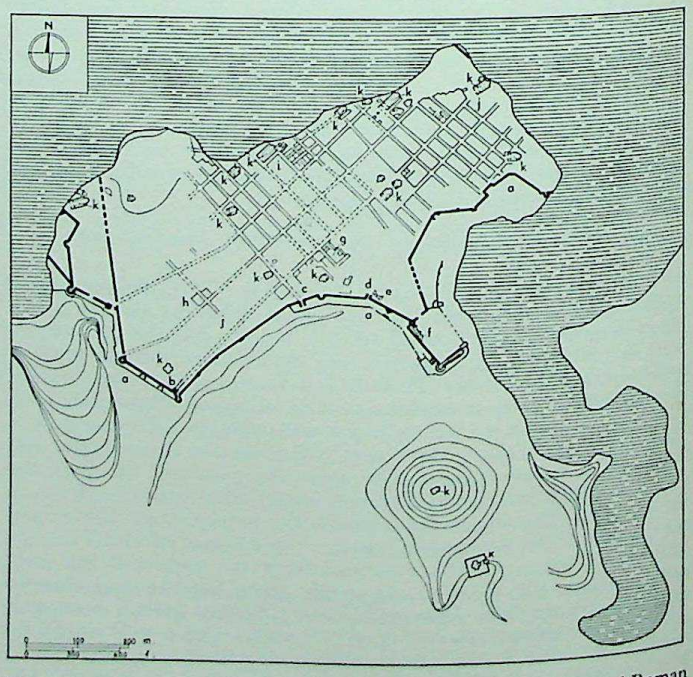
Bibliog. I. N. Dnestrov and I. A. Grabovski, Pereyaslav-Khmel'nitski, Kiev, 1954; Pereyaslav-Khmel'nitski i ego istoricheskie pamyatniki (Pereyaslavl-Khmelnitski and Its Historic Monuments), Kiev, 1954.

Poltava. The town is situated on the right bank of the Vorskla River (a tributary of the Dnieper). It was first mentioned in written sources of 1174. The town was destroyed in the early 18th century and replanned in 1804–05 by M. Ambrosimov. The Monastery of the Exaltation of the Cross (Krestovozdvizhenski) with its church (1689–1709) and bell tower (1786) is in the Ukrainian late baroque style. The Circular Square (1805–11) with eight radial streets, the Column of Glory (1805–11, architect Thomas de Thomon and sculptor F. F. Shchedrin), and other buildings in neoclassic style were built following standardized designs by A. D. Zakharov. Also of interest are the institution of charity (1820–23, M. Amvrosimov), the Institute for Girls of the Nobility (1832–40, L. I. Sharleman), and the Provincial Council (now the Ethnographical Mus., built in 1905–09, by V. G. Krichevski and others; interior wall paintings by S. I. Vasilkovski). The Art Museum, founded in 1918, has a collection of Ukrainian, Russian, European, and Oriental art. The Ethnographical Museum is dedicated to Ukrainian folk art.

Bibliog. Poltavshchina: Kratki dovidnik-putivnik (The Poltava Area: Short Guide-Manual), Kharkov, 1961.

Sevastopol (Sebastopol). This seaport on the southwestern coast of the Crimea was founded in 1784 near the citadel of Chersonesos, the town of classical antiquity. The city was destroyed twice (in 1854–55 during the Crimean War and in 1941–42). After World War II it was rebuilt according to a general plan of restoration and development (1946). The Count's Dock (1846) and the Church of SS. Peter and Paul (1848) are in neoclassic style. The Museum of the Black Sea Fleet was erected in 1895 and the Black Sea Aquarium in 1896. The building housing the panorama "Defense of Sevastopol in 1854–55" was opened in 1905 (painted by F. A. Rubo, destroyed in 1941; the painting was redone in 1948–54 under the direction of V. N. Yakovlev and P. P. Sokolov-Skal). The Picture Gallery (1927) has a collection of European, Russian, and Soviet paintings.

In the environs of Sevastopol is the ruined citadel of Chersonesos (5th cent. B.C.–14th cent. of our era) with defensive walls,



Chersonesos (near mod. Sevastopol), plan. (*a*) Greek, Hellenistic, and Roman city walls; (*b–d*) gates; (*e*) "barracks" (4th–3d cent. B.C.); (*f*) "barracks" (1st–3d cent. of our era); (*g*) mint; (*h*) Hellenistic houses; (*i*) necropolis (5th cent. B.C.); (*i*) main street; (*k*) Christian churches of the Byzantine period.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

towers (3d cent. B.C.–7th cent. of our era), remains of ancient buildings (a theater, 3d–2d cent. B.C., a mint, 4th–3d cent. B.C., and houses with mosaic floors) and medieval constructions (the Uvarov Basilica, 7th cent., the so-called "Basilica of 1935," 6th–10th cent., and six-piered churches of the 10th–13th cent.). The Inkermanski Monastery (10th–14th cent.) and the St. George Monastery (14th cent.) are located here. There are fortresses at Calamita (14th–15th cent.) and at Cembalo (14th cent., now the town of Balaklava). The Chersonesos Archaeological Museum (1860) houses a large collection of ancient and medieval art.

BIBLIOG. G. D. Belov, Khersones Tavricheski (Tauric Chersonesos), Leningrad, 1948; A. L. Yakobson, Srednevekovy Khersones: XII–XIV vv. (Medieval Chersonesos: 12th–14th Cent.; MIA, 17), Moscow, 1950; Yu. S. Aseev and G. A. Lebedev, Arkhitektura Kryma (Architecture of the Crimea), Kiev, 1961; E. G. Surov, Khersones Tavricheski (Tauric Chersonesos), Sverdlovsk, 1961; Z. F. Chebanyuk, Istoricheskie mesta i pamyatniki Sevastopol'ya (Historic Places and Monuments of Sevastopol), 3d ed., Simferopol, 1962; V. D. Blavatski, EAA, s.v. Crimea.

Uzhgorod. Situated on the Uzh River, the town dates back to the 8th–9th century; it is the historical center of Carpathian Ukraine. The old part of town has preserved its complex layout. The castle (14th–17th cent.) includes walls, bastions, and the palace (1598), now used to house the Ethnographical Museum and Picture Gallery. The Cathedral and episcopal palace date from 1646, a baroque church from 1757. On the outskirts of the town, in the village of Goryan, is the round Church of St. Anne (12th–15th cent.) with well-preserved Romanesque frescoes. In the environs of Uzhgorod are the Nevitski (13th–14th cent.) and Serednyanski (12th–16th cent.) castles. The Carpathian Ethnographical Museum (1948) and the Carpathian Provincial Picture Gallery (1948) are located here.

BIBLIOG. P. Sova, Arkhitekturni pam'yatniki Zakarpattya (Architectural Monuments of Transcarpathia), Uzhgorod, 1958; I. I. Il'nyts'ki, Uzhgorod, Uzhgorod, 1961.

Yuri ASEEV

MOLDAVIA (Moldavian S.S.R.). *Historical and artistic periods.* In the territory of Moldavia art has traditions dating back to ancient times (monuments of the Tripolje culture from the 3d millennium B.C. and finds of ornate weapons from the Borodinski treasure of the 2d millennium B.C.). In the formation of Moldavian medieval art the heritage of ancient Kievan Russia and the building activity of Genoese traders (fortresses of the 14th–15th cent.) were influential. When the independent state of Moravia was founded in 1359, miniatures and fresco painting developed, artistic embroidery and carving in wood reached a high level of achievement, and the local style of ecclesiastical building evolved (elongated plans, lancet window frames and doorframes, and the bell-shaped dome). During the Turkish domination (16th–18th cent.) Moldavian culture did not develop. However, there are isolated outstanding examples of architecture from this period (Cathedral in Orgeyev, 17th cent.), as well as decorative carving (church of the Dragomir Monastery, 17th cent.) and painting (frescoes in the Church of the Dormition at the village of Novye Kaushany, 18th cent.).

After the incorporation of part of Moldavia (1791) and Bessarabia (the area between the Dniester and Prut rivers, 1812) into Russia, Moldavian towns were given new layouts based on neoclassic principles, and Russian architects (e.g., A. I. Melnikov, 1784–1854) worked in Moldavia. In peasant architecture a type of beaten clay or stone house came to be used with a gallery along the main façade, whose small columns rested on a sharply jutting socle and supported the pitched roof.

In 1897, in Kishinev, a drawing school was founded in which the local artists worked (sculptor A. M. Plamadyala, 1888–1940, and others). During the Romanian occupation (1918–40) the art of Bessarabia followed modern trends, while the art of Soviet Moldavia during those years developed along lines of socialist realism.

After the union of Bessarabia with the U.S.S.R. and the formation of the Moldavian S.S.R. (1940) a national artistic school was formed. The major artists were the painters M. E. Gamburd (1903–54), A. A. Vasilev (b. 1907), and L. P. Grigorashenko (b. 1924) and the sculptors L. I. Bubinovski (b. 1910) and K. S. Kobizeva (b. 1906).

BIBLIOG. M. Ya. Livshits and A. M. Mansurova, Izobrazitel'noe iskusstvo Moldavskoi SSR (Art of the Moldavian SSR), Moscow, 1957; E. V. Zlatova and V. Kotelnikov, Puteshestvie po Moldavii, Moscow, 1957 (Eng. trans., Across Moldavia, Moscow, 1959); I. S. El'tman, Nekotorye arkhitekturnye pamyatniki Moldavii XIX veka (Some Architectural Monuments of 19th-Century Moldavia), Arkhitekturnoe nasledstvo, 11, 1958, pp. 43–52; M. Ya. Livshits, Iskusstvo Sovetskoi Moldavii, Ocherki: Zhivopis', Skul'ptura, Grafika (Art of Soviet Moldavia, Essays: Painting, Sculpture, Graphic Arts), Moscow, 1958; M. Livshits and L. Chezza, Izobrazitel'noe iskusstvo Moldavii: Ocherki (Art of Moldavia: Essays), Kishinev, 1958; E. Bainberg, Zhilishchnoe stroitel'stvo v Moldavii (Construction of Dwellings in Moldavia), Zhilishchnoe stroitel'stvo, 2, 1960, pp. 20–22; Izobrazitel'noe iskusstvo Moldavskoi SSR (Art of the Moldavian SSR), Kishinev, 1960 (cat.); K. D. Rodnin, Pamyatniki moldavskoi arkhitektury XIV–XIX vv. (Monuments of Moldavian Architecture, 14th–19th Cent.), Kishinev, 1960; A. I. Zakharov, Narodnaya arkhitektura Moldavii (Folk Architecture of Moldavia), Moscow, 1960; V. Strin'kovski, Moldaviya, Arkhitektura SSSR, 9, 1962, pp. 42–44; M. Berza, ed., Cultura moldovenească în timpul lui Ştefan cel Mare, Bucharest, 1964.

Art centers. Kishinev. The town was first mentioned in written sources in 1420. It has been the capital of the Moldavian S.S.R. since 1940. Kishinev is divided into the lower town, which has preserved its medieval layout, and the upper town, which has been built up since 1834 according to regular plans. During the Soviet period the town has been enlarged. The Mazarakiev Church dates from the 18th century. The Cathedral (1830–35) is by A. I. Melnikov, The Art Museum of the Moldavian S.S.R. and the Ethnographical Museum of the Moldavian S.S.R. are situated here.

BIBLIOG. E. V. Zlatova and V. Kotelnikov, Puteshestvie po Moldavii, Moscow, 1957 (Eng. trans., Across Moldavia, Moscow, 1959); V. Dement'ev, Ob arkhitekturnom oblike Kishineva (Concerning the Architectural Aspect of Kishinev), Sovetskaya Moldavia, Apr., 25, 1958; K. D. Rodnin, Pamyatniki moldavskoi arkhitektury XIV–XIX vv. (Monuments of Moldavian Architecture, 14th–19th Cent.), Kishinev, 1960.

Elena KOSTINA

ESTONIA (Estonian, Eesti; Estonian S.S.R.). *Historical and artistic periods.* The earliest monuments of architecture are forts surrounded by a moat and wooden wall; in the 12th century the first towns formed around them. It is likely that in the 10th–12th century the dwellings consisted of two parts: a living section and a barn. The leading crafts during this time were ceramics and metalwork. In the 13th century Estonia was conquered by the Germans and Danes. Until the 18th century Estonian art developed within the current of western European culture.

During the Middle Ages many powerful castles were constructed. At Tallin part of the town fortifications built in the 15th–early 16th century have survived, as well as a number of public buildings and houses. There are noteworthy medieval basilicas (14th–16th cent.) in Tallin and Tartu. The most widespread type of village ecclesiastical construction was the hall church with one or three aisles. Isolated examples of decorative sculpture, baptismal fonts, and funerary monuments still exist.

Of the relatively few architectural monuments from the Renaissance, the most interesting one is the façade of the House of the Black Heads in Tallin (1597; built by A. Passer, d. 1637). Passer was also a fine sculptor (funerary monument of P. de la Gardie in the Tallin Cathedral, 1595).

Buildings in the baroque style exist in the town of Narva. The most interesting monument of the baroque period is the Kadriorg Palace in Tallin. Excellent examples of wood carving remain: the best artists were E. Thiele, who executed part of the carved frieze (1674) of the Town Hall in Tallin, and C. Ackermann, who made the altar (1696) in the Tallin Cathedral after designs of the Swedish architect Nicodemus Tessin the Younger (1654–1728). The magnificent iconostasis for the Cathedral of the Transfiguration in Tallin (1720) was executed in the studio of the Moscow architect I. P. Zarudny (d. 1727).

Artistic life flourished during the 19th century. Edifices constructed in the neoclassic style include the main building of the University at Tartu and villas at Riisipere, Hõreda, and Saku. Russian sculptors worked in Estonia (funerary monument of Admiral S. Greigh, d. 1788, in the Tallin Cathedral, attrib. to I. P. Martos, 1752/54–1835; funerary monument of Barclay de Tolly at Jõgeveste, 1823, and monument to him at Tartu, 1849 — both by V. I. Demut-Malinovski, 1779–1846). Tartu became an important artistic center; in 1803 an art school was opened at the University under the direction of C. A. Senff (1770–1838). In the 1830s the xylographic workshop of L. Maydell (1795–1846) and the lithographic workshop of G. F. Schlater (1804–70) were founded.

In the second half of the 19th century architecture was eclectic. In the figural arts realistic tendencies spread and manifested themselves in the work of the German Baltic artists E. Dücker (1841–1916), G. Bochmann (1850–1930), and O. Hoffmann (1851–1912) and of the first artists of Estonian nationality — painters J. Köler (1826–99) and P. Raud (1865–1930) and sculptors A. Weizenberg (1837–1921) and A. Adamson (1855–1929).

At the beginning of the 20th century Art Nouveau influenced Estonian architecture (Vanemuine Theater at Tartu, 1906, and Estonia Theater at Tallin, 1913, both by the Finnish architect A. Lindgren (1874–1929). The first Estonian architects, G. Hellat (1870–

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1943) and K. Burman (b. 1882), utilized motifs of folk art in architecture. Local artistic life was promoted: A. Laikmaa (1866–1942) founded a studio-school at Tallin in 1903 and the graphic artist K. Raud (1865–1943) established one at Tartu in 1907; exhibitions of representational art were organized; and the Estonian Art Society was founded in 1907. Realistic art was permeated with social criticism (especially during the 1905–07 Revolution, when graphic art was used as political satire). During this period impressionism and Art Nouveau were influential. The major figures were A. Laikmaa, K. Mägi (1878–1925), and N. Triik (1884–1940).

From 1920 to 1940 Art Nouveau was gradually replaced by constructivist tendencies in architecture. A significant role was played by modern trends in the figural arts, especially during the 1920s, but realism continued to develop. Among the leading figures of this period were painters A. Jansen (1881–1957), A. Vabbe (1892–1961), A. Vardi (b. 1901), and Adamson-Eric (b. 1902); graphic artists G. Reindorff (b. 1889) and E. Viiralt (1898–1954); and sculptors J. Koort (1883–1935), A. Starkopf (b. 1889), and M. Saks (1902–62).

After World War II the destroyed towns were rebuilt and new towns were founded. Modern architecture is characterized by a simple and clear distribution of masses and sober, light forms. In figural art socialist realism dominates. The leading artists include painters Adamson-Eric, R. Treuman (b. 1910), V. Karrus (b. 1913), E. Kits (b. 1913), R. Sagrits (b. 1910), R. Uutmaa (b. 1905), J. Võerahansu (b. 1902), E. Okas (b. 1915), and I. Kimm (b. 1920); graphic artists G. Reindorff, A. Bach (b. 1901), E. Einman (b. 1913), R. Kaljo (b. 1914), O. Kangilaski (b. 1911), and L. Ennosaar (b. 1920); and sculptors A. Starkopf, E. Roos (b. 1908), A. Kaasik (b. 1908), O. Männi (b. 1925), E. Kirs (b. 1920), and E. Taniloo (b. 1923). An important place in the artistic culture is occupied by the minor arts: glass (M. Roosma, b. 1909), textiles (M. Adamson, b. 1908), ceramics (M. Rääk, b. 1907), leather (Adamson-Eric and E. Reemets, b. 1910), metal (L. Elken, b. 1924), and furniture (E. Velbri, b. 1902, and B. Tomberg, b. 1925).

The dwelling of the Estonian peasant remained until the beginning of the 19th century the combined house and barn, almost always unadorned. The artistic imagination of the people manifested itself mainly in folk art, particularly textiles and wooden objects. Until the mid–18th century geometric ornament was mostly used; later, plant ornamentation became widespread. Noteworthy are the carved wooden animal heads adorning harnesses and beer jugs.

BIBLIOG. A. Buchholtz, Goldschmiedearbeiten in Livland, Estland und Kurland, Lübeck, 1892; W. Neumann, Werke mittelalterlicher Holzplastik und Malerei in Livland und Estland, Lübeck, 1892; R. Guleke, Alt-Livland: Mittelalterliche Baudenkmäler Liv-, Est-, Kurlands und Oesels, Leipzig, 1896; W. Neumann, Baltische Maler und Bildhauer des 19. Jahrhunderts, Riga, 1902; W. Neumann, Lexikon Baltischer Künstler, Riga, 1908; K. von Löwis of Menar, Burgenlexikon für Alt-Livland, Riga, 1922; H. Pirang, Das baltische Herrenhaus, 3 vols., Riga, 1926–30; M. Laarman, Eesti Kujutavate Kunstnikkude Keskühingu viis aastat (The First Five Years of the Central Association of Estonian Artists), Tallin, 1927; H. Kjellin, Die Hallenkirchen Estlands und Gotland, Årsberättelse K. humanistiska vetenskapssamfundet i Lund, 1928–29, pp. 1–38; H. Kjellin, Die Kirche zu Karris auf Oesel und ihre Beziehungen zu Gottland, Lund, 1928; M. Laarman, Uue kunsti raamat (Book of New Art), Tallin, 1928 (Estonian, Ger., and Fr.); J. Gahlnbäck, Zinn und Zinngiesser in Liv-, Est- und Kurland (Quellen und Darstellungen zur Hansischen Geschichte, N.S., 7), Lübeck, 1929; H. Loeffler, Die Grabsteine, Grabmäler und Epitaphien in den Kirchen Alt-Livlands (Abh. Herder-Gesellschaft und das Herder-Inst. zu Riga, III, 2), Riga, 1929; A. Friedenthal, Die Goldschmiede Revels (Quellen und Darstellungen zur Hansischen Geschichte, N.S., 8), Lübeck, 1931; A. Vaga, Eesti kunsti ajalugu (History of Estonian Art), I, Tartu, 1932; R. Paris, L'art estonien: Peinture, sculpture, arts appliqués, Tartu, 1935; R. Paris, Uuem eesti kunst: Äärjooni eesti maali- ja raidkunsti arengust XIX ja XX sajandil (Recent Estonian Art: Outlines of the Development of Estonian Painting and Sculpture of the 19th and 20th Centuries), Tartu, 1935; S. Karling, Narva: Eine baugeschichtliche Untersuchung, Tartu, Stockholm, 1936; A. Tuulse, Die Kirche zu Karja und die Wehrkirchen Saaremaas, Õpetatud Eesti Seltsi Aastaraamat, 1938, pp. 52 ff.; A. Tuulse, Viljandi ordulossi kapiteelid (The Capitals of the Castle of the Order at Viljandi), Õpetatud Eesti Seltsi Toimetised, XXX, 1938, pp. 755–69; S. Karling, Gotland och Estlands medeltida byggnadskonst, Rig, XXII, 1939, pp. 65–114; V. Vaga, Eesti kunst (Estonian Art), Tartu, Tallin, 1940; A. Tuulse, Die Burgen in Estland und Lettland, Dorpat, 1942; S. Karling, Holzschnitzerei und Tischlerkunst der Renaissance und des Barocks in Estlands, Dorpat, 1943; S. Karling, Medeltida träskulptur i Estland, Stockholm, 1946; B. Berthelson, Studier i birgittinerordens byggnadsskick, I: Anläggnigsplanen och dess tillämpning (K. Vitterhets H. och Ant. Akad. Handlingar, LXIII), Stockholm, Lund, 1947, pp. 407–54; V. Vaga, Vene arhitektide ja skulptorite teoseid baroki- ja klassitsismi-ajajärgust Eestis (Works of Russian Architects and Sculptors in Estonia in the Baroque and Classic Periods), Tartu, 1947 (Rus. and Fr. summaries); S. Karling, Baltikum och Sverige (K. Vitterhets H. och Ant. Akad. Handlingar, LXV), Stockholm, 1948, pp. 7–137; A. Tuulse, Die spätmittelalterliche Steinskulptur in Estland und Lettland, Helsinki, 1948; H. Kuma, Eesti NSV tarbekunst (Artistic Handicrafts of the Estonian SSR), Tallin, 1955; H. Linnus, Tikand eesti rahvakunstis, I: Põhja-Eesti ja saared (Embroidery in Estonian Folk Art, I: Northern Estonia and the Islands), Tallin, 1955; I. P. Solomokova, Estonskaya demokraticheskaya grafika perioda revolyutsii 1905–07 godov: v. satiricheskikh zhurnalakh (Estonian Democratic Graphic Art of the Revolutionary Period 1905–07: in Satirical Journals), Tallin, 1955; L. Soonpää, 15 aastat Nõukogued Eesti kunsti: Katalog (15 Years of Soviet Estonian Art: Cat.), Tallin, 1955; H. Kuma, ed., Vystavka prikladnogo iskusstva Estonskoi SSR: Katalog (Exhibition of Applied Arts of the Estonian SSR: Cat.), Tallin, 1956; A. Kyunnap and Sh. Yassmann, ed., Dekada estonskogo iskusstva i literatury v Mosvke: 1956 (A Decade of Estonian Art and Literature at Moscow: 1956), Tallin, 1956 (cat.); H. Lyati and E. Myagi, Realisticheskoe iskusstvo v Estonii: s XIX veka do nastoyashchego vremeni (Realistic Art in Estonia: From the 19th Century to Today), Tallin, 1956; I. Solomokova et al., Eesti kujutav kunst (Estonian Art), Tallin, 1956; B. Bernstein and L. Gens, Izobrazitel'noe iskusstvo Estonskoi SSR (Fine Art of the Estonian SSR), Moscow, 1957; H. Üprus, Barclay de Tolly mausoleum, Tallin, 1957 (Eng., Rus., and Estonian); V. Vaga, Problema prostranstvennoi formy v srednevekovoi arkhitekture Latvii i Estonii (The Problem of Spatial Form in the Medieval Architecture of Latvia and Estonia), Tartu, 1960 (Estonian and Ger. summaries); M. Eller, Nõukogude Eesti ajaloolis-revolutsiooniline maal (Historical-Revolutionary Painting of Soviet Estonia) (Tartu Riikliku Ülikooli Toimetised, 114), Tartu, 1961; H. Kuma, Prikladnoe iskusstvo Sovetskoi Estonii i ego mastera (Applied Arts in Soviet Estonia and Their Masters), Leningrad, Moscow, 1962; E. and H. Thomson, Dome, Kirchen und Klöster im Baltikum, Frankfurt am Main, 1962; H. Läti, Eesti graafiki (Estonian Graphic Art), Tallin, 1963.

Art centers. Tallin (Tallinn; Rus., Revel; Ger., Reval) is the capital of the Estonian S.S.R. There is evidence that it was an Estonian settlement in the 11th century. It was first mentioned in written sources in 1154. From 1918 to 1940 it was the capital of the country of Estonia. It consists of an upper part, Toompea (Vyshgorod), situated on a hill, and a lower part. The medieval part of the city has preserved its irregular network of streets. Interesting architectural monuments are: the medieval castle of the Teutonic Knights (radically rebuilt) with the "Long Hermann" Tower (ca. 1500); the city walls (14th–16th cent.) with the "Kiek in de Kök" and "Fat Margaret" towers; the Town Hall, Major Guild, and Guild of St. Olaf (all early 15th cent.); the Cathedral, later the Lutheran church (13th–15th cent., with a tower of 1799); the churches of St. Olaf (Oleviste kirik; 13th–16th cent.) and of St. Nicholas (13th–16th cent.); and the House of the Black Heads (façade 1597, architect A. Passer). The Kadriorg Palace was begun in 1718 by N. Michetti and M. G. Zemtosov; it now houses the Tallin Art Museum.

BIBLIOG. C. von Löwis of Menar, Die städtische Profanarchitektur der Gotik, der Renaissance und des Barocco in Riga, Reval und Narva, Lübeck, 1892; E. von Nottbeck and W. Neumann, Geschichte und Kunstdenkmäler der Stadt Reval, II, Reval, 1899; W. Neumann, Riga und Reval, Leipzig, 1908; S. Karling, Die Marienkapelle an der Olaikirche in Tallinn und ihre Bildwerke, Õpetatud Eesti Seltsi Aastaraamat, 1935, pp. 97–159; A. Tuulse, Zur Baugeschichte der Tallinner Burg, Õpetatud Eesti Seltsi Aastaraamat, 1935, pp. 41–96; N. von Holst, Das alte Reval, Reval, 1942; E. Ederberg et al., Tallinn, Tallin, 1958; V. Vaga, Tallinna keskaegne elamu (Medieval Dwellings at Tallin) (Tartu Riikliku Ülikooli Toimetised, 87), Tartu, 1960.

Tartu (Rus., Derpt, Yur'ev; Ger., Dorpat). The town was founded in 1030 on the site of an ancient Estonian settlement as the Russian fortress of Yur'ev. The most important buildings are: the Cathedral of the upper town (13th–15th cent.); Church of St. John (14th cent.); City Hall (1789, J. H. B. Walter); and the University (1809, J. W. Krause). The Tartu Art Museum and the Museum of Classical Antiquities of the Tartu University are located here.

BIBLIOG. R. Otto, Über die Dorpater Klöster und ihre Kirchen, Dorpat, 1910; K. Lajgna et al., Tartu: Universitetski gorod (Tartu: University City), 2d ed., Tartu, 1956; H. Üprus, Tartu Riikliku Ülikooli peahoone (The Central Building of the State University of Tartu), Tallin, 1959 (Eng., Rus., and Estonian); J. Raid, Tartu, Tallin, 1960 (Eng., Ger., and Rus.).

Vol'demar VAGA

LATVIA (Lettish, Latvija; Latvian S.S.R.). *Historical and artistic periods.* An artistic culture of the forebears of the Lithuanian and Latvian tribes existed in the territory of Latvia in the 2d millennium B.C. (pottery, items of wood and amber), and wooden structures came to be widespread (neolithic site near Sārnate). The earliest hill fortifications (*pilskalns*) belong to the 1st millennium B.C. In the first centuries of our era the crafts of pottery, metalwork, and cloth weaving were widely developed. Geometric ornamentation predominated in decoration. In the 10th–12th century the first towns (Jersika, etc.) were founded, which were dependent on Russian principalities.

At the end of the 12th century and during the 13th, Latvia was seized by German Crusaders and united with Estonia under the name of Livonia. During this time buildings of limestone in Romanesque style were erected (castle and church at Ikšķile, late 12th cent.; castle at Koknese, early 13th cent.). In the 13th century new towns arose (Riga, etc.), and the local version of Gothic architecture was

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

developed, distinguished by simple forms and massive constructions of brick and rough stone (Cathedral in Riga, begun 1215; church in Valmera, 1283). In 1330–1550 the Gothic style reached its peak with lighter constructions and rich decoration (altar of the Church of St. Peter, 1408–09, in Riga; pediment and vaults of the Church of St. John, late 15th–early 16th cent., in Riga). A few works of figural art have survived (mainly memorial and religious sculpture).

In the 16th–17th century the ideas of Humanism penetrated into Latvia and later those of the Counter Reformation, particularly in architecture, in which elements of the northern European mannerist style appeared (addition to the Church of St. John in Riga, 1587–89). Decoration was very important, and was often polychrome (façade of the House of the Black Heads in Riga, 1620, destroyed during World War II; churches at Zlēku and Ēdole, both mid-17th cent.).

In the second half of the 17th century baroque came to be the leading trend in architecture (façade and tower of the Church of St. Peter in Riga, 1689–92, R. Bindenšū; Danenštern house in Riga, 1696). During the period of the apogee of the baroque (1700–70) façades were restrained, with little decoration, but the interiors were richly adorned (church in Apriki, 1710; Trinity Church in Lepaya, 1742–58; church at Pasiena, 1761). Funerary monuments in church interiors testify to the high degree of workmanship attained by the baroque sculptors and carvers. The most important civil edifices in baroque style (e.g., palace at Rundale, begun 1736; palace at Yelgava, begun 1738) were built by B. F. Rastrelli (1700–71).

With the end of feudalism the neoclassic style was established (1770–1840). The architecture of the late 18th century was marked by compactness of composition and refinement in details (three-storied houses in Riga and the church at Katlakalns near Riga, 1791–92, all by K. Haberland, 1750–1803). Between 1721 and 1795 the territory of Latvia was gradually reunited to Russia. Cities were rebuilt and towns planned under the influence of Russian neoclassicism (reconstruction of the citadel and its environs according to a plan of 1769 and the erection of the Warehouse, 1828–32, both in Riga; construction of the fortress at Daugavpils, 1810), and many country estates were erected (palace at Eleja, ca. 1800, G. Quarenghi; palace at Kazdanga, early 19th cent., J. G. Berlitz). In peasant architecture, generally constructed in wood, three types of dwellings predominated: two- or three-storied houses and houses with barns and baths. The wood carvings, painted chests, and pottery produced by the people were notable.

In the second half of the 19th century a national Latvian art began to form. Graduates of the St. Petersburg Academy of Fine Arts included the Latvian painters K. Hūns, 1830–77, and J. Fedders, 1838–1909, the graphic artist A. Daugulis, 1830–99, and the architect J. Baumanis, 1834–91.

At the end of the 19th century and the beginning of the 20th, Latvian art took on clearly defined aspects. Realism was promoted by the Rūķis (Toiler) Group, which included the painters J. Rosentāls (1866–1916), V. Purvīts (1872–1945), and Ā. Alksnis (1864–97) and the sculptors G. Šķilters (1874–1954) and T. Zaļkalns (b. 1876). In architecture an original national style was sought within the context of Art Nouveau (houses in Riga by architect E. Laube, b. 1880). The revolutionary events of 1905–07 and 1917 found expression in the work of a whole series of Latvian artists (caricatures by J. R. Tillbergs, b. 1880; posters by A. Apsītis, 1880–1914; and monuments by T. Zaļkalns and K. Zāle, 1888–1942).

From 1920 to 1940 neoclassic (F. Skujiņš, 1890–1957) and functionalist (E. Stalbergs, 1883–1958) tendencies spread. Modernist influences grew stronger in figural art; however, the leading artists remained faithful to the realistic tradition. Especially noteworthy was monumental sculpture (the architectural and sculptural ensemble of the Brethren Cemetery in Riga, 1925–29, sculptor K. Zale, and architect A. Birzenieks, b. 1894).

In the Soviet period (since 1940), and especially after World War II, extensive reconstruction and rebuilding of destroyed towns was undertaken. In recent years the development of architecture has been based on the mass construction of houses and community buildings according to standardized designs. A local construction industry has been created. Towns are built with open-plan micro-communities. In the villages modern kolkhoz and sovkhoz settlements are being built.

Figural art in the Soviet period follows the path of socialist realism. Major artists of the older generation are: painters J. R. Tillbergs; O. Skulme, b. 1889; V. Kalnroze, b. 1894; and E. Kalniņš, b. 1904 (PL. 249); graphic artist A. Junkers, b. 1899. Contemporary themes are present in the work of younger artists: E. Iltners, b. 1925; J. Osis, b. 1926; I. Zariņš, b. 1929; and B. Bērziņš, b. 1930. The minor arts are flourishing: ceramics, weaving, wood carivng, amber-work, metalwork, and stained glass.

BIBLIOG. W. Neumann, Grundriss einer Geschichte der bildenden Künste und des Kunstgewerbes in Liv-, Est- und Kurland vom Ende des 12. bis zum Ausgang des 18. Jahrhunderts, Reval, 1887; W. Neumann, Werke mittelalterlicher Holzplastik und Malerei in Livland und Estland, Lübeck, 1892; W. Neumann, Baltische Maler und Bildhauer des 19. Jahrhunderts, Riga, 1902; W. Neumann, Lexikon Baltischer Künstler, Riga 1908; W. Neumann, Aus alter Zeit, Riga, 1913; K. von Löwis of Menar, Burgenlexikon für Alt-Livland, Riga, 1922; R. Suta, 60 Jahre lettischer Kunst, Leipzig, 1923; J. Dombrowskis, Latvju māksla (Latvian Art), Riga, 1925; H. Pirang, Das baltische Herrenhaus, 3 vols., Riga, 1926–30; H. Loeffler, Die Grabsteine, Grabmäler und Epitaphien in den Kirchen Alt-Livlands vom 13.–18. Jahrhundert (Abh. Herder-Gesellschaft und das Herder-Inst. zu Riga, III, 2), Riga, 1929; V. Purvīts, Mākslas vēsture (History of Art), 3 vols., Riga, 1934; R. Vipers, Baroque Art in Latvia, Riga, 1939; B. Vipers, L'art letton: Essai de synthèse historique, Riga, 1940; A. Tuulse, Die Burgen in Estland und Lettland, Dorpat, 1942; A. Tuulse, Die spätmittelalterliche Steinskulptur in Estland und Lettland, Helsinki, 1948; P. Campe, Lexikon liv- und kurländischer Baumeister, Bauhandwerker und Baugestalter von 1400–1850, 2 vols., Stockholm, 1951–57; P. Campe, Glockengerüste und Glockentürme der Landkirchen und Friedhöfe Lettlands, Bonn, 1955; M. Ivanov, ed., Izobrazitel'noe iskusstvo Latviiskoi SSR (Fine Art of the Latvian SSR), Moscow, 1957; E. Kishe, Segodnya v Latvii (Latvia Today), Arkhitektura SSSR, 10, 1957, pp. 13–18; Latvijas RSR architekturas mantojums: Rakstu krājums (Architectural Heritage of the Latvian SSR: Collection of Writings), I, Riga, 1958; M. L. Ivanov, Iskusstvo Latvii (Art of Latvia), in Vseobshchaya istoriya iskusstv (Universal History of Art), II, 1, Moscow, 1960, pp. 490–95; V. Vaga, Problema prostranstvennoi formy v srednevekovoi arkhitekture Latvii i Estonii (The Problem of Spatial Form in the Medieval Architecture of Latvia and Estonia), Tartu, 1960 (Estonian and Ger. summaries); K. Zemdega, Latviešu padomju tēlniecība (Sculpture of Soviet Latvia), Riga, 1960; A. Lapiņš, Latviešu padomju gleznieciba (Painting of Soviet Latvia), Riga, 1961 (Rus., Eng., and Fr. summaries); M. Stepermanis, Latviešu tautas māksla (Latvian Folk Art), I, Riga, 1961 (Rus. and Eng. summaries); E. and H. Thomson, Dome, Kirchen und Klöster im Baltikum, Frankfurt am Main, 1962; Yu. Vasil'ev et al., Latviya, Arkhitektura SSSR, 9, 1962, pp. 34–37.

Art centers. Riga. Capital of the Latvian S.S.R. The town was first mentioned in chronicles of 1201. It is divided into the old town, which has preserved its medieval layout and borders the Daugava (Dvina) River, and the new town, laid out on a regular plan in the 17th–19th century. Most of the multistoried buildings are from the second half of the 19th to the first half of the 20th century. Noteworthy medieval constructions are: Riga Castle (begun 1330, later rebuilt); Cathedral (begun 1215); Church of St. Peter, first mentioned in 1209 (enlarged 1408–09); and Church of St. John, first mentioned in written sources in 1297 (rebuilt late 15th or early 16th cent., with a mannerist addition of 1587–89). Baroque houses include the Reitern (1685, R. Bindenšū) and Danenštern (1696) houses. The Church of SS. Peter and Paul in the Citadel (1780–86, S. Seege), the church at Katlakalns (1791–92, K. Haberland), and the Warehouse (Pakhaus, 1828–32) are in neoclassic style. Additional public buildings have been constructed in the Soviet period. The Brethren Cemetery (1925–29) contains works by the sculptor K. Zāle and the architect A. Birzenieks.

Museums: Riga State Museum (18th cent.) in the Dom Monastery; Museum of Latvian and Russian Art (1919); Museum of Decorative Art, European paintings and minor arts; State Museum of Folk Crafts, an open-air museum situated on Lake Yugla, with a remarkable display of folk architecture and furnishings.

BIBLIOG. C. von Löwis of Menar, Die Städtische Profanarchitektur der Gotik, der Renaissance und des Barocco in Riga, Reval und Narva, Lúbeck, 1892; W. Neumann, Das mittelalterliche Riga: Ein Beitrag zur Geschichte der norddeutschen Baukunst, Berlin, 1892; Riga und seine Bauten, Riga, 1903; W. Neumann, Riga und Reval, Leipzig, 1908; F. A. Balodis and R. Šnore, Senā Rīgā, Riga, 1937; P. Campe, Der Stadt-, Kunst- und Werkmeister Rupert Bindenschu und seine Wirksamkeit in Riga, Riga, 1944; A. K. Krumin', Riga, Moscow, 1947; N. von Holst, Riga und Reval, Hameln, 1952; E. Kiše and L. Plaucinš, Rīgas architekturas pieminekli (Riga's Architectural Monuments), Riga, 1956; J. L. Petri, Reisebeschriebung (1809), Hamburg-Rahlstedt, 1960; Yu. Vasil'ev, Klassitsizm v arkhitekture Rigi: Ocherk istorii planirovki i zastroiki Rigi v konste XVIII–nachale XIX vv. (Classicism in the Architecture of Riga: Historical Essay on the Planning and Building of Riga from the Late 18th to the Early 19th Cent., Riga, 1961.

Daugavpils (Rus., Dvinsk; Ger., Dünaburg). The town has existed since 1277 and was built around a castle of the Teutonic Knights, 11 mi. from the new town founded in 1582. The fortress was begun in 1810 and completed in 1833. An ethnographical museum is located here.

BIBLIOG. I. N. L'vov, Krepost'-sklad Dvinsk: Istoricheskaya spravka (The Fortress-Repository of Dvinsk: Historical Information), Dvinsk, 1914; J. Šteimanis, Daugavpils v proshlom i nastoyashchem (Daugavpils in Past and Present), Riga, 1959.

Tsesis (Latvian, Cēsis; anc. Rus., Kes; Rus., Venden; Ger., Wenden). The town dates from the beginning of the 13th century. The Castle (13th–16th cent.) now houses the ethnographical museum. The Church of St. John was erected in the 1280s and rebuilt in the mid-19th century.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

BIBLIOG. J. von Sivers, Wenden, Riga, 1857; G. von Sehrwald, Wenden: Eine Studie zur baltischen Architektur und Denkmalpflege . . . , Jhb. der bildenden Kunst in den Ostseeprovinzen, VII, 1913, pp. 7–54; A. Anspaks, Tsesis, Riga, 1960.

Ventspils (Rus., Vindava; Ger., Windau). The town, known since 1378, has a castle of the Teutonic Knights (ca. 1290) and a Lutheran church (1834–35, Johann de Witte).

BIBLIOG. J. Sviestiņs, Ventspils, Ventspils, 1934.

Yelgava (Latvian, Jelgava; Rus., Mitava; Ger., Mitau). The settlement began as a fortress of the Livonian Knights. In 1562–1795 it was the residence of the Kurland dukes. The Church of St. Anne is from 1573–1641. The Biron Palace (begun 1738) was built by B. F. Rastrelli. S. Jensens constructed the Peter Academy (1775). An ethnographical museum is located here.

BIBLIOG. F. Woischwill, Mitau und Umgebend der Kurischen Herzogsschlössern in Wort und Bild, Riga, 1913; N. Kaune, Veca Jelgava (Old Yelgava), Riga, 1939.

Yuri VASILEV

LITHUANIA (Lithuanian, Lietuva; Rus., Litva; Lithuanian S.R.R.). *Historical and artistic periods.* The oldest settlements in the territory of Lithuania belong to the Mesolithic period (9th–5th millennium B.C.). Dating from the Neolithic period (4th–2d millennium B.C.) are objects of amber and pottery with geometric ornamentation. During the 1st millennium B.C. clan communities built hill forts (*piliakalniai*). Silver and bronze necklaces, bracelets, and fibulae became widespread at the beginning of the Christian Era. During the early feudal period (9th–12th cent.) and at the time of the formation of the Lithuanian state (13th cent.) wooden castles of feudal overlords were built on the sites of the ancient hill forts.

In the 13th century, and especially in the 14th and 15th centuries, stone castles were built for defense against the Crusaders and the Tatars (at Kaunas, Medininkai, Vilnius). The castles were rectangular or polygonal in plan. In the 13th century they were built without towers; in the 14th century, with one or two towers; and with the introduction of firearms, with towers at every corner of the castle. Around the castles, towns with defensive walls and town halls on market squares arose. The main streets had brick houses and public buildings whose façades, at the end of the 15th and in the 16th century, were crowned by Gothic decorative pediments (Perkūnas house in Kaunas). After Catholicism was established in Lithuania (1387) churches in the Gothic style were constructed as a rule without towers (St. Nicholas in Vilnius, ca. 1440; St. George in Kaunas, 2d half of 15th cent.; and the church in Zapyškis, 16th cent.). The two-towered Church of St. Anne in Vilnius (1500–81) is very ornate. Many churches were fortified (Bernardine church in Vilnius, 16th cent.).

In peasant architecture simple and functional types of timber-frame buildings were built (from the 19th cent. also in brick, clay, and wood): isbas, barns, sheds for animals, and baths.

In the 16th century, owing to the cultural ties with Italy, the Netherlands, and Germany, Renaissance tendencies penetrated into Lithuania, manifesting, themselves in architecture (buildings decorated in Renaissance style, such as the house at 4 Gorky Street, 16th cent., and the Church of St. Michael, 1594–1625, both in Vilnius), in the icon of the *Madonna of the Dawn Gate* (Aušros vartų madona, 2d half of 16th cent.), and in miniatures and engravings.

In the 17th and 18th centuries many baroque churches, monasteries, and palaces were built, profusely decorated with sculpture and painting. In the 18th century a type of church evolved with two tall towers pierced by apertures and a façade with rich, sculptural decorative effects (Church of St. Catherine in Vilnius). In the 17th century the mural paintings of the monastery at Pažaislis near Kaunas were executed (artists Delbenē, Michelarcangelo Palloni, and others), as well as the sculptural decoration of the Church of SS. Peter and Paul (Italian sculptors Pietro Peretti and Giovanni Maria Galli and local sculptors) in Vilnius. Berween 1760 and 1780 buildings in the neoclassic style were erected. (J. B. Knackfuss, d. 1794, and L. Stuoka-Gucevičius, 1753–98); this style dominated until the 1830s.

After the incorporation of Lithuania into Russia (1795) its art drew close to that of Russia. An important role in the founding of the new Lithuanian representational art was played by the Vilnius Art School (1793–1831), directed by exponents of neoclassicism — architect L. Stuoka-Gucevičius (PL. 240), painter F. Smuglevičius (1745–1807), and sculptor K. Jelskis (1782–1867). Artists who received their training at the Art School were V. Vankavičius (1799–1842), V. Smakauskas (1797–1836), and K. Ruseckas (1800–60).

Beginning in the 1830s, eclecticism predominated in architecture. Between 1850 and 1860 the figural artists turned to critical realism. The Vilnius School of Drawing (1866–1912), under the direction of the Russian artist I. P. Trutnev (1827–1912), was influential in spreading this style. In 1907 the Lithuanian Artistic Society was founded; it promoted exhibitions of national art. Important during this period were such figures as the romantic painter M. K. Čiurlionis (1875–1911), A. Žmuidzinavičius (b. 1876), and the realistic sculptors J. Zikaras (1881–1944) and P. Rimša (1881–1961). Traditional tendencies continued in architecture from 1919 to 1940, and constructivism developed (V. Dubeneckis, 1888–1932; V. Zemkalnis-Landsbergis, b. 1893). The Kaunas Art School, founded in 1922 by the painter J. Vienožinskis (1886–1960), acted as a center for the leading realist artists: painters A. Žmuidzinavičius, P. Kalpokas (1880–1945), K. Šklėris (1876–1932), and J. Šileika (b. 1883); sculptors V. Grybas (1890–1941) and Juozas Mikėnas (b. 1901); and graphic artists S. Žukas (1904–46) and M. Bulaka, b. 1907).

Major modern artists are: painters V. Mackevičius (b. 1911), A. Savickas (b. 1919), and A. Gudaitis (b. 1904); the master of stained glass S. Ušinskas (b. 1905); sculptors Juozas Mikėnas, P. Aleksandravičius (b. 1906), P. Vaivada (b. 1906), J. Kėdainis (b. 1915), and G. Jokūbonis (b. 1927); and graphic artists J. Kuzminskis (b. 1906), A. Kučas (b. 1909), V. Jurkūnas (b. 1910), D. Tarabildienė (b. 1912), and A. Makūnaitė (b. 1926). The minor arts (stained glass, ceramics, amberwork, furniture) are closely integrated with the architecture of modern interiors.

After World War II towns were rebuilt and enlarged, and many new industrial and collective farm communities were built.

BIBLIOG. P. Galaunė, Vilnius Meno Mokykla, 1793–1831 . . . (The Artistic School of Vilnius, 1793–1831 . . .), Kaunas, 1928; P. Galaunė, Lietuvių liaudies menas (Lithuanian Folk Art), Kaunas, 1930; P. Galaunė and J. Vienožinskis, Litauens konst, Malmö, 1931; A. Tamošaitis, Sodžiaus menas (Rustic Art), 8 vols., Kaunas, 1931–39; K. K. Čerbulenas, Razvitie litovskogo narodnogo derevyannogo zodchestva i ego osnovnye cherty (Development of Wooden Folk Architecture of Lithuania and Its Fundamental Traits), KS, XII, 1950, pp. 62–73; V. Augustinas, Our Country Lithuania, New York, 1951; A. Spelskis, Miestų sodybinės statybos architektūra (The Architecture of the City Dwelling), Vilnius, 1955; J. Baršauskas, Lietuviškos kolūkiečio sodybos architektūra (The Architecture of the Dwelling in the Lithuanian Collective Economy), Vilnius, 1956; P. Galaunė, ed., Lietuvių liaudies menas (Lithuanian Folk Art), 6 vols. in 7, Vilnius, 1956–63 (in Lithuanian and Rus.); P. Reklaitis, The Development of Monumental Art in Ancient Lithuania, Lituanus, III, 2, 1957, pp. 9–21; J. Peras, Daugiabutis gyvenamasis namas (Houses of Mass Habitation), Vilnius, 1958; Valstybinės LTSR architekturos paminklų apsaugos inspekcijos metraštis (Annual of the National Inspectorate of the Lithuanian SSR for the Protection of Architectural Monuments), 2 vols., Vilnius, 1958–60; F. K. Bielinskis, Litovskoe narodnoe zodchestvo (Lithuanian Folk Architecture), Moscow, 1960; E. Jurenas, Lietuvių tarybinė dailė: Grafica (Art of Soviet Lithuania: Graphic Art), Vilnius, 1960 (ed. P. Sviciulene); J. M. Jurginis, Iskusstvo Litvy (Art of Lithuania), Vseobshchaya istoriya iskusstv (Universal History of Art), II, 1, Moscow, 1960, pp. 504–08; J. M. Jurginis, Lietuvos meno istorijos bruožai (Outlines of Lithuanian Art History), Vilnius, 1960; Lieutvos TSR architektūros klausimai (Problems of Architecture in the Lithuanian SSR), I, Kaunas, 1960; S. Budris, Lietuvių tarybinė dailė: Skulptura (Art of Soviet Lithuania: Sculpture), Kaunas, 1961; P. Gudynas, Lietuvių tarybinė dailė: Tapyba (Art of Soviet Lithuania: Painting), Vilnius, 1961; I. Laurašas, Novya inter'ery Litvy (New Interiors of Lithuania), Dekorativnoe iskusstvo SSSR, 9, 1962, pp. 22–24; I. Minkjavičjus, Litva, Arkhitektura SSSR, 9, 1962, pp. 38–41.

Art centers. Vilnius (Vilnyus; Rus., Vilna, Vilno; Ger., Wilna). The capital of the Lithuanian S.S.R. (since 1940). It arose on the site of a fortified settlement known since the 5th century. It is mentioned in chronicles from 1323. In the 14th–16th century it was the capital of the Grand Duchy of Lithuania. The medieval town developed along the commercial roads extending to the southwest from the Upper and Lower castles on Gediminas Hill. The extant medieval constructions are the remains of the stone and brick Upper Castle (1st half of 15th cent.) and the following Gothic churches: the Franciscan church (ca. 1420, rebuilt in the 18th cent.), the Church of St. Nicholas (ca. 1440), the Bernardine church (ca. 1525, later rebuilt several times), and the Church of St. Anne (1500–81). From the Renaissance period are the remains of the city walls in stone (1503–22) with the Gate of the Dawn, the Church of St. Michael (1594–1625), and the Skarga Courtyard (2d half of 16th cent.) in the University.

There are many fine baroque churches: the Church of St. John (originally Gothic, rebuilt late 16th–early 17th cent.; the façade of 1740 is by J. C. Glaubitz); the Church of St. Casimir (1604–15, P. Bokša); the Chapel of St. Casimir (1636, C. Tencalla) in the Cathedral; the Church of St. Theresa (1634–50); the Sapiega Palace (2d half of 17th cent.); the Church of SS. Peter and Paul (1668–75, J. Zaor; sculptural decoration by P. Peretti and G. M. Galli); the Church of St. Catherine (late 17th–early 18th cent.; the façades, 1741–43, are by J. C. Glaubitz); the Missionary Church (1st half of 18th cent.). The observatory of the University (1782–86, J. B. Knackfuss) is in neoclassic style, as are the buildings by L. Stuoka-Gucevičius: the episcopal palace (1792, rebuilt in 1st quarter of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

19th cent.), the Town Hall (1797–99), and the Cathedral of St. Stanislaus (1777–1801, PL. 240). The Evangelical Reform Church is also neoclassic (1830–35, K. Podčašinskis). In the Soviet period a new bridge (1952, V. I. Anikin) over the Neris River has been constructed, as well as other public buildings. The Vilnius Art Museum (1941) has a collection of Lithuanian, Russian, and European art.

BIBLIOG. P. Weber, Wilna: Eine vergessene Kunststätte, Vilnius, 1917; W. Tatarkiewicz, Dwa klasycyzmy: wileński i warszawski (Two Classicisms: Vilnius and Warsaw), Warsaw, 1921; J. Jurginis and A. Janikas, Vilnius: Architektūra iki XX amžiaus pradžios (Vilnius: Architecture to the Beginning of the 20th Century), Vilnius, 1955; P. Reklaitis, Die gotische St. Annenkirche in Vilnius, Bonn, 1955; P. Gudynas, Vil'nkusski Gosudarstvenny Khudozhestvenny Muzei (The Vilnius State Art Museum), Vilnius, 1958; J. Maceika and P. Gudynas, Vadovas po Vilniu (Guide to Vilnius), Vilnius, 1960.

Birzhai (Birzai; Ger., Birsen). The town was known as an important military outpost in the 15th century. Remains can be seen of the Castle of the Radziwills (1660–69, T. Spinovskis), in Renaissance style. The Church of St. John the Baptist was built by L. C. Anichini in 1853. An ethnographical museum is located here.

BIBLIOG. J. Ycas, Biržai (Lietuvos Universitetas, Humanitariuiu mokslu fakulteto rastai, VIII), Kaunas, 1931.

Kaunas (Kovno). The town was built about 1030 on the site of an earlier settlement. In the 13th century it was an important stronghold in the struggle against the Crusaders. It developed quickly in the 15th–17th century after being granted the "Magdeburg rights" (1408). In 1919–40 it was the capital of Lithuania. The remains of the stone and brick castle date from the 13th to the 17th century. The Church of St. Vytautas, the Cathedral, and the Church of St. George (all 15th cent.) are in Gothic style, and the Perkūnas House (16th cent.) is late Gothic. The Town Hall, begun in 1542 by B. Chojnowski, is Renaissance; the tower and the reconstruction of the façades (1771) are by J. Matekeris. The Jesuit church (1660–1725) is in baroque style. Near Kaunas is the baroque monastery at Pažaislis (1667–1712, L. Fredo). The art museum, named after M. K. Čiurlionis, has a collection of Lithuanian art.

BIBLIOG. V. Zeljukas, Kaunas, Vilnius, 1958; A. Gulbinskienė et al., Kaunas: jo praeitis, dabartis ir ateitis (Kaunas: Past, Present, and Future), Kaunas, 1960; H. Kairiūkštytė-Jacinienė and J. Baršauskas, Pažaislis, Vilnius, 1960.

Kedainiai (Kedainyai). The town has been known since the 15th century. The Church of St. George, in Gothic style, is from about 1403. The Calvinist church (1826) is in neo-Renaissance style. An ethnographical museum is situated here.

BIBLIOG. P. Biržys, Lietuvos miestai ir miesteliai, Kaunas, n.d.

Šiauliai (Shaulyai, Shavli; Ger., Schaulen). The town was first mentioned in chronicles of the 13th century. The Church of SS. Peter and Paul, dating from 1595–1625, is in Renaissance style. There is an ethnographical museum.

BIBLIOG. J. Naudužas, Šiauliu miesto archeologiniai paminklai, Ti lietuviu kultūros istorijos, II, Vilnius, 1959, pp. 177–87.

Trakai. In the first quarter of the 14th century Trakai was the capital of the Grand Duchy of Lithuania; later (until 1492) it was one of the residences of the reigning grand dukes. There are remains of the castle on the peninsula (2d half of 14th cent.) and of the castle on the island (late 14th–early 15th cent.). An ethnographical museum is located here.

BIBLIOG. A. Janakas, Trakų pilis: XV amžiaus (The Castle of Trakai: 15th Century), Vilnius, 1952; A. Medonis, Trakai, Vilnius, 1957.

Iozas BARŠAUSKAS

GEORGIA (Georgian, Sakartvelo; Rus., Gruziya; Georgian S.S.R.). *Historical and artistic periods.* The oldest constructions on the territory of Georgia are barrow burials of the 3d and 2d millenniums B.C. located in the Trialeti area and at Samgora (Samgori) and cyclopean fortresses and settlements with round- and oval-shaped dwellings. In the second half of the 1st millennium B.C. the states of Iberia in eastern Georgia and Colchis in western Georgia were founded. Archaeological monuments dating from this period include the ruins of an acropolis near Armazi (4th and 3d cent. B.C.–beginning of our era), a vaulted stone tomb (1st cent. of our era), baths of the late-antique type, and the remains of a palace at Armazis-khevi (first centuries of our era) — all near the ancient capital of Mtskheta — and a chamber with a caisson vault forming part of the cave town of Uplistsikhe (1st cent. B.C.–13th cent. of our era).

Gold, silver, and bronze objects (jewelry and vessels) of high quality and painted pottery have been found in the barrows at Trialeti (mid-2d millennium B.C.), Akhalgori (2d half of 1st millennium B.C.), and Armazis-khevi (Mtskheta), as well as at Kldeeti, Bori, and Vani (first centuries of our era). The architecture, ceramics, and metalwork of the first centuries of our era present vivid original traits (e.g., the characteristic use of metal with semiprecious stones and filigree) but also reveal the influence of the Hellenistic and Near Eastern cultural worlds. The dwelling of this period, the so-called *darbazi* (hall), had a wooden, pyramidal, corbeled roof (VI, FIG. 139) that resembled the roofs of Near Eastern countries; this type has survived into modern times.

In the early medieval period (4th–7th cent.) buildings were made of dressed, square blocks of stone; and vaults, arches, and a dome resting on a square mass — a feature that derived from both the local folk architecture (the *darbazi*) and the architecture of Near Eastern countries — began to be used. With the advent of feudalism and the acceptance of Christianity as the official religion early in the 4th century, Georgia was closely linked to the Mediterranean cultural world. The most important monument of civil architecture of the early feudal period is the fortress town of Udzharma. Ecclesiastical architecture is represented by basilicas (the largest is the Basilica of Zion in Bolnisi, 478–93, VI, FIG. 141), among which are the "triple-church" basilicas peculiar to Georgia (the naves are divided by walls), and, above all, by domed churches. Among the domed structures that are quatrefoil are: the major church at Dzhvari (586/87–604, VI, PLS. 112, 113, FIG. 141), one of the most perfect creations of Georgian architecture; the Basilica of Zion at Ateni and the church at Matvili (1st quarter of 7th cent.); and the Cathedral at Bana, whose quatrefoil is enclosed by a circular wall (mid-7th cent., VI, PL. 113, FIG. 143). The church at Tsromi has a dome supported by four freestanding piers (626–34/35, VI, PL. 113, FIG. 141). The architectural monuments of this period are distinguished by their severe style (balanced composition, restrained use of embellishment) and by their treatment of the façades. The architectural masses of the churches mount progressively like steps and are crowned by a broad pyramidal dome on a polygonal drum.

Medieval sculpture had a decorative character and was linked to architecture (sculpture in the round, because of opposition by the Orthodox Church, was not developed in medieval Georgia). The most typical examples are the reliefs on the churches at Bolnisi and Dzhvari (VI, PLS. 111, 112). The oldest examples of Georgian painting belong to this period: fragments of the mosaic floor in the church at Bichvinta (anc. Pitius, 4th–5th cent.), mosaics from the church at Tsromi (7th cent.), and mosaics with Georgian inscriptions (1st half of 5th cent.) in the Georgian monastery near Bethlehem in Palestine.

In the 12th century, after a period of transition (Arab dominion followed by the formation of kingdoms and principalities), Georgia became one of the most economically and culturally developed states of the Near East. Architecture, from the end of the 10th to the mid-13th century, flourished again. The new style was distinguished by a more varied and dynamic composition, elongated proportions along the vertical axis, and richly carved and decorated façades, but at the same time the strict architectural quality and crystalline clarity of the building as a whole was preserved. The interiors of the churches were covered with wall paintings; the alabaster and stone altar screens and wooden doors were adorned with carved reliefs. Certain details of Georgian architecture of this period are related to those of European Romanesque architecture. (For the most important buildings see GEORGIA, ART OF.)

Georgian medieval (8th–18th cent.) silver- and goldwork was of exceptional quality, particularly the icons, crosses, church vessels, and manuscript covers (VI, PL. 115). Eighth- and 9th-century metalwork is characterized by flatness, a linear manner of expression, and decorativeness (the *Icon of the Transfiguration* from Zarzma, 886). In the 11th century a more sculptural rendering of figures and drapery was combined with the former decorativeness and with rich ornamental trimmings (the *Laklakidze Icon* with scenes from the Gospels, the plaque with the image of St. Mamai, numerous crosses). Noted goldsmiths of the 10th–11th century were Asat (2d half of 10th–early 11th cent.), Ivan Monisdze, and Ivan Dyakon. One of the most impressive pieces of the first half of the 12th century is the folding *Icon of the Mother of God* from Khakhuli, entirely covered with chased plant ornament and numerous Georgian and Byzantine cloisonée enamels. The covers of the *Anchiskhati Icon* and the Tskarostav Gospels (by Beka Opizari) were executed in the late 12th–early 13th century. Sculpture developed along the same lines as metalwork.

Mural painting flourished from the 11th to the 14th century. Churches were decorated with murals portraying Biblical scenes and personages; many of the murals contained portraits of real persons. Characteristic local traits manifested themselves in the color scheme, the iconographic details, and the creation of new hagiographic cycles (for details see GEORGIA, ART OF).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The earliest surviving illuminated manuscript is the Adishi Gospels (897). The decorative elements in the early manuscripts were severe and restrained; in the 11th and especially in the 12th century the ornamentation was more sumptuous, sometimes with many miniatures (the Second Dzhruchi Gospels and the Gelati Gospels). The manuscript of an astronomical treatise with remarkable representations of the signs of the zodiac is from 1181 or 1188.

The late medieval period (14th–18th cent.) was a time of great difficulties (the invasions of the Mongols and Tamerlane and the aggression of Turkey and Iran). The artistic level of architecture dropped, despite great technical skill. Brick was used for building as well as stone. The most representative monuments from this period are: the fortified town of Gremi, which was the capital of the Kakhetian kingdom in the 16th century; the Akhali Shuamta Monastery (16th cent.); the Ananuri fort (17th cent.); the Barakoni church (1753); the Anchiskhati bell tower in Tbilisi (Tiflis) and the bell tower in Ninotsminda; and bridges, baths, forts, and towers.

Metalworking flourished again in the mid-15th century (Master Mamne) and the 16th century (the *Icon of the Atskurska Mother of God*). In the 17th and 18th centuries artistic quality deteriorated.

Notable murals of the 14th century are found in Ubisi, Safara, and Zarzma. Murals appeared again in the 16th and 17th centuries in the churches of the Gelati Monastery and the Cathedral of Sveti-Tskhoveli at Mtskheta. A decline set in later. Among the 15th-century miniatures are the illustrations of the so-called "Decorated Psalter." Many illustrated secular manuscripts were produced in the 16th–18th century, the most interesting being editions of Rustaveli's poem, *The Hero in a Tiger's Skin.*

Peasant dwellings were distinguished by great variety. In the eastern and southern districts the *darbazi* type of house was widespread; in mountainous localities, two- and three-storied stone houses were built, sometimes with tall square defense towers. In western Georgia the *oda-sakhli* — a wooden house with a rectangular plan, resting on a stone socle or posts, with a balcony along the whole length of the façade — predominated.

Forms of Georgian folk art included wood carvings decorating peasant houses and furniture, carpets, embroidery, ceramics, metalwork (dishes, adornments, arms), and tombstones with reliefs.

After Georgia was annexed to the Russian empire in the 19th century closer ties were established with Russian culture and, through it, with European culture with which Georgia had not had any contact in the 15th–18th century because of the fall of the Byzantine Empire and the Turko-Persian encirclement. Peasant dwellings and town houses (from the 1860s) preserved the national traditions; later, the architecture in the cities followed the eclectic tendency prevalent all over Europe. Easel painting and graphic art began to be practiced. The founding father of the new Georgian painting was G. Gabashvili (1862–1936); other leading artists were R. Gvelesiani (1859–84), A. Beridze (1858–1917), A. Mrevlishvili (1866–1933), M. Toidze (1871–1953), and the talented self-taught artist N. Pirosmanishvili (1869–1918). At the turn of the century Ya. Nikoladze (1876–1951) was the founder of the national school of sculpture.

In the Soviet period the Academy of Fine Arts, which trained architects and artists, was founded in Tbilisi (1922). Large-scale rebuilding, planning, and modernizing of towns were carried out, and new industrial centers (e.g., Rustavi) and resorts were founded. After World War II much new housing was constructed in towns, on collective farms, and in resorts. National motifs were utilized in the new architectural forms.

In the figural arts an important role was played by the realist artists of the older generation — G. Gabashvili, M. Toidze, and the sculptor Ya. Nikoladze. Major landscape painters are A. Tsimakuridze (1882–1954), D. Kakabadze (1889–1952), and E. Akhveldiani (b. 1901). Genre paintings on themes of peasant life have been created by V. Sidamon-Eristavi (1889–1943), A. Kutateladze (b. 1899), and U. Dzhaparidze (b. 1906). K. Magalashvili (b. 1894) is a major portrait painter. L. Gudiashvili (b. 1896) has turned mainly to Georgia's past, to mythological and folk tales, to fantasy and grotesques. R. Sturua (b. 1916) and others work in the field of monumental painting. Scenography has achieved a high degree of development with the work of I. Gamrekeli (1894–1943), S. Virsaladze (b. 1909), and S. Kobuladze.

In sculpture N. Kandelaki (b. 1889), V. Topuridze (b. 1908), and T. Abakelia (1905–53) occupy a leading place. Book designs are produced by V. Grigolia (b. 1909), book illustrations by S. Kobuladze (b. 1909), I. Gabashvili (b. 1908), and D. Gabashvili (b. 1914); prints by V. Kutateladze (b. 1902), D. Kutateladze (1901–58), and L. Gudiashvili; and aquarelles by V. Dzhaparidze (b. 1901). In the postwar years the younger generation is represented by painters G. Gelovani (b. 1928) and G. Totibadze (b. 1928); graphic artists R. Tarkhan-Mouravi (b. 1923), T. Kubaneishvili (b. 1924), A. Bandzeladze (b. 1927), and D. Nodia (b. 1931); and sculptors B. Avalishvili (b. 1922), G. Kordzakhia (b. 1923), E. Amashukeli (b. 1928), M. Berdzenishvili (b. 1929), I. Ochiauri (b. 1924), and G. Ochiauri (b. 1927).

BIBLIOG. M.-F. Brosset, Histoire de la Géorgie depuis l'antiquité jusqu'au XIXe siècle, 3 vols., St. Petersburg, 1856–58; G. Tschubinaschwili, Die christliche Kunst im Kaukasus und ihr Verhältnis zur allgemeinen Kunstgeschichte, Mnh. für Kw., XV, 1922, pp. 217–37; J. Baltrušaitis, Etudes sur l'art médiéval en Géorgie et en Arménie, Paris, 1929; P. Peeters, Les débuts du Christianisme en Géorgie d'après les sources hagiographiques, Analecta Bollandiana, L, 1932, pp. 5–66; G. Tschubinaschwili, Georgische Baukunst, II, Tbilisi, 1934; G. Tschubinaschwili, History of Georgian Art, I, Tbilisi, 1936 (in Georgian); G. Tschubinaschwili and N. P. Severov, Puti gruzinskoi arkhitektury (Path sof Georgian Architecture), Tbilisi, 1936; R. Shmerling, ed., Obraztsy dekorativnogo ubranstva gruzinskikh rukopisei (Examples of Ornamental Decoration of Georgian Manuscripts), Tbilisi, 1940; J. Baltrušaitis, L'église cloisonnée en Orient et en Occident, Paris, 1941; N. P. Severov, Pamyatniki gruzinskogo zodchestva (Monuments of Georgian Architecture), Moscow, 1947; V. Beridze, Arkhitektura Gruzii (Architecture of Georgia), Moscow, 1948; E. Takaishvili, Arkheologicheskaya ekspeditsiya 1917-go goda v yuzhnye provintsii Gruzii (The Archaeological Expedition of 1917 to the Southern Provinces of Georgia), Tbilisi, 1952 (Georgian ed., 1958); A. Apakidze et al., Mtskheta: Results of Archaeological Researches, I: Archaeological Monuments of Armazi according to the Excavations of 1937–46, Tbilisi, 1955 (in Georgian; Rus. ed., 1958); V. Beridze, The Architecture of Samche, Tbilisi, 1956 (in Georgian; Rus. and Ger. summaries); G. Tschubinaschwili, Arkhitektura Kakhetii (Architecture of Kakhetia), 2 vols., Tbilisi, 1956–59; N. Aladashvili, Syuzhetnye rel'efy Nikortsminda (Reliefs of Nikortsminda), Tbilisi, 1957 (in Georgian; Rus. and Ger. summaries); Sh. Amiranashvili, Istoriya gruzinskoi monumental'noi zhivopisi (History of Georgian Monumental Painting), I, Tbilisi, 1957; Izobrazitel'noe iskusstvo Gruzinskoi SSR (Fine Arts of the Georgian SSR), Moscow, 1957 (cat., ed. by I. Urushadze and B. Vordeziani); G. Tschubinaschwili, Georgian Repoussé Work, Tbilisi, 1957 (in 5 languages); N. Dzhanberidze and S. Kintsurashvili, Arkhitektura Sovetskoi Gruzii (Architecture of Soviet Georgia), Moscow, Tbilisi, 1958; Niko Tschubinaschwili, Gruzinkaya srednevekovaya khudozhestvennaya rez'ba po derevu (Medieval Georgian Wood Carving), Tbilisi, 1958; A. M. Apakidze et al., Arkheologiya Gruzii)Archaeology of Georgia), Ybilisi, 1959; G. Tschubinaschwili, Gruzinskoe chekannoe iskusstvo (Georgian Repoussé Work), 2 vols., Tbilisi, 1959; Sh. Amiranashvili, ed., Gosudarstvenny Muzei iskusstv Gruzinskoi SSR: Zhivopis' (State Museum of Art of the Georgian SSR: Painting), Moscow, 1960; Sh. Amiranashvili, History of Georgian Art, Tbilisi, 1960 (in Georgian; 2d Rus. ed., Moscow, 1963; bibliog.); L. Sumbadze, Gruzinskie darbazi (Georgian *darbazi*), Tbilisi, 1960; Sh. Amiranashvili, ed., Les émaux de Georgie, Paris, 1962 (trans. F. Hirsch); R. Shmerling, Malye formy v arkhitekture srednevekovoi Gruzii (Small Structures in Medieval Georgian Architecture), Tbilisi, 1962; Sh. J. Amiranashvili, EAA, s.v. See also Ars Georgica, 5 vols., Tbilisi, 1942–59, and the bibliog. for GEORGIA, ART OF.

Art centers. Tbilisi (until 1936, Tiflis). The capital of the Georgian S.S.R. is situated on the banks of the Kura River (extending more than 12 mi.) and on the slopes of the Trialeti ridge. It was known as a fortified town in the 4th century; in the 6th century it became the capital of Kartlia (Iberia) and at the end of the 7th century, after the Arab conquest, it was the residence of the emirs. In 1122 it became the capital of united Georgia and later was the economic, political, and cultural center of Georgia. The city is spread out over the hills at different levels. The ancient nucleus, the old town, retains its original appearance. The ruins of the Narikala citadel (the oldest parts of the 4th cent., the later ones of the 16th–17th cent.) on the right bank, of the Kura and the Church of the Metekhi (1278–93) on the left bank, form the picturesque silhouette characterizing this part of Tbilisi. The narrow streets, often climbing uphill, preserve traces of the town's original layout.

Interesting medieval architectural monuments include: the Zion Church (6th–7th cent., repeatedly rebuilt, the last time in 1710), the three-aisled Anchiskhati Basilica (6th cent.), the Lurdzhi or Blue Monastery (late 12th cent., later radically altered), the Anchiskhati bell tower (1675), and the baths of the palace of King Rostom (17th cent.).

In the beginning of the 19th century the new town, with a network of right-angled streets, grew up on the right bank and in the 1840s on the left bank. Noteworthy buildings in the Russian neoclassic style include: the Zion bell tower (1812), the building of the Army General Staff (1824), and the Theological Seminary (now housing the Georgian National Museum of Art, late 1830s). Buildings in the eclectic style of the 19th and the early 20th century include: the Paliashvili Opera House (1880–96, V. Shretter), the Rustaveli Theater (1901, V. Tatishchev and I. Shimkevich), the Tbilisi Hotel (1915, G. Ter-Mikelov), and the Georgian High School for the Nobility (now part of Tbilisi University, 1900–16, S. Kldiashvili). A revival of forms characteristic of Georgian medieval architecture can be found in the Georgian Nobles' Bank (now the Public Library, 1912–16, A. N. Kalgin and G. F. Grinevski).

During the Soviet period Tbilisi has been modernized. New districts, public gardens and parks, and public buildings have been created.

Museums: Dzhanashia Museum (or Museum of Georgia), founded in 1919, arts of the prefeudal period and folk art; Georgian National

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Museum of Art, founded in 1933 (until 1952 it was the Metekhi Museum), Georgian, Russian, European, and Oriental art; the Museum of Folk Art and the Museum of Toys, founded in 1937.

BIBLIOG. V. M. Beridze, Tbilisi, Moscow, 1951; V. G. Tsintsadze, Tbilisi, Tbilisi, 1958; V. M. Beridze, Architecture of Tbilisi, 1801–1917, I, Tbilisi, 1960 (in Georgian); M. Karbelashvili et al., Arkhitektura Tbilisi: Putevoditel' (Architecture of Tbilisi: Guide), Tbilisi, 1961; T. R. Kvirkveliya, Tbilisi, Moscow, 1961.

Alaverdi. The Cathedral of Alaverdi, situated in a valley of the Alazan River, about 12 mi. southwest of Telavi, is one of the most significant Georgian monuments of the first quarter of the 11th century (VI, FIG. 146). The three apsidal semicircles are enclosed in a rectangle of the stone exterior wall (ca. 137 by 87 ft.). The interior space of the church is the most grandiose in all Georgian architecture (over 164 ft. in height).Within the outer walls are ruins of dwellings, baths, a refectory, and other buildings from the early 17th century.

BIBLIOG. G. Tschubinaschwili, The Medieval Architecture of Georgia and Its Three Principal Cathedrals, Tbilisi, 1925 (in Georgian); G. Tschubinaschwili, Arkhitektura Kakhetii (Architecture of Kakhetia), 2 vols., Tbilisi, 1956–59.

Ateni. The domed, stone Church of Zion (1st half of 7th cent., master builder Todosa) is situated in a gorge of the Tana River, about 7 mi. south of Gori. In plan and architectural form it is a replica of the major church of Dzhvari, but with somewhat altered proportions. There are reliefs of individual figures and groups on the façade; the interior has a remarkable mural (1080), which includes portraits of real persons.

BIBLIOG. R. O. Shmerling, K voprosu o datirovke Atenskoi rospisi (The Question of Dating the Ateni Painting), Soobshcheniya Akademii nauk Gruzinskoi SSR, VIII, 1947, pp. 267–73; G. N. Tschubinaschwili, Pamyatniki tipa Dzhvari (Monuments of the Dzhvari Type), Tbilisi, 1948; T. V. Barnaveli, O datirovke rospisi Atenskogo Siona (The Dating of the Ateni Zion Painting), Vestnik Akad. nauk Gruzinskoi SSR, XVII, 1956, pp. 281–86; Sh. Ya. Amiranashvili, Istoriya gruzinskoi monumental'noi zhivopisi (History of Georgian Monumental Painting), I, Tbilisi, 1957, pp. 77–98.

Batumi (anc. Bathys, medieval Vati, Batum). A seaport on the shores of the Black Sea. The town was first mentioned in written sources in the 1st century of our era. In the 16th and 17th centuries it was under Turkish domination, as were the southern districts of Georgia. In 1878 it was incorporated into Russia and began to grow rapidly at the end of the 19th century.

During the Soviet period Batumi has become one of the handsomest towns of the Black Sea coast. Its basic layout is a network of wide streets crossing at right angles. There is much greenery and many parks. The Museum of the Revolution was built in 1955 by K. Dzhavakhishvili; there are reliefs in the interior and on the façades, and the main façade has a frieze by T. Abakelia.

BIBLIOG. D. Komakhidze, Batumi, Batumi, 1956.

Bichvinta (Pitsunda; anc. Pitius). This ancient settlement on the coast of the Black Sea is situated on Cape Pitsunda. From the second half of the 1st millennium B.C. to the 1st millennium A.D. it was a large, rich town. Remains from this period came to light during excavations of the 1950s: massive fortifications, temples, baths, and other structures. Of artistic interest is the mosaic floor in one of the churches (4th–5th cent. of our era). Northeast of the ancient fortified town is a cruciform, domed church of the 10th century with walls of alternating courses of brick and stone and 16th-century frescoes in the narthex.

BIBLIOG. L. A. Matsulevich, Otkrytie mozaichnogo pola v drevnem Pitiunte (Discovery of a Mosaic Pavement in Ancient Pitius), Vestnik drevnei istorii, 4, 1956, pp. 146–53.

Bolnisi. The Basilica of Zion is situated about 43 mi. southwest of Tbilisi near the village of Bolnisi; it is one of the largest churches in Georgia (covering an area of ca. 91 by 79 ft.). According to the building inscription, it dates from 478–93. Three aisles, a projecting apse, horseshoe-shaped arches, and pierced lunettes above the entrances are characteristic features of early medieval Georgian architecture, as represented by this church (VI, FIG. 141). The interior columns have capitals and bases decorated with carved geometric designs and representations of plants and animals (VI, PL. 111).

BIBLIOG. G. N. Tschubinaschwili, Bolnisski Sion (Izvestiya Inst. yazyka i istorii material'noi kul'tury Gruzinskogo filiala Akad. Nauk SSSR, IX), Tbilisi, 1940.

David Garedzha (Garedja). A large complex of cave monasteries situated about 37 mi. southeast of Tbilisi. For a distance of about 15 mi. there are several hundred caves hollowed out of the cliffs. The oldest of these monasteries — the David Lavra and the monasteries of Dodo and of Natlis-Mtsemeli (St. John the Baptist) — were founded in the first half of the 6th century. From the 10th to the 13th century other monasteries were established, for example, Udabno, Chichkhituri, and Bertubani. In many churches and refectories mural paintings, some including portraits of contemporaries, have survived.

BIBLIOG. G. N. Tschubinaschwili, Peschchërnye monastyri David Garedzhi (Cave Monasteries of David Garedzha), Tbilisi, 1948.

Dmanisi. Located some 58 mi. southwest of Tbilisi are the ruins of a rich medieval trading center. The town was founded in the 9th century and flourished in the 12th–13th century. Excavations (1936–37) have revealed a citadel with stone walls and towers, streets, fortifications with bastions, underground passages, baths, and storehouses. In the citadel is a "triple-church" basilica (6th–7th cent., restored in the early 18th cent.) with a porch of dressed stone (1st quarter of 13th cent.) richly decorated with reliefs. To the east of the basilica are the ruins of a bell tower.

BIBLIOG. L. Mushelishvili, Raskopki v Dmanisi (Excavations at Dmanisi), SA, V, 1940, pp. 258–86.

Dzhvari. The major church of Dzhvari is a cruciform, domed, stone church, situated on a high hill opposite the city of Mtskheta (VI, PLS. 112, 113, FIG. 141). It was erected in 586/87–604 (according to an inscription) next to an small church — the minor church of Dzhvari (mid-6th cent., now half-destroyed). The church of Dzhvari is the earliest and best existing example of the type of church that became widespread in Georgia in the 7th century. The building is a quatrefoil (ca. 72 by 60 ft.) with four separate chambers that are connected with the interior space by deep niches; the central dome rises on an octagonal drum resting on squinches (ca. 77 ft. high). On the façades are reliefs, including some donor portraits.

BIBLIOG. G. N. Tschubinaschwili, Pamyatniki tipa Dzhvari (Monuments of the Dzhvari Type), Tbilisi, 1948.

Gelati. The monastic complex, located about 4 mi. northeast of Kutaisi, was one of the major cultural centers of medieval Georgia. It was founded in 1106 by King David the Builder. Surviving from the beginning of the 12th century are a cruciform, domed main church, ruins of an academy, and parts of the defensive stone walls with an entrance that rises over the grave of King David. Dating from the 13th century are the domed Church of St. George, the two-storied Church of St. Nicholas, a three-storied bell tower, and an entrance portico of the academy (all of stone). There is a marvelous mosaic (1120s) in the half dome of the altar apse of the main church. Mural paintings of the 12th to 18th century decorate the main church and the Church of St. George (including many portraits of historical persons). The famous Khakhuli folding icon, originally kept in the monastery, is now in a museum in Tbilisi.

BIBLIOG. B. Lominadze, Gelati: Putevoditel' (Gelati: Guide), Kutaisi, 1958; R. I. Keniya, K voprosu o kharaktere chekanki Khakhul'skoi ikony (The Question about the Chasing on the Khakhuli Icon), Soobshcheniya Akad. nauk Gruzinskoi SSR, XX, 1959, pp. 121–27; T. Virsaladze, Fragmenti drevnei freskovoi rospisi glavnogo gelatskogo khrama (Fragments of Old Fresco Painting in the Main Church of Gelati), Ars Georgica, V, 1959, pp. 163–204.

Gremi. This fortified town is near a village of the same name, on the banks of the Intsoba River, 11 mi. northeast of Telavi. In the 16th century it was the capital of the Kakhetian kingdom. To this period belong the ruins of a few churches, shops, baths, and houses (built of rough stones and brick); on the top of one of the hills are the fortress, the palace, and the main church (ca. 1565) — a cruciform, domed, brick building with murals of the 16th century.

BIBLIOG. G. Tschubinaschwili, Arkhitektura Kakhetii (Architecture of Kakhetia), II, Tbilisi, 1959, pp. 447–50.

Kutaisi. Situated on the Rion River, Kutaisi is the second most important industrial and cultural center of the Georgian S.S.R. and one of the most ancient towns of Georgia. It was known to authors of antiquity as Kotatisium and in the first centuries of our era as the fortress town of Kutatisi; in the 8th century it was the capital of the western Georgian kingdom, and in the 10th century it was one of the major cultural and political centers of Georgia. From the 13th to the early 14th century and from the late 15th to the early 19th century, it was the capital of the kingdom of Imeritia. In Kutaisi are the ruins of the grandiose Cathedral erected by Bagrat III (1003, destroyed in 1691). The church is a trefoil inscribed in a cross (160 by 128 ft.), with a dome resting on four large piers. The

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

porticoes on the western and southern façades, richly decorated with carving, are from the first half of the 11th century. In Soviet times much modern housing has been constructed. The Historico-Ethnographical Museum (1922) contains medieval Georgian minor arts. There is a branch of the Museum in the Gelati Monastery.

BIBLIOG. G. Tschubinaschwili, The Medieval Architecture of Georgia and Its Three Principal Cathedrals, Tbilisi, 1925 (in Georgian); N. P. Severov, Opyt rekonstruktsii Kutaisskogo khrama Bagrata (Experiment of Reconstructing the Church of Bagrat at Kutaisi), Ars Georgica, V, 1959, pp. 9–110.

Mtskheta (Mtskhet). The town is situated on a promontory at the confluence of the Aragva and Kura rivers, near Tbilisi. A large settlement existed here in the 2d millennium B.C. As the political center of Iberia, it was mentioned in written sources a few centuries before the Christian Era; until the mid-6th century of our era it was the capital of Georgia; subsequently it became the ecclesiastical center of the country. Excavations have been under way since 1937. At Samtavro, on the northern edge of the town, a huge necropolis (2d millennium B.C. – 9th cent. of our era) has been discovered containing pottery, artifacts of bronze, gold, and silver, glass items, and beads made by local craftsmen. On the right bank of the Kura the ruins of the Armazi acropolis (4th and 3d cent. B.C.–beginning of our era) have been uncovered: citadel walls, a palace and a storehouse made of dressed stone and sun-dried brick, and a rich grave. Unique in Georgian architecture is a stone tomb (1st cent. of our era), rectangular in plan, covered by a semicircular vault. At a higher level of the Kura, in Armazis-khevi, are the ruins of a palace complex, baths (2d–3d cent. of our era), and a necropolis with tombs of Georgian nobles (first centuries of our era) containing numerous artifacts (vessels, objects of adornment, arms) of gold, silver, and bronze, the excellent local glass, and gems with portraits.

The Samtavro Monastery has a cruciform, domed cathedral (11th cent.) with richly decorated façades (VI, PL. 114). The Cathedral of Sveti-Tskhoveli (VI, PL. 114) was erected in 1010–29 (builder Arsukisdze; restored in the early 15th and the 17th cent.). It is rectangular in plan (ca. 165 by 82 ft., 157 ft. high); the western part is divided into three naves, surmounted by a gallery; four freestanding piers support the drum of the dome. The façades are adorned with bands of arches, carvings, and reliefs. Inside are fragments of murals, most of which date from the 16th and 17th centuries.

BIBLIOG. G. Tschubinaschwili, The Medieval Architecture of Georgia and Its Three Principal Cathedrals, Tbilisi, 1925 (in Georgian); R. O. Shmerling, Samtavro: pamyatnik XI veka (Samtavro: 11th-Century Monument), Ars Georgica, I, 1942, pp. 49–76; N. P. Severov and G. N. Tschubinaschwili, Mtskheta, Moscow, 1946; V. Beridze, "Sveti-Takhoveli" in the Mtskheta Cathedral and Its Paintings on Subjects of the Christianization of Georgia, Vestnik Gosudarstvennogo muzeya Gruzii, XIV, 1947, pp. 135–64 (in Georgian); A. Apakidze et al., Mtskheta: Itogi arkheologicheskikh issledovani (Mtskheta: Results of Archaeological Researches), I, Tbilisi, 1958; Sh. J. Amiranashvili, EAA, s.v. Georgia.

Nikortsminda. A domed church (1010–14) is located about 9 mi. west of the village of Ambrolauri. Basically a hexagon, the church has five sides that terminate in apses, while the western side terminates in a rectangular block. The outer perimeter of the plan is cruciform. The porches to the south and west were added later in the 11th century. The façades have lavish carvings in stone. The interior of the church has mural paintings of the 16th–17th century.

BIBLIOG. G. N. Tschubinaschwili and N. P. Severov, Kumurdo i Nikortsminda, Moscow, 1947.

Pitareti. The church of Pitareti is located about 9 mi. southwest of the village of Tetri-Tskaro. The church (1st quarter of 13th cent.) is rectangular in plan (VI, FIG. 146), with a dome resting on two freestanding piers. There is a chapel on the western side. The façades and the drum are decorated with rich, skillfully executed stone carvings.

BIBLIOG. G. N. Tschubinaschwili, K voprosu o natsional'noi forme v arkhitekture proshlogo (The Question of National Form in the Architecture of the Past), Ars Georgica, III, 1950, pp. 191–200.

Samtavisi. The cruciform, domed church of Samtavisi is located about 19 mi. east of Gori. It was built in 1030 by Illarion Samtavneli (VI, PLS. 113, 114); the drum of the dome and the western wall were restored at the end of the 15th century. In the center of the eastern façade, in addition to the traditional niches and series of arches, there is a composition consisting of a large ornamented cross, the carved cornice of the main window, and ornamental squares below the window. The interior of the church has remains of mural paintings of the 17th century.

BIBLIOG. N. P. Severov, Pamyatniki gruzinskogo zodchestva (Monuments of Georgian Architecture), Moscow, 1947, p. 178; S. V. Barnaveli, Lichnost' "vtorichnogo stroitelya" khrama Samtavisi (The Personality of the "Second Architect" of the Church of Samtavisi), Soobshcheniya Akademii Nauk Gruzinskoi SSR, XII, 1951, pp. 571–78.

Sukhumi (anc. Dioskourias; Gr., Διοσχουριάς). This seaport on the Black Sea was founded by the Greeks in the 6th century B.C. under the name of Dioskourias; in the first centuries of our era it was the Roman fortress town of Sebastopolis. In medieval times Sukhumi (referred to as Tskhumi in Georgian chronicles) was part of the Georgian kingdom. From the mid-15th to the early 19th century it was under Turkish rule. In 1810 it was incorporated into Russia. During the Soviet period Sukhumi has become one of the most beautiful southern seashore towns.

BIBLIOG. A. N. Kalandadze, Arkheologicheskie pamyatniki Sukhumskoi gori (Archaeological Monuments of Sukhumi's Hill), Sukhumi, 1953.

Trialeti. A group of archaeological monuments (from the late Paleolithic and Aëneolithic periods to the early medieval period) were found south of the Trialeti ridge. The numerous grave objects found in the barrows date from the early and the middle Bronze Age (mid-2d cent. B.C.); they include painted pottery and some remarkable works in precious metals (a gold goblet inset with precious stones and filigree, silver goblets, and a little silver bucket with incised decoration).

BIBLIOG. B. A. Kuftin, Arkheologicheskie raskopki v Trialeti (Archaeological Excavations at Trialeti), I, Tbilisi, 1941; B. A. Kuftin, Arkheologicheskie raskopki 1947 g. v Tsalkinskom raione (Archaeological Excavations in 1947 in the Tsalka District), Tbilisi, 1948.

Tsromi (Zromi). The church of Tsromi is located about 6 mi. west of the village of Kareli. It is the earliest (626–34/35) example of a Georgian church in which the dome rests on four freestanding piers (VI, PL. 113, FIG. 141). On the eastern façade are two deep, triangular niches, a motif that later became widely used in Georgian architecture. There are remains of mural paintings (10th cent.) in the apse. Fragments of a 7th-century mosaic from the half dome of the apse of the church are now in the Georgian National Museum of Art, Tbilisi.

BIBLIOG. G. Tschubinaschwili, Georgische Baukunst, II, Tbilisi, 1934; Ya. I. Smirnov, Tsromskaya mozaika (The Mosaic of Tsromi), Tbilisi, 1935.

Udzharma. Located 23 mi. northwest of Tbilisi, this ancient town was founded in the 3d–4th century; in the 5th and 6th centuries it was one of the most important centers of eastern Georgia, but declined in the 9th century. It was surrounded by massive defensive walls of dressed stone. The town's citadel consists of the upper fortress (with a two-storied palace and the Basilica of Dzhvar Patiosani, 5th cent.) and the lower fortress surrounded by massive walls with nine towers.

BIBLIOG. D. Muskhelishvili, Gorod Udzharma: Avtoreferat (Udzharma: Account), Tbilisi, 1956.

Uplistsikhe. This cave town on the left bank of the Kura River is about 6 mi. east of Gori. Georgian chronicles mention the fortress in the 1st century B.C.; in the 10th and 11th centuries it was one of the most important towns of Georgia; in the 13th century it was devastated by the Mongols. Uplistsikhe consists of groups of buildings of various periods hollowed out of the rock. Streets, a square, and an underground tunnel leading to the river have survived. Among the earliest constructions are the chamber with a caisson vault; the church on the square and other edifices were built in the 10th–11th century.

BIBLIOG. N. Tschubinaschwili, Uplis Tsikhe, Tbilisi, 1961.

Vardzia. The 12th-century cave monastery is situated in a gorge of the Kura River, about 19 mi. south of the village of Aspindze. Hundreds of caves, hollowed out of a steep tufa cliff (for a distance of ca. 2,950 ft.), are distributed in tiers and connected by passages. There are many cave dwellings and cells, caves of large proportions with high vaults and open terraces, and crypts and cisterns. In the center of the monastery, in a small square, is a freestanding bell tower; the main church of the single-hall type, with a barrel vault, pilasters, and supporting arches, is hewn out of the cliff; the interior has frescoes with portraits of King George III and Queen Tamara. Vardzia has been preserved as a museum zone since 1938.

BIBLIOG. G. D. Dzhamburiya et al., Vardzia: Putevoditel' (Vardzia: Guide), Tbilisi, 1957; G. M. Gaprindashvili, Peshcherny ansambl' Vardzia (The Rock Complex of Vardzia), Tbilisi, 1960; K. Melitauri, Problems in the Architectural-Building Study of Vardzia, Tbilisi, 1961 (in Georgian); K. Melitauri, Vardzia, Tbilisi, 1963.

Vakhtang BERIDZE

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ARMENIA (Armenian S.S.R.). *Historical and artistic periods. a. Antiquity.* The earliest architectural monuments in the Armenian Soviet Socialist Republic are the megalithic constructions of the Neolithic period on the slopes of Mt. Ararat. The end of the 3d millennium (the Aëneolithic period) is the date assigned to the settlement in Shengavit and also to the oldest artistic finds — stone and clay statuettes of women and animals and pottery covered with geometric designs. From the Bronze and the early Iron Age there are elaborate geometric, plant, and animal motifs executed on stone and objects of bone, clay, and metal (a gold cup with chased figures of lions from Kirovakan; massive figures of oxen, deer, and birds of cast metal; models of war chariots; bronze belts with engraved cult and genre scenes; various objects of adornment; and stone idols). Pottery with painted and incised ornamentation appears to have been widely diffused. From the 9th through the 6th century B.C. date the city-states of Urartu (q.v.), which had fortified citadels with palaces, temples, and domestic buildings (PLS. 257, 258). Artistic finds of the Urartian period include wall paintings uncovered in Arinberd, statuettes, and metalwork (PL. 259). Urartian art exerted substantial influence on the formation of Achaemenid art (see IRANIAN PRE-SASSANIAN ART CULTURES).

From the 6th to the 4th century B.C. the Armenian nation was formed, and from the 4th to the 2d century B.C. the Armenian kingdom. Towns (e.g., Armavir, Artashat, Tigranocerta), fortresses (e.g., Garni), and cult and secular buildings (temples, palaces, theaters, etc.) were constructed. Town building, architecture, and the representational arts from the end of the 1st millennium B.C. through the first centuries of our era, which basically reflect local traditions, give evidence of the influence of the Hellenistic world. A unique example of early Armenian art is the mosaic floor of the baths in Garni (3d cent.), with a subject drawn from Greek mythology. Sculpture, stone carving, toreutics, glyptics, and various applied arts were developed. The production of artistic glass began, and coins with the portraits of Armenian kings were struck.

b. Medieval and modern periods. The emergence of feudalism (3d–4th cent.) and the conversion of the Armenians to Christianity (301) fostered a new stage in the development of Armenian artistic culture. Dvin, the Armenian capital from the 4th to the 9th century, soon became a center of crafts and the caravan trade. In the 4th and 5th centuries the predominant type of religious edifice was the basilica without side aisles or with two side aisles, such as those remaining in ruins in Kasak, Ereruk (I, PL. 426, FIG. 719), and Dvin. From these descended the characteristic types of later churches: the central-plan, cruciform church with a dome supported by freestanding piers; the vaulted basilica; the domed hall church and triapsidal churches (see I, cols. 717–724). Beginning in the mid-6th century domed churches predominated.

The 7th century was the classical period in Armenian architecture. The basic model was the cruciform plan with a dome resting on four squinches, and this type was elaborated by enlarging the space under the dome, by adopting corner chambers and rectangular external walls, and by surrounding the inner rectangular space with an ambulatory. Secular building is represented by palace complexes (the patriarch's palace in Zvart'nots). Works of memorial architecture consist of arched and pierced monuments, steles, and freestanding columns with stone crosses (I, PL. 435). In the reliefs adorning the buildings, new motifs appeared (representations of the builders at Zvart'nots, crosses, and medallions with representations of saints at Ptghni). Churches were decorated with wall paintings (fragments at Lmbat, Aruch, and T'alin have survived). One of the earliest illuminated manuscripts was the Echmiadzin Gospel (6th cent.; see I, col. 726, for the more probable date of 989).

During the period of Arab dominion (end of 7th cent.) building activity slowed down and revived only with the rise of the independent Armenian kingdoms (9th cent.), when it developed greatly (10th–11th cent.). Numerous fortified centers of the feudal princes grew up (Aght'amar, Lori-Berd, Amberd) and monasteries were built (Marmashen; Sanahin, I, PL. 434; Tat'ew, I, PL. 425). The major center was the capital of the Bagratid kingdom, Ani, where, from the second half of the 10th century, numerous palaces, churches (the Cathedral, 989–1001, I, PLS. 433, 434, FIG. 719, designed by the architect Trdat, and the Church of Gagik, 1001–10, also by Trdat), inns, bridges, and houses were built. Carving in stone became more lavish and varied. Subject and ornamental reliefs covered the walls of the church at Aght'amar (915–21, I, PL. 435), the churches at Ani (I, PL. 435), and the vertical *khatchk'ars* (tombstones); carved portraits of church elders and founders are to be found in churches at Ptghni, Haghbat (I, PL. 428), and Sanahin. An example of sculpture in the round is the statue of King Gagik from Ani. The interiors of churches were embellished with wall paintings (at Tat'ew, Aght'amar, Sanahin, etc.). From the 10th to the 11th century date the highly decorative miniatures of the Gospel of Queen Mlk'e (902, I, PL. 431), the Echmiadzin Gospel (989), and the Gospel of 1038 (I, PLS. 429, 430). The making of carpets, textiles, arms, and pottery was well developed.

Blocked for a while by the conquest of the Seljuk Turks, the development of Armenian artistic culture began again from the end of the 12th century. In architecture the new stage was characterized by a reduced scale of buildings and by rich and graceful embellishment. Building was carried on in towns and monasteries (at Agarcin and Sanahin, I, PL. 434, and at Gegard); castles, bridges, and caravansaries were also constructed. An important center of Armenian culture from the end of the 11th century was the Armenian state of Cilicia. Architecture (the capital Sis, the fort of Lambron, the seaport Aias, etc.) and miniature painting developed, based on Armenian traditions. The Cilician school of miniature painting flourished in the 13th century, especially in the work of T'oros Roslin and his followers.

In the 14th century the Mongol dominion and the invasions of Tamerlane and nomadic Middle Asian tribes hindered the economic development of Armenia. Architecture suffered a grave decline, but representational art continued to develop. Wall paintings of the 14th century have survived at Akhpat, Dadi, and other places. Great virtuosity and delicacy in workmanship were achieved in carving in stone. From manuscripts of the 13th, 14th, and later centuries it is possible to identify various schools of painting. One of the most important ones, in the region of Lake Van, is distinguished by its graphic style (artist Tserun and others). Printed books (from 1512) gradually ousted handwritten books, but as late as the 17th century miniature artists were found who had a very personal touch (Akop Dzugaetsi). In the 17th century architecture showed new signs of life, but did not achieve its former high level (the Church of St. George at Mugni, the bell tower of the Cathedral at Echmiadzin). Monumental painting was replaced in the 17th and 18th centuries by decorative wall painting in churches and houses. In the 18th century the Ovnatanian family of artists did the wall paintings in the Cathedral at Echmiadzin. The Biblical scenes in these frescoes testify to the artists' familiarity with Western art.

After the union of Armenia with Russia (1828) many cities, such as Erevan, Alexandropolis, and Kars, were rebuilt, incorporating new ideas about town planning and new architectural principles. From the first quarter of the 19th century Armenian art began to develop along realistic lines and to assimilate the achievements of Russian and European art. The first artists of this new period were the painters A. Ovnatanian (1809–1881/84) and S. Nersisian (1815–84). They were followed by G. Bashinjagian (1857–1925; landscape painting), V. Sureniants (1860–1921; historical and genre paintings drawn from Armenian and Iranian life), and E. Tatevosian (1870–1936; influenced by impressionism). The work of the portrait painter S. Agajanian (1863–1940), the painter M. Sarian (b. 1880), and the sculptors A. Ter-Marukian (1871–1919) and A. Gurjian (1881–1948) commenced at the beginning of the 20th century.

c. The Soviet period. Towns were rebuilt, and many domestic and public buildings — including Houses of Soviets, cultural centers, clubs, schools, and medical buildings — were erected. A town-planning undertaking of major importance was the rebuilding of the capital, Erevan. The reconstruction (1924) was based on a town plan by the architect A. I. Tamanian (1878–1936). The architecture from 1920 to about 1935 reflected the traditions both of neoclassicism and of Armenian architecture, as well as elements of constructivism. In the postwar period town planning was carried out on a large scale. Genre and landscape painting and portraiture were the most highly developed of the pictorial arts. The painter M. Sarian occupies an outstanding place in Armenian art. Other painters include G. Gurjian (b. 1892), S. Arakelian (1884–1943), M. Abegian (b. 1909), M. Aslamazian (b. 1907), and O. Zardarian (b. 1918). A highly personal approach marks the work of A. Kojoian (1883–1959) in the graphic arts. In sculpture, the emphasis was on portrait busts, as exemplified in the work of A. Sarksian (b. 1902), A. Urartu (b. 1899), S. Stepanian (b. 1895), and N. Nikogosian (b. 1917). More recent artists (2d half of the 1940s) are the painters A. Galents (b. 1910) and G. Khanjian (b. 1926) and the sculptor G. Chubarian (b. 1923).

BIBLIOG. V. Langlois, Collection des historiens anciens et modernes de l'Arménie, 2 vols., Paris, 1867–69; J. Sandalgian, Histoire documentaire de l'Arménie des âges du paganisme, 2 vols., Rome, 1917; J. Strzygowski, Die Baukunst der Armenier und Europa, 2 vols., Vienna, 1918; J. Markwart, Südarmenien und die Tigrisquellen nach griechischen und arabischen Geographen, Vienna, 1930; K. Weitzmann, Die armenische Buchmalerei des 10. und Beginnen des 11. Jahrhunderts, Bamberg, 1933; S. Der Nersessian, Manuscrits arméniens illustrés des XII• XIII• et XIV• siècles de la Bibliothèque des Pères Mékhitharistes de Venice, 2 vols., Paris, 1937; Ocherki po istorii iskusstva Armenii (Essays on the History of Armenian Art), Moscow, Leningrad, 1939; A. N. Svirin, Miniatyura drevnei Armenii (Illumination of Ancient Armenia), Moscow, Leningrad, 1939; T. Toramanian, Materials for the History of Armenian Architecture: Collection of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Works, 2 vols., Erevan, 1942–48 (in Arm.); S. Der Nersessian, Armenia and the Byzantine Empire: A Brief Study of Armenian Art and Civilization, Cambridge, Mass., 1947; R. Grousset, Histoire de l'Arménie des origines à 1071, Paris, 1947; B. Arakelian, The Sculpture of the 4th–7th Centuries, Erevan, 1949 (in Arm.); A. L. Yakobson, Ocherk istorii zodchestva Armenii V–XVI vekov (Essay on the History of Architecture in Armenia; 5th–16th Centuries), Moscow, 1950; V. M. Arutyunian and S. A. Safaryan, Pamyatniki armyanskogo zodchestva (Monuments of Armenian Architecture), Moscow, 1951; L. A. Durnovo, ed., Drevnearmyanskaya miniatyura (Ancient Armenian Illumination), Erevan, 1952 (cat.); L. A. Durnovo, Kratkaya istoriya drevnearmyanskoi zhivopisi (Short History of Ancient Armenian Painting), Erevan, 1953; K. V. Trever, Ocherki po istorii kul'tury Drevnei Armenii (Essays on the History of Ancient Armenian Civilization), Moscow, Leningrad, 1953; V. M. Arutyunian and K. L. Oganesian, Arkhitektura Sovetskoi Armenii (Architecture of Soviet Armenia), Erevan, 1956; Izobrazitel'noe iskusstvo Armyanskoi SSR (Fine Art of the Armenian SSR), Moscow, 1957 (cat.); V. Temurdzhian, Carpetmaking in Armenia, Erevan, 1958 (in Arm.); M. Abramian, The Matenadaran Collection of Manuscripts, Erevan, 1959 (in Arm.); O. Avédissian, Peintres et sculpteurs arméniens, Cairo, 1959; B. B. Piotrovski, Vanskoe tsarstvo: Urartu (The Empire of Van: Urartu), Moscow, 1959; L. A. Durnovo, ed., Miniatures arméniennes, Paris, 1960 (Eng. trans., I. J. Underwood, London, 1961); M. Sargsian, Graphic Art of Soviet Armenia, Erevan, 1961 (in Arm.); N.M. Tokarski, Arkhitektura Armenii IV–XIV vv. (Architecture of Armenia 4th–14th Cent.), Erevan, 1961; T. A. Izmailova, Iskusstvo Armenii (Art of Armenia), Moscow, 1962; A. A. Martirosian, Armeniya v epokhu bronzy i rannego zheleza (Armenia in the Bronze and Early Iron Age), Erevan, 1964; S. Ser Nersessian, Aght' amar, Church of the Holy Cross, Cambridge, Mass., 1965. See also the bibliogs. for ARMENIAN ART; URARTU.

Art centers. Erevan (until 1936, Erivan). The capital of the Armenian S.S.R. (since 1920), the city was founded in 782 B.C. under the name of Erebuni by the Urartian king Argishtis I. The ruins of the earliest buildings include the citadel with a palace, a peristyle courtyard, temples, and numerous other buildings. In the Middle Ages it was a small town; from the second half of the 15th to the first third of the 19th century it belonged either to Iran or to Turkey. In the 19th and early 20th centuries it was a poorly maintained provincial town, built mostly of beaten clay. The medieval architectural monuments include the cruciform domed churches of Katogike (13th cent.) and Zoravar (17th cent.) and the arched bridge over the Razdan River (1679). The Mosque (now the Erevan Historical Mus.) dates from 1776.

During the Soviet period Erevan has changed completely in appearance. The first town plan (1924) served as the basis for succeeding plans (the latest of 1951 by N. Zargarian). Many new government buildings, hotels, banks, and theaters have been built.

Museums: Picture Gallery of Armenia (1921); the Matenadaran, an archive of ancient manuscripts and a research institute, with a collection of 10,000 Armenian manuscripts and about 700 in other languages that was begun in the 15th century (until 1939 it was kept at Echmiadzin); Erevan Historical Museum (1931); Literary and Artistic Museum of the Academy of Sciences of the Armenian S.S.R. (1921).

BIBLIOG. Yu. S. Yaralov, Erevan, Moscow, 1960 (Eng. trans., 1960).

Dvin. The medieval city, now in ruins, was located near the modern village of the same name. It was the capital of Armenia from about 330 to 893, when it was severely damaged in an earthquake; it was destroyed by the Mongols in 1236. Dvin consisted of a citadel, a settlement defended by walls of sun-dried bricks, and suburbs. Excavations have brought to light remains of the ruler's palace (4th–5th cent.); the palace of the catholicos (2d half of 5th cent.) with a columned hall; a single-aisled church (6th cent.); the cruciform, domed Cathedral of St. Gregory (7th cent., built over the ruins of a three-aisled basilica of the 3d cent.); remains of a mosaic floor) with an external surrounding gallery (5th cent.); a caravansary (6th cent.); and houses and workshops.

BIBLIOG. V. M. Arutyunian, Architectural Monuments of Dvin: 5th–7th Centuries, Erevan, 1950 (in Arm.); K. Kafadarian, Dvin and Its Excavations, I, Erevan, 1952 (in Arm.).

Echmiadzin (until 1945, Vagarshapat). The town, about 12 mi. from Erevan, was founded in the first half of the 2d century A.D. on the site of the settlement of Vardkesavan, already known in the 2d century B.C. From the second half of the 2d century to 387 it was the capital of Armenia. From the beginning of the 4th to the 12th century, and from 1441 to the present, it was the center of the Armenian-Gregorian Church and the residence of the catholicos. In the Middle Ages it had a chaotic layout of narrow streets. During the Soviet period the town has been improved and rebuilt. Medieval architectural monuments include the domed Cathedral with a central plan — the oldest Christian church in Armenia (303, rebuilt in the 5th and 7th cent. and later; bell tower, 1653–58; vestry, 1869) — and the Church of St. Hrip'simé (618), the finest examples of central-plan domed churches in medieval Armenia. The exterior of St. Hrip'simé is rectangular; the interior is cruciform in plan, with four axial apses and four diagonal three-quarter niches that give access to four corner chambers; the dome rests on a drum with 16 sides and is surmounted by a low faceted tent roof; the façades are divided by deep triangular recesses; above the porch (1653) rises a small bell tower (1790). The domed Basilica of St. Gajané (630) was restored in 1652 (I, PL. 427, FIG. 719). The Shogakat Church (1694) is of the domed hall type. The museum in the Cathedral vestry was founded in 1955.

BIBLIOG. T. Toramanian, O drevneishikh formakh Echmiadzinskogo khrama (The Oldest Forms of the Church of Echmiadzin), Zapiski vostochnogo otdela Imperatorskogo russkogo arkheologicheskogo obshchestva, XIX, 1909–10, pp. 031–052; A. B. Eremyan, Khram Ripsime (The Church of Hrip'simé), Erevan, 1955; V. M. Arutyunian, Echmiadzin, Moscow, 1958.

Ereruk Basilica. Near the village of Anipemz is the three-aisled church (I, PL. 426, FIG. 719) of the 5th century (perhaps later; see I, col. 717), which rested on a stylobate with six steps; the base of the stylobate measured ca. 98 by 130 ft. The roof was wooden. Four chapels at the corners were joined together on three sides by a gallery. Fragments of wall paintings have survived.

BIBLIOG. N. M. Tokarski, Arkhitektura Armenii IV–XIV vv. (Architecture of Armenia 4th–14th Cent.), Erevan, 1961, passim.

Garni (Gr., Γάρνι; Gornea). The ruins of a fortress near Erevan that probably existed in the 3d century B.C. (walls with rectangular towers built of basalt blocks). Within the fortress are the ruins of a classical temple (2d half of 1st cent. of our era, destroyed by earthquake in 1679), including a peristyle with Ionic columns and ornamental carving in stone; baths with a mosaic floor (2d–3d cent.); and a round, four-apsed, domed Christian church (6th cent.). Surrounding the fortress lie ruins of architectural monuments of the 4th–17th century.

BIBLIOG. N. G. Buniatov, Yazycheski khram pri dvortse Trdata v kreposti Garni (The Pagan Temple near the Palace of Trdat in the Fortress of Garni), Erevan, 1933; B. N. Arakelian, Garni, 2 vols., Erevan, 1952 (2d ed., 1957); M. Gibellino Krasceninnikova and K. V. Trever, EAA, s.v.

Geghard (Airivank). The medieval monastery is situated in a gorge of the river Garni. Inside the walls are the cruciform, domed Astvatsatsin Church (1215), decorated with graceful carving and reliefs; a four-piered *djamatun* (1225–30), that is, a building for civic and religious functions (see I, col. 725); two domed churches hollowed out of the cliffs (the first with a stalactite dome resting on cross arches, the second with a cruciform plan and a burial chapel — both 1283, architect Galdzag); a four-piered burial vault (1288); and a series of small cells serving as chapels. Outside the monastery walls is the Church of St. Gregory (13th cent.), partly carved from the rocks.

BIBLIOG. N. M. Tokarski, Gegard, Moscow, 1948; A. Sainian, Garni i Gegard, Moscow, 1958.

Haghbat. A monastic complex (10th–13th cent.) is situated here, as well as the following churches: the Church of Nshan (967–91), a domed hall church with sculptured representations of church founders (I, PL. 428) and wall paintings (13th–14th cent.); the Church of St. Gregory (1005), a cruciform domed hall, rebuilt in 1211 when it was given a two-sloped roof; and the Astvatsatsin Church (12th–13th cent.), a small, domed edifice. There are two *djamatuns*: one, rebuilt in 1209, was supported by intersecting arches; the other, the Amazasp *djamatun*, was a very large four-piered building. Other structures are a library (3d quarter of 13th cent.), a large refectory (13th cent.), and a bell tower (1245). Numerous *khachk'ars* are located in the village.

BIBLIOG. N. Ya. Marr, Freskovoe izobrazhenie "Parona Khutulu Bugi" v Akhpate (Frescoes of the "Parona Khutulu Bugi" at Haghbat), Khristianski Vostok, I, 1912, pp. 350–53, pl. XXI.

Kasak Basilica. In the village of Aparan is the three-aisled, vaulted church (I, PL. 427) of the 4th century (perhaps later; see I, col. 717), which has a jutting horseshoe-shaped apse to the east and an addition to the northeast. Fragments of wall paintings survive. The chapel and vaulted hall attached to the basilica are probably from the 5th to 6th century.

BIBLIOG. A Sainian, Architecture of the Kasak Basilica, Erevan, 1955 (in Arm.).

Sanahin. A monastic complex near the village of Alaverdi. The churches, of the cruciform domed hall type, include the Astvatsatsin Church (ca. 934) and the Amenaprkich Church (957–62;

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

on the eastern façade, sculptured representations of church elders; inside, remains of wall paintings). Between the two churches is a vaulted gallery serving as a school (late 10th–early 11th cent.), with two vaulted *djamatuns* on the western side: a four-pillared one (1185) and a three-aisled one (1211). The bell tower is from the mid-13th century (ca. 75 ft. in height); the library (1063, I, PL. 434) has an octagonal dome; the round chapel of St. Gregory dates from about 1061. In the vicinity are various other buildings. A single-arched bridge (late 12th cent.) spans the Debet River.

BIBLIOG. K. Kefadarian, The Monastery of Sanahin and Its Inscriptions, Erevan, 1957 (in Arm.).

Shengavit. A settlement of the Aëneolithic period (end of 3d–1st half of 2d millennium B.C.) on the outskirts of Erevan. Excavations (1936–38 and 1958–59) have brought to light four cultural layers with the oldest architectural monuments of Armenia. An area of about 15 acres was enclosed by a defensive wall (ca. 13 ft. thick) of stone and clay. There was a secret passage to the river. The houses were either circular (beaten clay or sun-dried bricks set on a stone foundation), with conical roofs supported by central posts, or rectangular (of stone).

BIBLIOG. A. A. Martirosian, Armeniya v epokhu bronzy i rannego zheleza (Armenia in the Bronze and early Iron Age), Erevan, 1964, pp. 25-27.

Teishebaini ("Fortress of the god Teisheba"; mod. Karmir Blur). This is one of the most important Urartian forts, situated near Erevan. It was founded in the 7th century B.C. and destroyed by the Scythians in the beginning of the 6th century B.C. Excavations (since 1939) have brought to light the citadel (FIG. 665) with a two-storied building consisting of about 150 rooms (some with wall paintings) and, adjoining the citadel to the west and south, a town with a very regular layout, defended on the east by a wall with towers.

BIBLIOG. K. L. Oganesian, Karmir-Blur IV: Arkhitektura Teishebaini (Karmir Blur IV: Architecture of Teishebaini), Erevan, 1955; B. B. Piotrovski, Gorod boga Teisheby: Karmir-Blur (The Cty of the God Teisheba: Karmir Blur), Sovetskaya arkhitektura: Ezhegodnik, 2, 1959, pp. 169–86; A. A. Martirosian, Gorod Teishebaini (The City of Teishebaini), Erevan, 1961.

Zvart'nots ("Church of the Guardian Angels"). This round church near Echmiadzin was erected in 641–61 by Catholicos Nerses the Builder; it was destroyed in the 10th century and uncovered by excavations in 1901–07 (I, PL. 427). The interior plan was quatrefoil with a surrounding ambulatory. According to a reconstruction proposed by T. Toramanian in 1905, the church was a round, three-storied, domed building with a central plan; according to a reconstruction by Mnatsakanian (1959), its lower level had 32 facets. The church was decorated with ornamental and figural reliefs (including representations of the builders); inside were mosaics and wall paintings. It served as the prototype for a whole series of churches. Southwest of the church lie the ruins of the patriarch's palace.

BIBLIOG. V. M. Arutyunian, Zvartnots, Erevan, 1954; V. M. Arutyunian, Echmiadzin, Moscow, 1958; S. Kh. Mnatsakanian, The New Project of Reconstruction of Zvart'nots, Izvestiya Akad. nauk Armyanskoi SSR: Seriya obshchestvennykh nauk, 9, 1959, pp. 53–75 (in Arm.).

Stephan MNATSAKANIAN, Konstantin OGANESIAN, Aleksandr SAINIAN, Levon BABAIAN (architecture), Babken ARAKELIAN, Lidiya DURNOVO, Ruben DRAMPIAN (sculpture, painting, minor arts).

AZERBAIJAN (Azerbaijan S.S.R.). *Historical and artistic periods.* Mesolithic menhirs, dolmens, and cromlechs exist in Azerbaijan. Cyclopean monuments were erected from the end of the 2d millennium B.C. At Sary-Tepe column bases (5th cent. B.C.) have come to light that are similar to those in the apadana at Suzakh. Dating from the 2d and 1st millenniums B.C. are the cliff representations of humans, animals, and hunt scenes (near Baku), stone and clay figurines of animals and birds, and pottery. Objects of bronze, iron, and glass have survived dating from the 1st millennium B.C. to the beginning to the Christian Era.

With the development of feudalism and the diffusion of Christianity ecclesiastical and defensive constructions were erected. The circular church in Lekit (5th–6th cent.), the basilica of Kum (6th cent.), the massive walls of the town of Kabala, and the fortification system of Derbent attest to the development of the art of building in stone and brick and to the adoption of domed and vaulted types of edifices. Judging from the two bronze griffins (which formed the legs of a throne) found in the village of Zagaly and the female stone statue from the village of Khinisli near Shemakha, the minor arts flourished and sculpture was practiced. The Arab conquest (7th cent.) affected the artistic culture and building. On the basis of earlier local traditions, new types of ecclesiastical and civic buildings were created: mosques, minarets, mausoleums, madrasahs, and caravansaries. From surviving monuments it is possible to identify various local architectural schools (10th cent. and notably 12th cent.) in the towns of Ganja (Gandzha) and Bailakan (sometimes combined into what is called the Arran school), in Shemakha and Baku (the Shirvan-Apsheron school), in Nakhichevan (the Nakhichevan school), later in Tabriz and Ardebil (the Tabriz school), and others. During the height of feudalism the characteristic features of Azerbaijan architecture were formed: domed and vaulted constructions, simplified ground plans and contours of buildings, fine workmanship lavished on details, and the use of geometric and plant ornamentation. The constructions in the south were made of baked brick and decorated with polychrome tiles; limestone was used in the north.

Buildings of the Nakhichevan school are the tower-mausoleums of Yūsuf ibn-Kusayyir (1162) and of Mu'mina Khātūn (1186) in Nakhichevan, by the architect 'Ajam ibn-Ab'ā Bakr, and the mausoleums erected by Nakhichevan architects in Barda (1322), Karabaglar (14th cent.), Salmas, and Khiov. The Shirvan-Apsheron school is represented by the Maiden's Tower in Baku (12th cent.?); the tower-castles in Mardakyan (circular one, 1232; rectangular one, 12th or 14th cent.), and in Nardaran (1301); the fortified construction known as Bailov Rocks in the Bay of Baku (13th cent.) with representations, chipped out of stone, of persons, animals, and fantastic creatures unique for Azerbaijan; the tomb of Dīri-Bābā at Maraz (1402); and the remarkable complex of the palace of the Shirvān Shahs in Baku (mainly from the 15th cent.). The famous Blue Mosque in Tabriz (PL. 67, FIG. 101) was built by the Tabriz school. In the early 16th century Azerbaijan became part of the Safavid empire. In architecture there was a growing taste for vast designs, such as the complex of Sheik Ṣafī at Ardebil of the 15th–17th century (VIII, PL. 160; XII, FIG. 621) and the Jāmi' Mosque at Ganja (1606). The Shirvan-Apsheron school is represented by the mosque in Nardaran (1663, Murad 'Alī) and the group of octagonal mausoleums (17th cent.) at the village of Kalakhan near Shemakha.

The Tabriz school of miniature painting (see MINIATURES AND ILLUMINATION; SAFAVID ART) flourished in the 14th–16th century. The illustrations to Rashīd al-Dīn's *Jāmi' at-Tavārikh* (X, PL. 90; XI, PL. 216) show strong Far Eastern influences, which had been introduced by Uigur craftsmen. The leading artist was Sulṭān Muḥammad (1470–1555), whose miniatures are distinguished by their dynamic composition, decorativeness, and realistic elements (VII, PL. 410). Artists who worked in Tabriz include Kamāl al-Dīn Bihzād and Mīr Sayyid 'Alī (qq.v.), Āqā Mīrak, Qāsim 'Alī, Muẓaffar 'Alī, Mīrzā 'Alī, and later Ṣādiqī-beg Afshār and the Muḥammads. Among the most famous works of this school are the illustrations to the *Khamsa* by Niẓāmī (II, PLS. 297–300). Metalwork and ceramics were highly developed. Carpets were exported to western Europe as early as the 15th century; the most highly prized carpets were from Tabriz and Shirvan (XIII, PLS. 421–425).

In the 18th century monumental architecture declined; only folk architecture maintained its former high level of achievement. Murals began to appear (palace of the Shekī Khans at Nukha), composed of compositions of floral motifs and sometimes with representations of birds, deer, and persons.

The incorporation of Azerbaijan into Russia in the 19th century was reflected in the country's artistic culture. Towns were built according to regular plans (Shemakha, 1824–69; Baku beginning in 1860) and new types of city dwellings were elaborated. In the figural arts growing stress was laid on realism: murals by Ustād Gambar Qarābāgh (1830s–1905), the work of Mīr Muhsin Navvād (1833–1918), and portraits by Mīrzā Qadym Irvānī (1825–75). The rise of realistic Azerbaijan art was closely allied to the revolutionary movements of the early 20th century and to the influence exerted by Russian art. The satirical graphic artist A. Azimzade (1880–1943) and the painter B. Kengerlī (1890–1922) played leading roles at this time.

In Soviet times art and architecture developed greatly. Cities, towns, and villages were reconstructed and improved. A blend of the principles of classical architecture and national elements was typical of the buildings erected in the 1930s by S. Dadashev (1905–46) and M. Useinov (b. 1905; Niẓāmī Museum in Baku, Azerbaijan pavilion at the All-Russian Agricultural Fair in Moscow, 1939). New industrial centers (Dashkesan, Sumgait, Mingechaur) were erected in the late 1940s, and in Baku many new buildings have arisen between 1940 and 1960.

Painting, sculpture, and the graphic arts have flourished. In 1920 the first art school (now the Azimzade Art School) was founded. The graphic arts are represented by the satirical cartoons, illustrations, and posters of A. Azimzade, G. Khalykov (b. 1898), R. Mustafaev (1910–40), G. Mustafaev (b. 1896), and I. Azhundov (b. 1907). The most important painters are M. Abdullaev (b. 1921), B. Mirzazade (b. 1921), S. Bakhlulzade (b. 1909), T. Tagiev (b. 1917), S.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Salamzade (b. 1908), N. Abdurakhmanov (b. 1925), T. Salakhov (b. 1928), T. Narimanbekov (b. 1930), and L. Feizullaev (b. 1918). Among the sculptors are F. Abdurakhmanov (b. 1915), D. Karyagda (b. 1914), T. Mamedov (b. 1927), and O. Eldarov (b. 1927).

BIBLIOG. Arkhitektura Azerbaidzhana: Epokha Nizami (Architecture of Azerbaijan: Period of Niẓāmī), Moscow, Baku, 1947; Iskusstvo Azerbaidzhana (Art of Azerbaijan), 7 vols., Baku, 1949–59; M. A. Useinov, Pamyatniki azerbaidzhanskogo zodchestva (Monuments of Azerbaijan Architecture), Moscow, 1951; L. S. Bretanitski and A. V. Selamzade, K istorii arkhitektury Sovetskogo Azerbaidzhana (History of the Architecture of Soviet Azerbaijan), Arkhitektura Azerbaidzhana, Baku, 1952, pp. 9–82; A. V. Salamzade and K. D. Kerimov, The Tabriz School of Illumination in the 16th Century and the Artist Sulṭān Muḥammad (in Azeri), Izvestiya Akad. Nauk Azerbaidzhanskoi SSR: Seriya obshchestvennykh nauk, 5, 1959, pp. 77–101; N. Gabivov and M. Nadzhafov, Iskusstvo Sovetskogo Azerbaidzhana (Art of Soviet Azerbaijan), Moscow, 1960; Dzh. Novruzova, Monumental'naya skul'ptura Sovetskogo Azerbaidzhana (Monumental Sculpture of Soviet Azerbaijan), Baku, 1960; N. Gabivov et al., Ocherki izobrazitel'nogo iskusstva Sovetskogo Azerbaidzhana (Essays on the Fine Arts of Soviet Azerbaijan), Baku, 1961; L. Kerimov, Azerbaijan Carpets, I, Baku, Leningrad, 1961 (in Azeri and Russ.); A. V. Salamzade and A. A. Sadykhzade, 18th- and 19th-Century Dwellings of Azerbaijan, Baku, 1961 (in Azeri); P. A. Gadzhiev, Azerbaidzhanskaya sovetskaya grafika: 1920–40 (Graphic Art of Soviet Azerbaijan: 1920–40), Baku, 1962; M. A. Useinov et al., Istoriya arkhitektury Azerbaidzhana s drevneishikh vremen do XIX v. (History of Azerbaijan Architecture from Antiquity to the 19th Cent.), Moscow, 1962; M. A. Useinov, Istoriya arkhitektury Azerbaidzhana (History of Azerbaijan Architecture), Baku, 1963 (bibliog.); A. V. Salamzade, Arkhitektura Azerbaidzhana XVI–XIX vv. (Architecture of Azerbaijan: 16th–19th Cent.), Baku, 1964. See also the bibliogs. for BIHZĀD; IRAN; IRANIAN PRE-SASSANIAN ART CULTURES; MINIATURES AND ILLUMINATION; MIR SAYYID ʿALĪ; SAFAVID ART; SELJUK ART; TIMURID ART.

Art centers. Baku. Baku, the capital of Azerbaijan, is on the Caspian Sea in the southern part of the Apsheron Peninsula. A settlement in this area was mentioned in the 7th century; in the 10th century Baku was referred to as a town; and in the 15th century it was a port and the residence of the Shirvān Shahs. In the old town, within the so-called "Īcherī-Shehīr fortress," which by the 17th century was surrounded by a double line of defensive walls (part of the inner one was restored in 1952–57), is the complex of the Shirvān Shahs (mainly of the 15th cent.). It consists of the two-storied palace; the remarkable Dīvān-khāna, an octagonal hall 23 ft. in diameter enclosed on five sides by a gallery with arcades, roofed by a high dome, and with a portal adorned with fine carving in stone and stalactites; the burial place of the Shirvān Shahs, with a door bearing rich carved ornamentation; a mosque with two cupolas and a minaret; and the Sayyid Yahyā Bakuwī mausoleum with a tent steeple. The minaret of Synyk-qalʿa dates from 1078/79. The Maiden's Tower (Kyz-kalasy, 12th cent.?) is a cylindrical construction (ca. 92 ft. high) with a massive protruding part extending almost to the top (a kind of buttress). In the Bay of Baku is the submerged fortified construction known as Bailov Rocks (Bailovskie kamni; 13th cent., architect Zayn al-dīn ibn-Abī Rashīd Shīrvānī). Systematic building outside the citadel walls was begun in 1810; the town developed rapidly in the late 19th century when the oil industry expanded.

During the Soviet period Baku has become one of the largest cities of the U.S.S.R. (the town plan was begun in 1923 by V. A. Vesnin and continued by A. P. Ivanitski, then by L. A. Ilyin). Constructions include worker's communities, residential districts, a series of large squares with monuments, public buildings, and parks.

Museums: Azerbaijan R. Mustafaev Museum of Art (founded 1936 as the successor of the Arts Sections of the Azerbaijan State Museum), arts of western Europe and Russia (15th–20th cent.), China, India, and Azerbaijan; Azerbaijan Niẓāmī Literary Museum (1945, originally founded in 1939 as the Niẓāmī Museum), paintings, graphic arts, sculpture, medieval miniatures, and minor arts (including carpets); Azerbaijan Historical Museum (1920).

BIBLIOG. S. A. Dadashev and M. A. Useinov, Arkhitekturnye pamyatniki Baku (Architectural Monuments of Baku), Moscow, 1946; L. S. Bretanitski and A. V. Salamzade, K istorii arkhitektury Sovetskogo Azerbaidzhana (History of the Architecture of Soviet Azerbaijan), Arkhitektura Azerbaidzhana, Baku, 1952, pp. 9–82; Trudy nauchnoi sessii po voprosam ansamblevoi zastroiki Baku (Works of the Scientific Session for Questions on Baku's City Planning), Baku, 1955; S. A. Dadashev and M. A. Useinov, Ansambl' dvortsa Shirvanshakhov v Baku (The Complex of the Palace of the Shirvān Shahs at Baku), Moscow, 1956; L. Bretanitski, K izucheniyu gradostroitel'noi kult'ury srednevekovogo Azerbaidzhana XII–XV vv. (Study of the Urban Civilization of Medieval Azerbaijan in the 12th–15th Cent.), Iskusstvo Azerbaidzhana, VII, Baku, 1959, pp. 61–159; A. V. Salamzade, Gradostroitel'stvo Azerbaidzhana XVI–XIX vv. (Town Planning in Azerbaijan in the 16th–19th Cent.), Iskusstvo Azerbaidzhana, VII, Baku, 1959, pp. 160–245.

Bailakan. This medieval town situated between the Kura and Araks rivers flourished in the 11th and 12th centuries and was destroyed in the 13th century. It was surrounded by a defensive brick wall (ca. 20 ft. thick). Excavations of the ruins (now known as Orenkala) have partly revealed residential districts, an artisans' district, a public bath, and other buildings.

BIBLIOG. L. Bretanitski, K izucheniyu gradostroitel'noi kul'tury srednevekovogo Azerbaidzhana XII–XV vv. (Study of the Urban Civilization of Medieval Azerbaijan in the 12th–15th Cent.), Iskusstvo Azerbaidzhana, VII, Baku, 1959, pp. 61–159; Trudy Azerbaidzhanskoi (Oren-Kalinskoi) arkheologicheskoi ekspeditsii (Transactions of the Azerbaijan Archaeological Expedition to Oren-kala) (MIA, I, 67), Moscow, 1959.

Barda (Berdaa, Partav). This is one of the most ancient towns of the Caucasus. A mausoleum of 1322 (architect Aḥmad ibn-Ayyūb of Nakhichevan) has a cylindical brick tower (ca. 32 ft. in diameter) with two richly decorated doors and a facing of brick. There are remains of a second mausoleum (14th cent., probably by the same architect).

BIBLIOG. E. A. Pakhomov, Bashni-mazolei v Barde i ikh nadpisi (The Mausoleum-Towers of Barda and Their Inscriptions) (Trudy azerbaidzhanskogo filiala Akad. Nauk SSSR: Istoricheskaya aeriya, 25), Baku, 1936; E. I. Manucharov et al., Arkhitektura mavzoleev g. Bardy (Architecture of the Mausoleums of Barda), Arkhitektura Azerbaidzhana: Epokha Nizami, Moscow, Baku, 1947, pp. 245–55.

Djuga (Dzhuga). An important medieval commercial center, situated on the Araks River, destroyed in 1605. The two-tiered Mausoleum of Gulistān (early 13th cent.) has a tall square base above which is a twelve-sided tower decorated with geometric designs. There are ruins of Armenian medieval constructions (churches, caravansaries, and a cemetery).

BIBLIOG. S. V. Ter-Avetisyan, Gorod Dzhuga . . . (The City of Djuga), Tbilisi, 1937; L. S. Bretanitski et al., Mevzolei bliz Dzhul'fy (The Mausoleum near Djulga), Arckhitektura Azerbaidzhana: Epokha Nizami, Moscow, Baku, 1947, pp. 168–79.

Kabala (Kabalaka). In the early centuries of our era this ancient town was the capital of Caucasian Albania, and in the medieval period (until the 14th cent.) it was a town of considerable importance. Massive medieval fortress walls of brick on a stone foundation survive.

BIBLIOG. I. P. Shcheblykin, Ostatki krepostnykh sten Kabaly (The Remains of the Defensive Wall of Kabala), Doklady Akad. Nauk Azerbaidzhanskoi SSR, I, 2, 1945, pp. 90–94; I. P. Shcheblykin, Srednevekovye azerbaidzhanskie goroda Orenkala i Kabala (The Medieval Azerbaijan Cities Oren-kala and Kabala), Nizami, IV, Baku, 1947, pp. 222–31.

Karabaglar. This village, located about 25 mi. northwest of Nakhichevan, has a 14th-century mausoleum and a pair of minarets with remains of a connecting portal of the 12th century. The tower-mausoleum (ca. 33 ft. in diameter), of brick, is composed of 12 joined semicylinders whose surface is entirely covered with inscriptions on turquoise-colored bricks. Excavations (1939–40) have brought to light remains of a complex of buildings between the mausoleum and the minarets.

BIBLIOG. L. S. Bretanitski et al., Arkhitekturny kompleks v selenii Karabaglar (The Architectural Complex in the Village of Karabaglar), Arkhitektura Azerbaidzhana: Epokha Nizami, Moscow, Baku, 1947, pp. 256–76.

Kirovabad (until 1804 and in 1818–35 known as Ganja; in 1804–18 and 1835–1935 as Elizavetpol). Situated at the foot of the Little Caucasus Range, on the Ganjachai River, Kirovabad is the second most important industrial and cultural center of Azerbaijan. The city was founded in the 5th–6th century; in medieval times it was a center of crafts (carpets, ceramics, etc.) and of the Near Eastern caravan trade. It is the birthplace of the poet Niẓāmī (12th cent.). Architectural monuments of the 17th–18th century include the remains of the walls and towers of the fortress; bridges; the Jāmiʿ Mosque (1606), with a large domed hall (ca. 670 sq. ft., 42 ft. high); and domed houses. On the territory of the so-called "old Ganja" is the ecclesiastical complex of the Göj Imān (14th-17th cent.) faced with polychrome tiles. During the Soviet period Kirovabad has been reconstructed. There is a monument to Niẓāmī (1946, sculptor F. Abdurakhmanov, architects S. Dadashev and M. Useinov) and a mausoleum over Niẓāmī's tomb (1947, A. Sarkisov and I. Vakhutin).

BIBLIOG. L. Bretanitski and A. Salamzade, Kirovabad, Moscow, 1960 (bibliog.).

Mardakyan. The town is located on the north shore of the Apsheron Peninsula. A fortified settlement was built on the site of an older settlement. There are two tower-castles, one round (1232, ca. 65 ft. high) and one rectangular (14th cent. or, according to other data, 12th cent., 72 ft. high). The domed Mosque of Tūba-Shāhī

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

(1482, erected on the foundations of an earlier mosque) has an asymmetric façade.

BIBLIOG. L. G. Mamikonov, Restavratsiya pamyatnikov srednevekovoi arkhitektury Azerbaidzhana feodal'nykh zamkov v selenii Mardakyan (Restoration of the Monuments of Medieval Azerbaijan Architecture: The Feudal Castles in the Village of Mardakan), Trudy Azerbaidzhanskogo Politekhnicheskogo inst., II, 1956, pp. 97–110.

Nakhichevan. The city is the capital of the Nackhichevan Autonomous Soviet Socialist Republic (A.S.S.R.) and is one of the oldest towns in Azerbaijan. In the medieval period it was a major trading and crafts center. The Nakhichevan school of architecture, which occupies an important place in the history of Azerbaijan architecture of the 12th–14th century, originated here. Among the architectural monuments built by 'Ajam ibn-Ab'ā Bakr are the tower-mausoleums of Yūsuf ibn-Kusayyir (1162, octagonal; the façades have brick ornamentation laid in geometric patterns) and of Mu'mina Khātūn (1186, decagonal, with geometric ornamentation, stylized inscriptions, and plant designs; XII, FIG. 870). During the Soviet period housing developments and public buildings have been erected.

BIBLIOG. S. Vaidov et al., Mavzolei Yusufa ibn Kuseira i Mominekhatun v Nakhichevani (Mausoleums of Yūsuf ibn-Kusayyir and Mu'mina Khātūn at Nakhichevan), Arkhitektura Azerbaidzhana: Epokha Nizami, Moscow, Baku, 1947, pp. 227–40; L. S. Bretanitski and A. V. Salamzade, Architectural Monuments of Azerbaijan, I: Monuments of the Nakhichevan ASSR, Baku, 1951 (in Azeri).

Nukha (anc. Sheki). The town, situated in the foothills of the Caucasus, was the capital of the Shekī khanate in the 18th century. The present town was built in the late 18th and the early 19th century; until 1772 it was situated at a lower point. The walls of the citadel (1790) remain. The two-storied palace of the Shekī Khans (built by Haydar 'Ali Zayn al-'Ābidīn) has carved decorations, ornamental window grilles, and interior murals of the 18th–19th century (including some by Ustād Gambar Qarābāgh). The house of the Shekī Khans has murals on the second floor. Caravansaries, baths, mosques, and numerous houses with aiwans and tiled roofs date from the 18th–19th century.

BIBLIOG. L. S. Bretanitski et al., Nukha, Moscow, 1948; L. S. Bretanitski, Dvorets shekinskikh khanov (The Palace of the Shekī Khan), Arkhitektura Azerbaidzhana, Baku, 1952, pp. 337–418.

Abdul SALAMZADE, Mikael' USEINOV

KAZAKHSTAN (Kazakh S.S.R.). *Historical and artistic periods.* The oldest architectural monuments date from the 2d to 1st millennium B.C.: stone labyrinths, menhirs, and dolmens (the Begaza tumulus in central Kazakhstan) and numerous cliff representations of animals, people, and ritual scenes (Chulak Mountains, Tesiktas, etc.). Dating from the 15th to the 8th century B.C. are vessels with elaborate geometric ornamentation and anthropomorphic statuettes of stone and clay. In the middle of the 1st millennium B.C. the nomadic Saka tribes built communal edifices of beaten clay and wood (they also had portable dwellings) and adorned their garments, arms, and utensils with dynamic representations of fantastic and real wild animals. The 1st century B.C. is the date assigned to the Karagalinski treasure; one of the objects is a unique gold diadem decorated with openwork representations of dragons, birds, wild animals, and humans against a background of intertwining plants.

In the 6th-8th century of our era, in the steppe regions, stone sculptures of human figures, crudely executed but conveying individual traits, were widespread (see TURKIC ART). In the 6th–7th century large towns existed in the southern regions that were closely allied with the Central Asian cultural centers — Taraz (mod. Jambul), Otrar, Isfijab (mod. Sayram) — and Sogdian artisans produced terra-cotta statuettes and, from the 9th century, polychrome glazed vessels. In the 10th–12th century, under the Qarakhanids, the towns reached their greatest development. The layouts were typical of Central Asian towns: a citadel, the town proper (*shahristān*), and the buildings outside the walls (*rabad*). Baked brick was used as the building material (from the 9th cent.), and also for decorative effects; the buildings were faced with sculptured terra-cotta slabs. Examples of this style include the central-plan, domed mausoleums at Babaja-Khatyn (11th cent.) and Aisha-Bibi (12th cent.) near Jambul (Dzhambul). During the Mongol invasion, at the beginning of the 13th century, the towns were destroyed. Central-plan, domed mausoleums continued to be built, but now with more elaborate portals (*peshtak*) and faced with glazed ceramic slabs (mausoleums of Alasha-khan, Jechi, and Ayak-Khamyr and the mosque-mausoleum of Aḥmad Yasavī in Turkestan, all of the 13th–14th cent.). During the period of the Kazakh khanate (15th–17th cent.) the mausoleums of Kesene (in the Chelyabinsk region) and Shik-Niyaz (in the Kzyl-Orda region) were erected. In the 17th–18th century architecture suffered a decline; mausoleums were built in a simplified conical form and the walls were unadorned.

Toward the end of the 19th and the early 20th century, after Kazakhstan was incorporated into Russia, many new towns were built (Alma-Ata, Semipalatinsk, Petropavlovsk, etc.). In the traditional domed mausoleums new decorative elements appeared: sculptured and painted stone and wall paintings showing scenes of everyday life, cult vessels, and arms.

In the Soviet period the old towns underwent a transformation, and new towns and villages were created (Karaganda, Temir Tau, Balkhash, Dzhezkazgan, Leninogorsk). The public buildings combined the national architectural style and Kazakh decorative motifs.

The work of the Russian artist N. G. Khludov (1850–1935) had a great influence on the development of the figural arts. Among the artists of the older generation are the painters A. Kasteyev (b. 1904), A. Ismailov (b. 1913), A. M. Martova (1902–57), M. S. Lizogub (b. 1909), N. I. Kruzhilnikov (1896–1961), and A. M. Cherkasski (b. 1886). The artists of the younger generation include M. Kenbaev (b. 1925), S. Mambeyev (b. 1928), N. Nurmukhammedov (b. 1924), N. Tansykbaev (b. 1926), K. Telzhanov (b. 1927), K. Shayakhmetov (b. 1928), and S. Romanov (b. 1926), and in sculpture I. Itkind (b. 1873), Ya. K. Kuchis (b. 1895), and Kh. Naurzbaev (b. 1925).

BIBLIOG. A. N. Bernshtam, Zolotaya diadema iz shamanskogo pogrebeniya na reke Karagalinke (The Gold Diadem from the Tomb of a Shaman near the Karagalinski River), KS, 5, 1950, pp. 23–21; A. A. Formozov, Naskal'nye izobrazheniya Urala i Kazakhstana epokhi bronzy i ikh semantika (Rock Representations of the Urals and Kazakhstan and Their Meaning), Sovetskaya etnografiya, 3, 1950, pp. 170–76; A. Kh. Margulan, Iz istorii gorodov i stroitel'nogo iskusstva drevnego Kazakhstana (History of Cities and the Art of Building in Ancient Kazakhstan), Alma-Ata, 1950; M. M. Mendikulov, Nekotorye dannye ob istorii arkhitektury drevnego Kazakhstana (Some Data on the History of Architecture in Ancient Kazakhastan), Izvestiya Akad. nauk Kazakhskoi SSR: Seriya arkhitekturnaya, 2, 1950, pp. 3–36; T. K. Basenov, Arkhitektura Kazakhskoi SSR (Architecture of the Kazakh SSR), Moscow, 1952; M. M. Mendikulov, Arkhitektura goroda Alma-Ata (Architecture of the City of Alma-Ata), Alma-Ata, 1953; T. K. Basenov, Ornament Kazakhstana v arkhitekture (Kazakh Architectural Decoration), Alma-Ata, 1957; Izobrazitel'noe iskusstvo Kazakhskoi SSR (Art of the Kazah SSR), Moscow, 1957 (cat.); T. K. Basenov, Prikladnoe iskusstvo Kazakhstana (Applied Arts of Kazakhstan), Alma-Ata, 1958; Arkhitektura Kazakhstana: Sbornik (Architecture of Kazakhstan: Miscellany), Alma-Ata, 1959; Proizvedeniya khudozhnikov Kazakhstana (Works of Kazakhstan Artists), Moscow, 1961.

Art centers. Alma-Ata (until 1921, Vernyi). The capital of Kazakhstan was founded in 1854 as a military outpost on the site of the medieval settlement of Almata and was built according to a strictly regular plan. In 1937 the first plan for rebuilding the town was drawn up and in 1948–50 the second one (D. Baragin, I. I. Belotserkovski, and L. K. Vertousov). In the first half of the 1930s buildings in the constructivist style were erected. Constructions from 1925–50 made use of classical and national traditions in their decoration. In recent buildings modern forms and constructions prevail. The Shevchenko Picture Gallery was founded in 1935. The ethnographical museum is housed in a wooden cathedral of the early 20th century.

BIBLIOG. D. B. Baragin and I. I. Belotserkovski, Alma-Ata, Moscow, 1950; M. M. Mendikulov, Arkhitektura goroda Alma-Aty (Architecture of the City of Alma-Ata), Alma-Ata, 1953.

Aisha-Bibi. The 12th-century mausoleum, located 11 mi. from Jambul, is a domed, square-plan building with brick walls, an entranceway with arched apertures, and niches faced with carved terra-cotta slabs with geometric and plant ornamentation.

BIBLIOG. A. Kh. Margulan et al., Arkhitektura Kazakhstana (Architecture of Kazakhstan), Alma-Ata, 1959.

Babaja-Khatyn. The 11th-century mausoleum, located 11 mi. from Jambul, is a monumental, square-plan, brick building with an octagonal dome. The façades are decorated with niches with large medallions and the main façade is distinguished from the others by the addition of a parapet.

BIBLIOG. A. Kh. Margulan et al., Arkhitektura Kazakhstana (Architecture of Kazakhstan), Alma-Ata, 1959.

Sayram (in the 7th–11th cent., Isfijab). This ancient town, situated about 7 mi. from Chimkent, has remains of the walls of the *shahristān* (covering an area of ca. 70 acres), and the far-flung *rabad* with a double ring of defensive walls. The basic layout is of two intersecting thoroughfares with four gates at the ends of the town. Constructions of the 10th–12th century are: the Jāmi' Mosque (rebuilt in the 19th cent.), the mausoleums of Ibrāhīm-atā and of Karachach-atā, and the Mosque of Idrīs Taigambar.

BIBLIOG. M. E. Masson, Stary Sairam (Old Sayram), Izvestiya sredneaziatskogo komiteta po delam muzeev i okhrany pamyatnikov stariny, iskusstva i prirody, 3, Tashkent, 1928.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Turkestan (until the 14th cent., Yasy). The town has been known since the 10th century. The large mosque-mausoleum of Aḥmad Yasavī dates from the late 14th century. All the rooms are inscribed within a rectangular plan; in the center is a portal flanked by massive pillars; the dome, drums, and walls are decorated with blue and white tiles. (See also TIMURID ART.)

BIBLIOG. M. E. Masson, Mavzolei Khodzha Akhmeda Yasevi (Mausoleum of Hājjī Aḥmad Yasavī), Tashkent, 1930; L. Yu. Man'kovskaya, K izucheniyu priemov sredneaziatskogo zodchestva kontsa XIV v.: Mavzolei Khodzha Akhmeda Yasevi (Study of the Techniques of Central Axaitic Architecture at the End of the 14th Cent.: The Mausoleum of Hājjī Aḥmad Yasavī), Iskusstvo zodchikh Uzbekistana, I, Tashkent, 1962, pp. 93–142.

Aina KUSURGASHEVA, Malbagar MENDIKULOV

TURKMENISTAN (Turkmen S.S.R.). *Historical and artistic periods.* Tribal art (4th–beginning of 1st millennium B.C.) is represented by finds of the "painted ceramic cultures" that were discovered in the foothills of the Kopet Dagh Mountains, in the Tedzhen (Tejend) oasis, and, later, in the Murghab (Murgab) oasis. In architecture an evolution is evident from the one-room houses of neolithic settlements to the large family, communal houses of sun-dried brick of the Aëneolithic period (the Geoksyur settlements, Anau I and II, Kara Tepe), which, in the Bronze Age, formed part of vast communities (Mamazga Tepe, Yasy Tepe, Altyn Tepe). Pottery developed from the neolithic handmade pots decorated with undulating or bracket ornamentation to the aëneolithic pottery richly painted in red-brown with cross, net, dash, and zoomorphic motifs to the refined clay vessels made on the wheel of the late Bronze Age. Elaborate terra-cotta statuettes of animals and mother goddesses were widespread.

After the territory of Turkmenistan was incorporated into the Achaemenid empire (6th–4th cent. B.C.), the large settlements were concentrated around the combined civic and religious complexes, which were monumental edifices of sun-dried brick. Under Alexander the Great and the Seleucid empire, Turkmenistan was included in the orbit of Hellenistic civilizations. The brilliant flowering of the ancient local culture occurred during the Parthian (Arsacid) era (ca. 250 B.C.-A.D. 226; see PARTHIAN ART). Town planning developed; the cities were fortified and divided into zones of palace-temple complexes, trading districts, main arteries, and civic and trading squares, as at Merv, Nysa (Nisa), and the Chilburj fortress. Parthian architecture is characterized by its massive grandeur, subtle proportions, buildings in which the elements of classical orders were adapted to local forms, and synthesis of sculptural and coloristic elements (the typical red, white, and black range of colors). Often the walls had two stories of different colors, divided into sections by engaged columns between which there were sometimes niches with statues. The blending of local and Hellenistic traditions was reflected in works of Parthian figural art: clay and marble statues, objects of silver and ivory (in particular, the remarkable rhytons decorated with representations in high relief), and terra-cotta statuettes.

During the 4th and 5th centuries public life and creative activity declined but in the 6th and 7th centuries there was a renewed upsurge of artistic culture. Life was transferred from towns to rural districts where majestic feudal castles with keeps were built, made of sun-dried brick and *pakhsa* (beaten clay), and with massive bases and "grooved" walls. Christian monasteries and churches were erected, as well as Zoroastrian fire temples and necropolises with ossuaries. The temple of Kei-Marzuban at Merv (perhaps a Buddhist temple), which was adorned with sculptural and painted representations, is known from written descriptions.

Interrupted in the mid-7th century by the Arab conquest, feudal culture developed again in the 9th century and continued until the early 13th century, especially under the Seljuks (see SELJUK ART) and the Khwarizm (q.v.) shahs. The growth of towns caused crafts and trade to flourish and fostered an upsurge in building activity. The use of baked bricks was widespread, and ornamental effects were obtained with patterned brickwork, carved bricks, and incised (carved) stucco. The walls were decorated with murals. In the 12th century colored tiles appeared. Powerful town walls flanked by semicircular towers and surrounded by moats were constructed. In the towns and suburbs well-arranged two-storied houses with a cruciform, central-plan, domed hall or internal courtyard (the Merv oasis) were erected. With the spread of Islam rich mosques of the closed-courtyard type were erected (at Dandankan, 10th–11th cent.; at Misrian, early 13th cent.), as well as the semiopen type (at Talkhatan, ca. 1096; at Nysa, 12th cent.). Next to the mosques rose slender minarets (at Misrian, 1102 and early 13th cent.). Along the caravan routes large caravansaries were built with four-aiwan courtyards and impressive entrance portals. The mausoleums were built on a central plan, with a pointed and pryamidal dome; the most outstanding examples are preserved at Merv, Urgench, and Serakhs. Two major architectural schools stand out: that of Khwarizm and that of Khorasan.

The crafts were highly developed and famous — textiles, glassware, metalwork, and superb ceramics richly ornamented, incised, and glazed, with geometric, plant, epigraphic, and figural motifs (human figures, animals, and birds).

The Mongol invasion (1219–21) paralyzed the development of the artistic culture for almost a century. In the 14th century, during the period when Urgench flourished, mausoleums, mosques, and other edifices were built there, characterized by elaborate compositions and sumptuous multicolored tile and mosaic facings (Tyurabek-khānym Mausoleum). Ceramic vessels began to be produced with rich polychrome or impressed ornamentation of plant and, infrequently, zoomorphic motifs and inscriptions; splendid carpets were made to whose beauty Marco Polo testified.

In the 15th century only isolated monumental constructions were built in southern Turkmenistan. The decline of urban culture lasted from the 16th century to the 1880s. A high level was preserved in the applied arts connected with the nomadic way of life — the weaving of patterned cloth and, especially, of artistic carpets that varied from tribe to tribe (the Salur, Tekke, Beshir, and Yomud ranked as the finest). The strict patterns based on octagonal shapes (tribal symbols of the sun), lavish borders, intense red tones, and the elegant compositions characterize the consummate perfection of the Turkmenian carpets. After the incorporation of Turkmenistan into Russia (2d half of 19th cent.), the towns of Ashkhabad, Mary, and Chardzhvu were constructed according to principles of Russian town planning.

During the Soviet period colossal projects of rehabilitation of old towns and construction of new ones were carried out. Ashkhabad was almost completely rebuilt after the earthquake of 1948. Architecture, after using motifs of medieval Turkmenian architecture (ogee arches and ornately patterned walls and ceilings) and turning to the classical heritage, arrived at a sober use of modern forms and construction techniques.

Painting and graphic arts developed. In 1920 an art studio was founded in Ashkhabad (later the Udarnaya School of Eastern Art, which existed until 1925) in which local artists, including the leading Turkmenian artist B. Nūr 'Alī (b. 1900), received their training. In the second half of the 1930s the Ashkhabad Art School (now the Rustaveli Art School) and the Museum of Figural Art were opened. During the 1930s an important role was played by the painters S. N. Beglyarov (1898–1950), I. I. Cherinko (1904–48), Yu. P. Daneshvar (1912–48), and E. M. Adamova (b. 1913). After World War II the following artists were active: Ya. Annanurov (b. 1916), N. Dovodov (b. 1921), A. Khadzhiev (b. 1924), Kh. Allaberdyev (b. 1920), G. F. Babikov (b. 1911), and N. Khodzhamukhamedov (b. 1927). In the 1950s and early 1960s an important place was occupied by artists who had completed their training in Moscow and Leningrad: A. Kuliev (b. 1918), G. Ya. Brusentsov (b. 1927), A. Amangeldyev (b. 1932), and especially I. Klychev (b. 1923).

BIBLIOG. E. V. Zhuravleva and V. N. Chepelev, Iskusstvo Sovetskoi Turkmenii (Art of Soviet Turkmenistan), Moscow, Leningrad, 1934; N. M. Bachinski, ed., Arkhitekturnye pamyatniki Turkmenii (Architectural Monuments of Turkmenistan), Moscow, Ashkhabad, 1939; B. V. Veimarn, Iskusstvo Srednei Azii (Art of Central Asia), Moscow, Leningrad, 1940; B. N. Zasypkin, Arkhitektura Srednei Azii (Architecture of Central Asia), Moscow, 1948; N. M. Bachinski, Antiseismika v arkhitekturnykh pamyatnikakh Srednei Azii (Antiseismic Features in the Architectural Monuments of Central Asia), Moscow, Leningrad, 1949; M. E. Masson, ed., Trudy Iuzhno-Turkmenistanskoi arkheologicheskoi kompleksnoi ekspeditsii [YUTAKE] (Transactions of the Archaeological Expedition to Southern Turkestan (YUTAKE)), 12 vols., Moscow, Ashkhabad, 1949–63; F. V. Gorel', Kovry (Carpets), Moscow, 1950; V. A. Lavrov, Gradostroitel'naya kul'tura Srednei Azii (Urban Civilization of Central Asia), Moscow, 1950; A. M. Pribytkova, Arkhitektura Turkmenskoi SSR (Architecture of the Turkmen SSR), Arkhitektura respublik Srednei Azii, Moscow, 1951, pp. 184–214; A. A. Akhmedov et al., Kovry Turkmenskoi SSR (Carpets of the Turkmen SSR), Moscow, 1952; A. Pribytkova, Pamyatniki arkhitektury XI veka v Turkmenii (11th-Century Architectural Monuments in Turkmenistan), Moscow, 1955; G. A. Pugachenkova and L. Ya. El'kovich, Ocherki po istorii iskusstva Turkmenistana (Essays on the History of Turkmen Art), Ashkhabad, 1956; Izobrazitel'noe iskusstvo Turkmenskoi SSR (Fine Art of the Turkmen SSR), Moscow, 1957; A. M. Pribytkova, Materialy po zodchestvu Turkmenii (Materials on Turkmen Architecture), Arkhitekturnoe nasledstvo, 8, 1957, pp. 143–64; G. A. Pugachenkova, Puti razvitiya arkhitektury Iuzhnogo Turkmenistana pory rabovladeniya i feodalizma (Paths of Development of the Architecture of Southern Turkmenistan in the Eras of Slavery and Feudalism), Moscow, 1958; S. P. Tolstov, ed., Trudy Khorezmskoi arkheologo-etnograficheskoi ekspeditsii AN SSSR (Transactions of the Kkwarizm Archaeological-Ethnographical Expedition of the USSR Academy of Sciences), II, IV, Moscow, 1958–59; V. M. Masson, Drevnezemledel'cheskaya kul'tura Margiany (The Ancient Agricultural Civilization of Margiana) (MIA, 73), Moscow, 1959; W. M. Masson, Drevnie zemledel'tsy na yuge Turkmenistana (Ancient Agricultural Civilization in Southern Turkmenistan), Ashkhabad, 1959; K. A. Adykov, Koine-Serakhs, Ashkhabad, 1960.

Art centers. Ashkhabad. The capital (since 1924) of the Turkmenian S.S.R., Ashkhabad was founded in 1881 as a military outpost

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

on the site of a medieval village. It became a town of some importance when the Transcaspian railroad was constructed, and has developed greatly in the Soviet period, especially after the 1948 earthquake.

Museums: Historical Museum (1926), archaeological collections; an ethnographical museum (1899), carpets and other minor arts, archaeological material; Museum of Figural Art (1938), rare carpets, Turkmenian, Russian, and European art.

Near Ashkhabad are a number of important archaeological monuments. At the tells of Anau excavations have uncovered ancient agricultural settlements (4th–1st millennium B.C.) with remains of houses of sun-dried brick, pottery, and terra-cotta statuettes; in the vicinity is a medieval fortified town with ruins of a majestic mosque (1456). In the desert of Kara Kum are the ruins of Nysa (see VIII, col. 281), the main Parthian city from about 250 B.C. to the 3rd century of our era and one of the major towns of Khwarizm in medieval times. The remains include the Parthian town surrounded by walls with numerous towers (New Nysa), the adjacent suburb, and the royal Mikhrdatkirt fort (Old Nysa). Excavations conducted over many years have uncovered remains of Parthian buildings (temples, palaces, and storehouses), an archive of Parthian documents, marble and clay sculptures, highly artistic objects of metal and ivory (rhytons and turned furniture), and medieval ceramics and glass.

BIBLIOG. R. Pumpelly, Explorations in Turkestan: Expedition of 1904, Washington, 1908; Trudy YUTAKE, I, II, Ashkhabad, 1949–51; G. A. Pugachenkova, Nisa, Ashkhabad, 1958; G. A. Pugachenkova, Mechet' Anau (The Mosque of Anau), Ashkhabad, 1959; M. E. Masson, EAA, s.v. Nisa Parthica.

Merv. This huge complex of ruins on the right bank of the Murghab River is now a state museum. It includes: the ancient nucleus of Erk Kale (1st millennium B.C.); the classical town of Antioch of Margiana (Gyaur Kale), which flourished in the Parthian period (XII, FIG. 676); the medieval town of Sultan Kale with suburbs (9th–early 13th cent.), and the Timurid town of Abdullakhan Kale and Bairamalikhan Kale (from the 15th cent.). Soon after the founding of New Merv (1824, now Mary), the original Merv decayed. Remaining architectural monuments include the powerful defensive walls; houses with "grooving" (7th–10th cent.); the Mausoleum of Sultan Sanjar (mid-12th cent., built by Muḥammad ibn-'Azīz al-Sarakhsi) — a majestic, central-plan, domed edifice with a tall cubical base surmounted by an an arched gallery and crowned by a dome on a drum; the Mausoleum of Muḥammad ibn-Zaid (1112–13), which has preserved its elaborate courses of designed bricks; an odd building with two portals (15th cent.) near the graves of Buraidā and Ga'far; and the Mosque of Hājjī Yūsuf (16th cent.) with a vaulted aiwan. Excavations have uncovered houses, castles, a Christian monastery, a Buddhist stupa (3d cent.), Moslem religious buildings, and tradesmen's districts, in particular the district of the artisans who produced the glazed pottery.

BIBLIOG. V. A. Zhukovski, Razvaliny Starogo Merva (Ruins of Old Merv), St. Petersburg, 1894; V. V. Bartol'd, K istorii Merva (On the History of Merv), St. Petersburg, 1909; E. Cohn-Wiener, Die Ruinen der Seldschuken Stadt von Merv und Mausoleum Sultan Sandshars, Jhb. der asiatischen Kunst, II, 1925, pp. 114–22; A. Jakoubovsky, Merw al-Shahadjan, E. of Islam, sup., 1934, pp. 146–49; N. M. Bachinski, ed., Arkhitekturnye pamyatniki Turkmenii (Architectural Monuments of Turkmenistan), Moscow, Ashkhabad, 1939; V. I. Pilyavski, Syrtsovye sooruzheniya drevnego Merva (Raw Material Construction of Ancient Merv), Soobshcheniya Inst. istorii i teorii arkhitektury Akad. arkhitektury SSSR, 8, 1947, pp. 47–72; V. I. Pilyavski, Arkhitektura drevnego Merva (Architecture of Ancient Merv), Nauchnye trudy Leningradskogo izhenerno-stroitel'nogo inst., 10, 1950, pp. 95–122; M. E. Masson, Novye dannye po drevnei istorii Merva (New Data on the Ancient History of Merv), Vestnik drevnei istorii, 4, 1951, pp. 89–101; G. A. Pugachenkova, Puti razvitiya arkhitektury Yuzhnogo Turkemnistana pory rabovladeniya i feodalizma (Paths of Development of the Architecture of Southern Turkmenistan in the Eras of Slavery and Feudalism), Moscow, 1958; G. A. Pugachenkova, Stary Merv (Old Merv), Ashkhabad, 1960; Keramika antichnogo i srednevekovogo Merva (Ceramics of Ancient and Medieval Merv), Ashkhabad, 1962.

Urgench. The ancient town of Urgench, on the left bank of the Amu Darya River, is near the modern village of Kunya Urgench. It was the largest town and capital (late 10th cent.–1221) of Khwarizm, and was situated on one of the main routes from eastern Europe to Central Asia. It flourished in the 10th–14th century; in the 17th century the inhabitants were transferred to New (Novo) Urgench (the present town of Urgench in the Uzbek S.S.R.) and the old town died out. Interesting architectural monuments are: the mausoleums of Fakhr ad-Dīn Rāzī (12th cent.) and of Tekesh (late 12th–early 13th cent.), with an original pyramidal dome; the minaret of Qutlugh-Tīmūr (1333; ca. 203 ft. high); the gates of a caravansary decorated with tiles (14th cent.); the Mausoleum of Najm ad-Dīn Kubrā (1320s) with splendid tile facings; the Mausoleum of the Urgench dynasty of the Sufs (1360s), known as the Tyurabek-khānym Mausoleum, with a complex distribution of space and a noteworthy mosaic ceiling in the dome of the main hall.

BIBLIOG. A. Yu. Yakubovski, Razvaliny Urgencha (The Ruins of Urgench), Moscow, 1930; N. M. Bachinski, ed., Arkhitekturnye pamyatniki Turkmenii (Architectural Monuments of Turkmenistan), Moscow, Ashkhabad, 1939; V. Pilyavski, Urgench i Mizdakhkan, Moscow, 1948; S. P. Tolstov, ed., Trudy Khorezmskoi arkheologo-etnograficheskoi ekspeditsii AN SSSR (Transactions of the Khwarizm Archaeological-Ethnographical Expedition of the USSR Academy of Sciences), II, Moscow, 1928 (articles by N. N. Vakturskaya, A. G. Turgenev-Amitirov, G. A. Fedrov-Davidov, and M. S. Lapirov-Skoblo); A. M. Pribytkova, Mavzolei Fakhr-ad-din-Razi v Kunya-Urgenche (The Mausoleum of Fakhr ad-Dīn Rāzī at Kunya Urgench), Arkhitekturnoe nasledstvo, 13, 1961, pp. 189–98.

UZBEKISTAN (Uzbek S.S.R.). *Historical and artistic periods. a. Antiquity.* Rock paintings fom the Paleolithic and Neolithic periods exist in the Zaraut-Sai gorge (in the Surkhan-Darya district; expressive representations of hunt scenes and animals) and in the Khojikent and Bastandyk mountains (deer, wild oxen, and goats in contour). Traces of settlements and clan dwellings have survived in the Bukhara oasis and in Khwarizm dating from the Neolithic period. The pottery of this time had roughly impressed, incised, and sketched ornamentation. In the Bronze Age the stock-raising population made pottery with incised designs of triangles, zigzags, fir trees, and stripes; in the agricultural settlements of Fergana vessels were produced that were painted red and black and had triangular, rhomboid, and net-and-dash ornamentation.

In the 4th century B.C. Alexander the Great found large fortified towns in Bactria and Sogdiana (e.g., Marakanda, mod. Samarkand). The houses were decorated with representations from themes of local tales. From the 3d century B.C. to the 3d century of our era an artistic culture with most original features was formed; in the southern regions Hellenistic and, later, Indian connections are clearly evident. Town planning was well developed. A regular, right-angled plan, massive walls, and fortified gates are peculiar to a whole group of ancient towns in Khwarizm (Dzhanbas Kale, see VIII, col. 1004; Ayaz Kale, see VIII, col. 1005; Toprakkala with a huge palace of the rulers of Khwarizm, see VIII, cols. 1006–07, PL. 389) and in Tokharistan (Dalverzin Tepe and Karabag Tepe). During this period numerous town fortifications, houses, palaces, and temples were built. Walls were made of large sun-dried bricks and beaten clay; beamed roofs and colonnades were in use and, later, arches and vaults of sun-dried brick. After Buddhism penetrated to the southern districts of Uzbekistan in the first centuries of our era Buddhist stupas and monasteries were erected; remains survive at Termez and Airtam.

A synthesis of the arts was one of the outstanding stylistic features of the ancient artistic culture of Uzbekistan. Painted clay statues of royal personages, divinities, warriors, and grotesque creatures that adorned an eight-room house (beginning of our era) excavated at Khalchayan (southern Uzbekistan) are individualized and probably most of them were portraits. In the south the sculpture of the first centuries of our era shows perceptible connections with the school of Gandhara (q.v., the frieze from Airtam, 1st–2d cent.). The statues from the palace of Toprakkala (3d cent.) in Khwarizm are diverse in subject and monumental in style, but they evince a certain aridity in execution (VIII, PLS. 386–388). The wall paintings from this palace are distinguished by vigorous lines, a broad range of colors, and diversity of themes (court ladies and youths, a female harpist, a tiger among rushes, VIII, PL. 390). The decorative minor arts are represented by Bactrian toreutics (cups with portrayals of a winged goddess, amazons), statuettes from Bactria, Khwarizm, and especially Sogdiana (mostly representations of local goddesses), and ceramics (sometimes with compositions executed in relief).

b. Medieval and modern periods. In the 6th–7th century the main form of architecture was the severe, fortified, feudal keep-castle — a massive, two-storied edifice of sun-dried brick or beaten clay with a steep socle and smooth or "grooved" walls (Teshik Kale in Khwarizm, see VIII, col. 1008; Ak Tepe near Tashkent). Palace and cult buildings were erected, decorated with paintings, sculptures, and carvings. The wall paintings in the castle of Balalyk Tepe depict a banquet (see XIII, col. 132); those in the palace of Varakhsha show a fight between a warrior and two wild beasts and a procession of animals. The style of the wall paintings is refined, the compositions are either majestic or full of dynamic force, the figures are types, and the manner of painting is flat. Decorative elements stand out especially clearly in the stucco decoration at Varakhsha, in which many different ornamental motifs are combined with the main compositions. In sculpture expressive figures, mainly of males (Sogdian and Turkic horsemen, local gods), were created.

In the 9th–13th century town life developed and flourished. The scale of building increased; baked brick and mortar of plaster were used, the vaulting technique was perfected, and embellishment grew richer. Ruins of the most outstanding monuments of civil

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

architecture have survived: the feudal estate at Kyrk-kyz (9th cent.), rulers' palace (11th–12th cent.) at Termez, and caravansary of Ribaṭ-i-Malik (11th cent.) near Bukhara, which combined "grooved" walls with a portal entrance (*peshtak*). With the establishment of Islam many mosques were erected, which were the principal ideological and social centers of towns and villages. A typical town mosque of the 12th century is that of Maghāk-i 'Aṭṭārī (closed in appearance, pierced, with an elegant façade) and a typical suburban mosque is that of Namāzgāh (1119, with an ornate mihrab wall and an open arched gallery), both in Bukhara. A definite type of minaret evolved, with a circular plan and a tall, tapering tower subdivided by horizontal ornamental bands (minaret in Termez, 1032; Kalyān minaret in Bukhara, 1127; and minaret at Vabkent, 1196–98); sometimes the stem of the minaret was grooved (in Jar Kurgan, 1108). The theme of the glory that was to redound to the feudal overlords after their death was reflected in impressive mausoleums organized around a central plan, a dome, and, later, a portal. Geometric designs predominated in architectural ornamentation; widespread use was made of Arab epigraphy; plant motifs were not used much. In the minor arts (metalwork, ceramics), along with geometric plaited designs and inscriptions, an important role was played by zoomorphic and plant motifs; magnificent polychrome glazed ceramics were created by various local schools (e.g., the Samarkand type, XII, PLS. 383–386).

In the 14th–15th century, after the destructive consequences of the Mongol invasions were overcome, artistic culture flourished again. In monumental architecture, whose proportions were especially grandiose under Tīmūr Lenk (Tamerlane) and Ulugh-Beg, various types of buildings were perfected: mausoleums and mosques with a rectangular court and four liwans (Bībī Khānum Madrasah in Samarkand) and madrasahs built on a central plan with a monumental entrance and a liwan (madrasahs of Ulugh-Beg in Bukhara, Samarkand, PL. 68, and Gizhduvan). Mausoleums progressed from the single-domed type with a portal (Gūr-i-Mīr in Samarkand, PL. 68, FIG. 99; Shāh-i-Zind tombs in Samarkand, PLS. 69–70), or two-chambered ones (mausoleums of Saīf ad-Dīn Bākharzī and of Bayān Kūlī Khan in Bukhara) to more complex ones (mausoleums of Aq Saray and of Ishrat Khan in Samarkand). Bold vaulting and dome systems were worked out. Embellishment consisted of carving in stone and wood, polychrome majolica and mosaics, and wall paintings with a gold background (see also TIMURID ART).

The greatest achievement in architecture of the 14th–17th century was the creation of large architectural complexes: the Rigistan (XII, FIG. 121) and Shāh-i-Zind (PLS. 69, 70) in Samarkand and the Pā-i Kalyān, Chār-Bakr, and Lab-i Khauz in Bukkara. After a period of decline in the late 18th and the early 19th century architectural activity commenced in Khiva, Bukhara, and the towns of the Kokand khanate. Characteristic features of folk architecture were the small inner courtyards with airy liwans supported by columns; the houses were decorated with carving in wood and plaster and with paintings on ceilings and walls.

The polychrome ceramics of the 14th century gave way in the 15th–16th century (under the influence of Chinese porcelain) to monochrome painting in blue on a white background or in black on light blue. The names of numerous miniatures artists who worked in Samarkand in the 15th century are known: 'Abd-al-Hājj, Aḥmad Bāgh-i Shamālī, Shihāb ad-Dīn 'Abdullāh, and Zahīr ad-Dīn Azhar. In the 16th and 17th centuries miniature painting developed along the lines of a single school connected with the artistic traditions of Timurid Herat, but it presented traits of an original style: lucid compositions, a rich but restrained color scheme, and scenes with few figures. The leading artists of this school were Maḥmūd Muzāhib, 'Abdullāh, Muḥammad-Chagry Muḥāsin, and especially Muḥammad Murād of Samarkand, who illustrated a *Shāh-nāma* of 1556 for the prince of Khiva (Tashkent, Inst. of Oriental Studies). In the 17th century some major artists worked in Bukhara and Samarkand — Hājjī-Geda'i, Hājjī-Muqīm, Āvāz-Muḥammad, the anonymous illustrator of the *Shāh-nāma* of 1628, and others — but the exodus of the masters to other countries had already begun. The Fergana manuscript of the works of Navā'ī (1824) and the miniatures of Aḥmad Kalle (2d half of 19th cent.) testify to the fact that this art had grown stereotyped. In the 18th–19th century the crafts were developed: various schools of ceramics (the Rishtan one was especially outstanding); chasing on copper and sewing in gold thread (arts for which Bukhara was famous); embroidery; and handwoven and printed cloth.

With the incorporation of Turkistan into Russia (2d half of 19th cent.) the newest principles of town planning were adopted (in Tashkent, Namangan, Fergana, Samarkand, etc.). Some Russian artists related their art to Turkistan: V. V. Vereshchagin (1842–1903), N. N. Karazin (1842–1908), and I. S. Kazakov (1873–1935).

c. The Soviet period. Town building was undertaken on a vast scale. The development of architecture in the 1920s and 1930s was within the context of contructivism and functionalism, yet used the local architectural heritage. In the postwar years the revival of the local heritage has manifested itself in the use of ogive arches, liwans supported by columns, and rich ornamental carving.

Easel painting, graphic art, and, later, sculpture developed. In 1918 the Samarkand Art School was opened and in 1919 the Regional Turkistan Art School in Tashkent (now the Benkov Art School). Artists who had been working in Uzbekistan before the Revolution (I. S. Kazakov; L. L. Bure; A. V. Isupov, 1889–1957) engaged in teaching activities. In the 1920s, along with realistic tendencies existing in book and poster graphic art (L. L. Bure, 1887–1943; V. L. Rozhdestvenski, 1897–1949), stylization, decorativism, and primitivism also prevailed. Working in the 1930s and 1940s were the realist painters P. P. Benkov (1879–1949), N. V. Kashina (b. 1896), Z. M. Kovalevskaya (b. 1902), O. K. Tatevosyan (b. 1889), and B. Khamdani (1910–43) and the graphic artists V. E. Kaidalov (b. 1907), S. A. Malt (b. 1900), and M. V. Reikh (b. 1904). Among the leading younger artists are painters U. Tansykbaev (b. 1904), N. G. Karakhan (b. 1900), V. Eremyan (b. 1897), and R. Timurov (b. 1912) and the portrait painters N. V. Kashina, L. Abdullaev (b. 1912), A. Abdullaev (b. 1918), V. A. Fadeyev (b. 1912), R. Akhmedov (b. 1924), and T. Oganesov (b. 1922). Themes of history and modern life are employed by M. A. Arinin (b. 1897), V. I. Ufimtsev (b. 1899), M. Saidov (b. 1923), V. Inogamov (b. 1919), and V. N. Zhmakin (b. 1928). Working in the field of landscape painting are the young artists V. A. Volkov (b. 1928), A. A. Krivonos (b. 1930), and G. I. Ulko (b. 1925). In sculpture the work of A. N. Ivanov (b. 1905), G. G. Massonts (b. 1904), O. S. Korzhinskaya (b. 1900), P. P. Chelyshev (b. 1917), and N. E. Feodoridis (b. 1924) is noteworthy. The traditional forms of the minor arts are being developed. Carving in plaster, stone, and wood are used for large public buildings. The blending of professional and folk art is especially fecund in textiles.

BIBLIOG. V. Chepelev, Iskusstvo sovetskogo Uzbekistana (Art of Soviet Uzbekistan), Moscow, Leningrad, 1935; K. V. Trever, Pamyatniki greko-baktriiskogo iskusstva (Monuments of Greco-Bactrian Art), Moscow, Leningrad, 1940; B. V. Veimarn, Iskusstvo Srednei Azii (Art of Central Asia), Moscow, Leningrad, 1940; V. Chepelev, Ob antichnoi stadii v istorii iskusstva SSSR (On Classical Phases of USSR Art History), Moscow, Leningrad, 1941; R. N. Frye, Sughd and the Sogdians: A Comparison of Archaeological Discoveries with Arabic Texts, JAOS, LXIII, 1943, pp. 14–16; Materialy po istorii i teorii arkhitektury Uzbekistana (Materials for the History and Theory of Architecture in Uzbekistan), I, Moscow, 1948; B. V. Veimarn, Arkhitekturno-dekorativnoe iskusstvo Uzbekistana (Architectural Decorative Art of Uzbekistan), Moscow, 1948; B. N. Zasypkin, Arkhitektura Srednei Azii (Architecture of Central Asia), Moscow, 1948; R. N. Frye, Notes on the Early Coinage of Transoxiana, New York, 1949; V. A. Lavrov, Gradostroitel'naya kul'tura Srednei Azii (Urban Civilization of Central Asia), Moscow, 1950; A. Roginskaya, Zaraut-Sai: Zapiski khudozhnika (Zaraut-Sai: Memoirs of an Artist), Moscow, Leningrad, 1950; V. A. Dzhakhangirov and D. B. Khazanov, Arkhitektura Uzbekskoi SSR (Architecture of the Uzbek SSR), Arkhitektura respublik Srednei Azii, Moscow, 1951, pp. 7–72; B. L. Voronina, Narodnye traditsii arkhitektury Uzbekistana (Folk Traditions in the Architecture of Uzbekistan), Moscow, 1951; S. P. Tolstov, ed., Trudy Khorezmoskoi arkheologo-etnograficheskoi ekspeditsii AN SSSR (Transactions of the Khwarizm Archaeological-Ethnographical Expedition of the USSR Academy of Sciences), 4 vols., Moscow, 1952–59; Narodnoe dekorativnoe iskusstvo Sovetskogo Uzbekistana (Decorative Folk Art of Soviet Uzbekistan), Moscow, 1955; V. A. Nil'sen, Monumental'naya arkhitektura Bukharskogo oazisa XI-XII vv. (Monumental Architecture of the Bukhara Oasis of the 11th-12th Cent.), Tashkent, 1956; Izobrazitel'noe iskusstvo Sovetskogo Uzbekistana (Fine Art of Soviet Uzbekistan), Tashkent, 1957; Izobrazitel'noe iskusstvo Uzbekskoi SSR (Fine Art of the Uzbek SSR), Moscow, 1957; G. A. Pugachenkova, Pamyatniki arkhitektury Srednei Azii epokhi Navoi (Monuments of Central Asia's Architecture from the Navā'ī Period), Tashkent, 1957; Arkhitekturnoe nasledie Uzbekistana (Architectural Patrimony of Uzbekistan), Tashkent, 1960; G. A. Pugachenkova and L. I. Rempel', Vydayushchiesya pamyatniki izobrazitel'nogo iskusstva Uzbekistana (Notable Monuments of the Fine Art of Uzbekkstan), Tashkent, 1960; B. V. Veimarn and N. V. Cherkasova, Iskusstvo Sovetskogo Uzbekistana (Art of Soviet Uzbekistan), Moscow, 1960; G. L. Chepelevetskaya, Suzani Uzbekistana (Sūzanī of Uzbekistan), Tashkent, 1961; L. I. Rempel', Arkhitekturny ornament Uzbekistana (Architectural Decoration of Uzbekistan), Tashkent, 1961; Iskusstvo zodchikh Uzbekistana (Art of the Architects of Uzbekistan), 2 vols., Tashkent, 1962–63; G. A. Pugachenkova, K probleme sredneaziatskoi shkoly miniatyuristov XVI–XVII vv. (On the Problem of the Central Asian School of Minaturists of the 16th–17th Cent.), Trudy XXV mezhdunarodny kongress vostokovedov (Moscow, 1960), III, Moscow, 1963, pp. 102–08. See also the bibliogs. for KHWARIZM; SOGDIANA.

Art centers. Tashkent. The capital of the Uzbek S.S.R. is situated in the valley of the Chirchik River. It was mentioned in Chinese annals in the 2d century B.C. under the name of Yuni; in the Middle Ages it was a major feudal town (until the 11th cent. under the name of Shash or Chach). The mausoleums in the former cemetery of Shaikhān-taur, including the Yūnus Khan Mausoleum, date from the 15th century. The Kukeltash Madrasah was built in the 1560s. The Barāk Khan Madrasah (1st half of 16th cent.) includes two mausoleums, one of them the burial of the Shaybanids of Tashkent (1531).

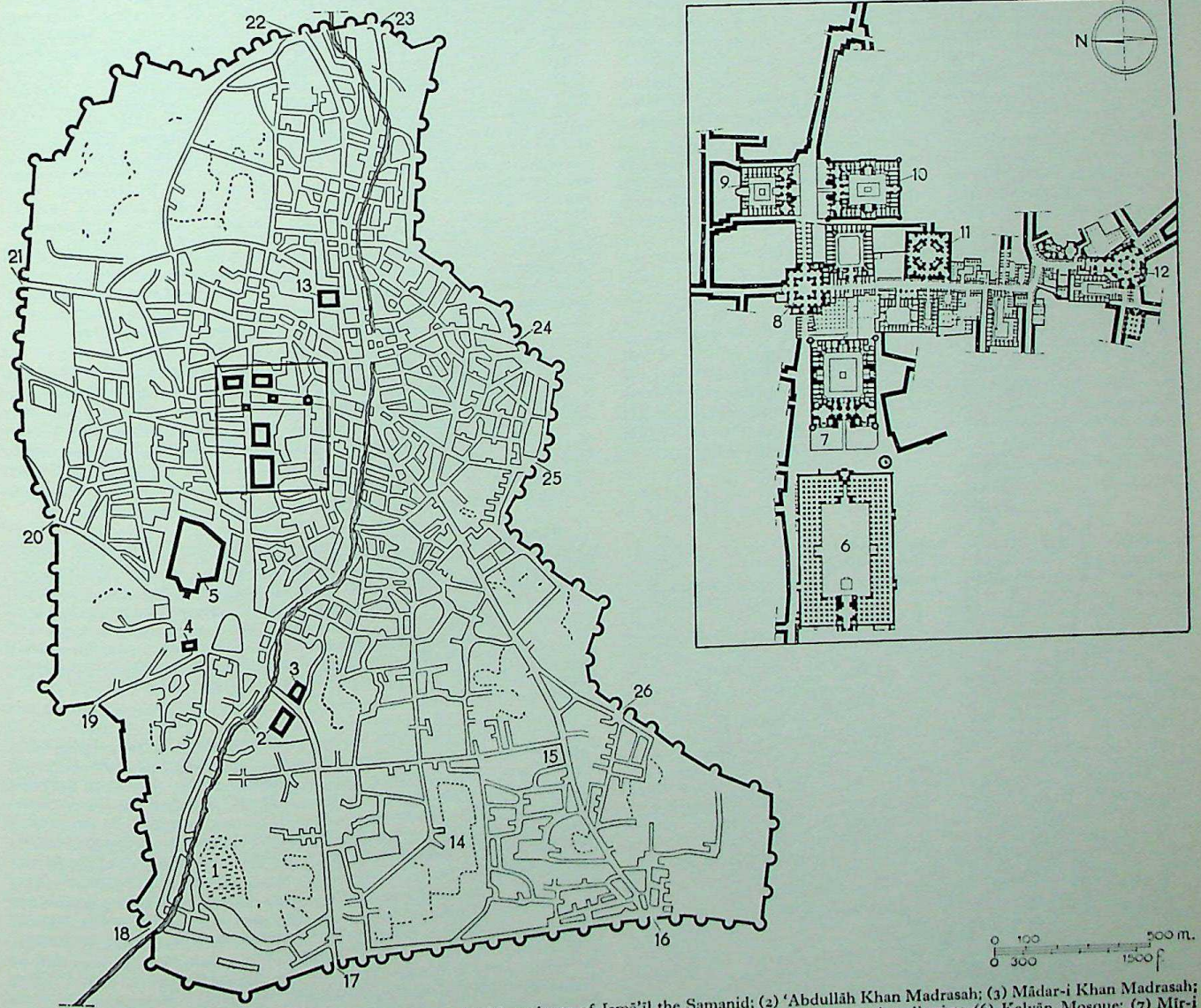
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

The Kaffāl Shāshī Mausoleum (1541) was built by Ghulam-Ḥusayn. After the union with Russia (1865) the new town was constructed next to the old feudal town with its chaotic layout. During the Soviet period both parts of the city have fused and their layout has been radically transformed. The Museum of Art of the Uzbek S.S.R. was founded in 1918; there is also a Fine Arts Museum.

BIBLIOG. W. Bartol'd, Tashkent, E. of Islam, IV, 1934, pp. 687–89; A. Polupanov and Yu. Yaralov, Tashkent, Moscow, 1949; M. E. Masson, Proshloe Tashkenta (The Past of Tashkent), Izvestiya Akad. nauk Uzbekskoi SSR, 4, 1954, pp. 105–32; G. A. Pugachenkova and L. I. Rempel', Vydayushchiesya pamyatnik arkhitektury Uzbekistana (Notable Monuments of Uzbekistan's Architecture), Tashkent, 1958, pp. 143–51; Stroitel'stvo i rekonstruktsiya gorodov, 1945–57 (Building and Reconstruction of Cities, 1945–57), II, Moscow, 1958; Zodchestvo Uzbekistana (Architecture of Uzbekistan), Tashkent, 1959.

Bukhara. The city is situated in the valley of the Zeravshan River, on the banks of the Shakhrud Canal. The settlement on the site of Bukhara dates from the beginning of our era. A town (named Numijket) began to develop in the 6th–7th century; in the 9th–10th century Bukhara was the capital of the Samanids, in the 11th–12th century of the Qarakhanids, in the second half of the 16th century of the Shaybanids, and in the 17th century of the Astrakhanids. From the end of the 18th century to 1920 it was the capital of the emirs of the Manqyt dynasty. During the Soviet period many houses, schools, and public buildings have been constructed.

The many fine architectural monuments give the city the aspect of a "museum." The *arg* (citadel) is the nucleus of the feudal town and was constructed over many centuries. The mausoleum of Ismā'īl the Samanid (early 10th cent.) is a square, central-plan, domed building with patterned brickwork on the exterior and interior walls (XII, PLS. 381, 382, FIG. 676). The Maghāk-i 'Aṭṭārī Mosque was built in the 12th century (rebuilt in the 16th cent.). The Pā-i Kalyān architectural complex consists of the Kalyān minaret (1127), Kalyān Mosque (1514), and the Mīr-i 'Arāb Madrasah (1535–36). The Ulugh-Beg Madrasah (1417) was built by Ismā'īl ibn-Ṭāhir ibn-Maḥmūd al-Isfahānī. The 'Abd al-'Azīz Khan Madrasah dates from 1652. The Kösh Madrasah consists of the Mādar-i Khan Madrasah (1566–67) and the 'Abdullāh Khan Madrasah (1588–90). The Lab-i Khauz (16th and 17th cent.) consists of the Kukeltash Madrasah, the Nādir Dīvān-Beg Madrasah and Khankah, and a large reservoir. The Bālā-i Khauz is made up of a mosque (1712) and a minaret (1917, built by Ustād Shirīn Murādov). Other mausoleums are that of Chashma-i Ayyūb (14th cent.), of Bayān Kūlī Khan (14th cent.), and of Saif ad-Dīn Bākharzī (13th–15th cent.). Balyand Mosque (16th cent.) has a picturesque interior. Buildings of the 16th century include the Zayn ad-Dīn Khankah (1st half of 16th cent.), the Faizābād Khankah (1598–99), and some domed commercial buildings. The Chār-Minār Madrasah dates from 1707. In the environs are the Namāzgāh Mosque (1119, with a 16th-cent. gallery) and the Chār-Bakr complex (16th cent.). The Historico-Ethnographical Museum of Bukhara was founded in 1927.



Bukhara, plan of the Islamic city. Principal monuments: (1) Mausoleum of Ismā'īl the Samanid; (2) 'Abdullāh Khan Madrasah; (3) Mādar-i Khan Madrasah; (4) Bālā-i Khauz Mosque; (5) *arg* (citadel and Historico-Ethnographical Mus.). Inset: Detailed map of the market district: (6) Kalyān Mosque; (7) Mīr-i 'Arāb Madrasah; (8) Ṭaq-i Zargarān Bazaar; (9) Ulugh-Beg Madrasah; (10) 'Abd al-'Azīz Khan Madrasah; (11) Tim-i 'Abd al-'Alī Khan; (12) Ṭāq-i Tilpak-Furushān Bazaar; (13) Kukeltash Madrasah; (14) complex of Khudāyadād; (15) Jūybār-i Kalyān Madrasah. (16–26) Fortified gates: (16) Karakul; (17) Shirgarān; (18) Tālipach; (19) Uglan; (20) of the Imām; (21) of Samarkand; (22) of the Mazār (Cemetery); (23) of Karshin; (24) Ṣalla Khan; (25) Namāzgāh; (26) of Sheikh Jalāl.

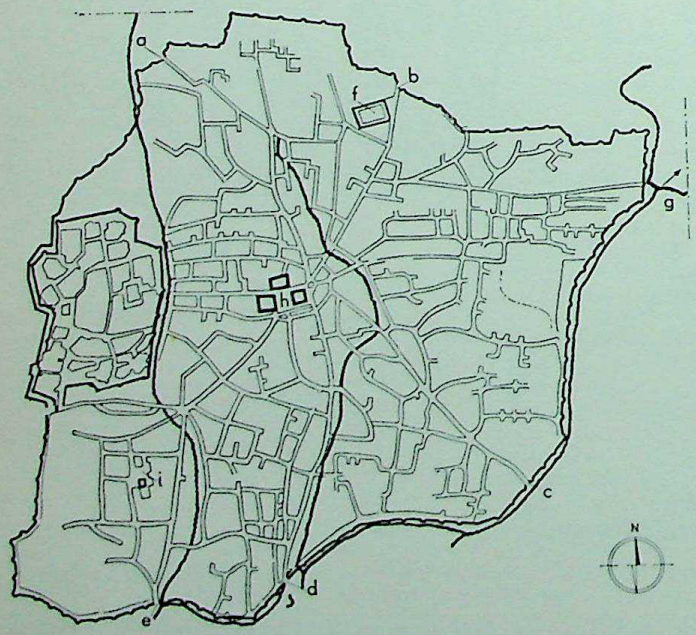
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

BIBLIOG. V. A. Shishkin, Arkhitekturnye pamyatniki Bukhary (Architectural Monuments of Bukhara), Tashkent, 1936; G. A. Pugachenkova and L. I. Rempel', Bukhara, Moscow, 1948; R. N. Frye, The History of Buhkārā, Cambridge, Mass., 1954 (Addenda et corrigenda, HJAS, XIX, 1956, pp. 122–25); R. N. Frye, The Name Bukhārā, HJAS, XIX, 1956, pp. 106–19; R. N. Frye, The Pre-Islamic Rulers of Bukhārā, HJAS, XIX, 1956, pp. 119–22; G. A. Pugachenkova and L. I. Rempel', Vydayushchiesya pamyatniki arkhitektury Uzbekistana (Notable Monuments of Uzbekistan's Architecture), Tashkent, 1958, pp. 55–98; P. Pelliot, Notes on Marco Polo, I, Paris, 1959, pp. 108–09; Zodchestvo Uzbekistana (Architecture of Uzbekistan), Tashkent, 1959; G. A. Pugachenkova, Samarkand, Bukhara, Moscow, 1961; L. I. Rempel', Iz istorii gradostroitel'stva na Vostoke: Materialy po planirovke staroi Bukhary (History of City Planning in the East: Materials on the Planning of Old Bukhara), Iskusstvo zodchikh Uzbekistana, I, Tashkent, 1962, pp. 211–66; Ya. S. Ashurov, Bukhara, 3d ed., Tashkent, 1963.

Khiva. The town is situated on the left bank of the Amu Darya River. According to archaeological evidence it existed in the 6th–8th century; first mentioned as a town of medieval Khwarizm in the 10th century, it became an important center from the second half of the 16th century when the Khiva khans made it their capital. Building activity was especially intensive in the 18th and 19th centuries. Interesting architectural monuments include: the Īchan-Kala — the old feudal town surrounded by walls, containing the citadel Kunya-arg (12th–19th cent.) and other buildings such as the Mausoleum of Sayyid 'Alā ad-Dīn (14th cent.) with a magnificent majolica tombstone; the Jāmi' Mosque with numerous carved wooden columns (11th–late 18th cent.) and a minaret (late 18th cent.); the Mausoleum of Pahlavān Maḥmūd (1835) with a portal and dome, faced with blue and white tiles; and the Tash Khaulī Palace (1832–41). There are numerous madrasahs, including those of Qatlī Murād Īnak (1809), of 'Arab Muḥammad Khan (1838), and of Muḥammad Amīn Khan (1845–55). Noteworthy are the minarets of Sayyid-Beg (1842), of Kuk-Minār (1852–53), and of Pahlavān Kārī (1905). The Museum of History and the Revolution includes ancient artifacts and folk art.

BIBLIOG. Ya. G. Gulyamov, Pamyatniki goroda Khivy (Monuments of the City of Khiva), Tashkent, 1941; G. A. Pugachenkova and L. I. Rempel', Vydayushchiesya pamyatniki arkhitektury Uzbekistana (Notable Monuments of Uzbekistan's Architecture), Tashkent, 1958, pp. 153–74; Zodchestvo Uzbekistana (Architecture of Uzbekistan), Tashkent, 1959.

Samarkand (anc. Maracanda). One of the oldest towns of the U.S.S.R., situated in the valley of the Zeravshan River, it was referred to by Greek authors in the 4th century B.C. under the name of Maracanda. The capital of Sogdiana, later a very important medieval center, Samarkand was destroyed in 1220 by the Mongols. It developed again in the 14th century, and flourished from the late 14th to the first half of the 15th century when it was the capital of Tīmūr and then of Ulugh-Beg; in the early 16th century it was the capital of the Shaybanids. In 1868 it was incorporated into Russia; from 1871, alongside the old town with its narrow winding streets and one-and two-storied houses of beaten clay with flat roofs, a new Samarkand with a regular and radial layout was built.



Samarkand, plan of the Islamic city with monumental complexes of the Timurid and Safavid periods. (*a–e*) Fortified gates: (*a*) Khayrābād; (*b*) Āhanī; (*c*) Firūzā; (*d*) of Sūzangarān; (*e*) of Kūrizkūh; (*f*) remains of the Bībī Khānum Madrasah; (*g*) to the necropolis of Shāh-i-Zind; (*h*) the Rigistan; (*i*) Gūr-i-Mīr Mausoleum.

Excavations have brought to light a paleolithic site in the center of Samarkand. In the ruins of Afrasiyab (on the northern side of Samarkand) the remains of the palace of the Samanids (10th cent.) with rich carved plasterwork and of the Qarakhanid Mausoleum with incised facings of terra cotta have been uncovered. Architectural monuments of the 14th–17th century include: the grandiose Bībī Khānum Madrasah (1398–1405); the Timurid mausoleums of Gūr-i-Mīr (1405, PL. 68, FIG. 99), polygonal in shape, bearing a massive fluted dome on a high drum and with interior "gold-woven" embellishments (wall paintings, an onyx panel, etc.), of Ishrat Khan (1464), and of Aq Saray (1470s) with an original spacious vaulted interior and wall paintings; and the Shāh-i-Zind neocropolis (14th–15th cent., PLS. 69, 70), with carved polychrome terra cotta, majolica, and mosaic decoration. The Rigistan ensemble (XII, FIG. 621) consists of three enormous madrasahs: that of Ulugh-Beg (1417–20, PL. 68), of Shīr Dār (1619–36), and of Ṭila Kārī (ca. 1646–60), all with monumental decorated façades. Near Samarkand are the remains of Ulugh-Beg's observatory (1424–29). The Museum of the Cultural and Artistic History of the Uzbek S.S.R., founded in 1896, has an extremely rich collection of Samarkand antiquities and articles of the minor arts.

BIBLIOG. J. Smolik, Die Timuridischen Baudenkmäler in Samarkand aus der Zeit Tamerlans, Vienna, 1928; J. Markwart, A Catalogue of the Provincial Capitals of Ērānshahr, Rome, 1931, pp. 26–34; A. Yu. Yakubovski, Samarkand pri Timur i Timuridakh (Samarkand in the Time of Tīmūr and the Timurids), Leningrad, 1933; B. Veimarn, Registan v Samarkande (The Rigistan of Samarkand), Moscow, 1946; S. N. Polupanov, Arkhitekturnye pamyatniki Samarkanda (Architectural Monuments of Samarkand), Moscow, 1948; M. E. Masson, Samarkandski Registan (The Rigistan of Samarkand), Trudy Sredneaziatskogo gosudarstbennogo Univ., XI, 1950, pp. 75–90; Sh. E. Ratiya, Mechet' Bibi-khanym v Samarkande (The Mosque of Bībī Khānum at Samarkand), Moscow, 1950; Observatoriya Ulugbeka (The Observatory of Ulugh-Beg) (Trudy Inst. istorii i arkheologii Akad. nauk Uzbekskoi SSR, V), Tashkent, 1953; M. E. Masson, Arkhitekturno-planirovochny oblik Samarkanda epokhi Navoi (Appearance of Samarkand's Architecture and Planning in the Navā'ī Period), Trudy Sredneaziatskogo gosudarstvennogo Univ., XXXI, 1956, pp. 57–84; V. V. Barthol'd, Four Studies on the History of Central Asia, II: Ulugh-Beg (trans. V. and T. Minorsky), Leiden, 1958; Ishrat-Khana, Tashkent, 1958; G. A. Pugachenkova and L. I. Rempel', Vydayushchiesya pamyatniki arkhitektury Uzbekistana (Notable Monuments of Uzbekistan's Architecture), Tashkent, 1958, pp. 99–132; Zodchestvo Uzbekistana (Architecture of Uzbekistan), Tashkent, 1959; P. S. Zakhidov, Mavzolei Bibi-khanym (The Mausoleum of Bībī Khānum), Arkhitekturnoe nasledie Uzbekistana, Tashkent, 1960, pp. 60–74; G. A. Pugachenknova, Samarkand, Bukhara, Moscow, 1961.

Shakhrisyabz (Shahr-i Sabz). This town arose in the 13th–14th century under the name of Kesh; it flourished in the 14th–15th century. Surviving from this period are the portal decorated with dazzling polychrome facings of Tīmūr's huge palace, the Aq Saray; buildings of the Dār al-Sa'ādat complex, including the stately Hazrat-i Imām Mausoleum (part of the Timurid tombs) with a pyramidal dome; and buildings of the Dorut-Tilāvat complex, consisting of the mosques of Kök-gümbez and of Gumbaz-i Sayyidār.

BIBLIOG. M. E. Masson and G. A. Pugachenkova, Shahrisyabz pri Timure i Ulugbege (Shakhrisyabz under Tīmūr and Ulugh-Beg), Trudy Sredneaziatskogo gosudarstvennogo Universiteta, N.S., XLIX, Gumanitarnye nauki, 6, 1953, pp. 17–97; V. L. Voronina, Nekotorye dannye o pamyatnikakh zodchestva Uzbekistana (Some Data on Monuments of Uzbekistan's Architecture), Arkhitekturnoe nasledstvo, 3, 1953, pp. 119–28; G. A. Pugachenkova and L. I. Rempel', Vydayushchiesya pamyatniki arkhitektury Uzbekistana (Notable Monuments of Uzbekistan's Architecture), Tashkent, 1958, pp. 133–42; Zodchestvo Uzbekistana (Architecture of Uzbekistan), Tashkent, 1959.

Termez (anc. Tarmita; Antiochia Tharmata; Tibetan, Tar-mi-ta; Chin., Ta-man, Ta-mo, Ta-mi, Tu-mi; Ar., Tirmid). The town is situated on the right bank of the Amu Darya River. Near the present town lies the huge ruin of ancient Termez, founded by the Greco-Bactrian king Demetrios (2d cent. B.C.) and enlarged in antiquity and the Middle Ages. Among the remains are the defensive walls; a Buddhist cave monastery of the first centuries of our era; the fortified Kyrk-kyz country estate (9th cent.); the rulers' palace (11th–12th cent.) with a reception hall of state whose walls were decorated with lavish carving in plaster; a nine-piered mosque (11th cent.); the cult complex of Hakīmī-al-Tirmizī with remains of superb plaster carving (11th cent.) and a tombstone carved in white marble (15th cent.); and the complex of mausoleums of the Sayyid Sulṭān-Sa'ādat (11th–17th cent.). The Surkhan-Darya Ethnographical Museum, founded in 1933, contains a large collection of local antiquities and figural arts.

BIBLIOG. A. A. Semerov, Proiskhozhdenie termezskikh seiidov i ikh drevnyaya usypal'nitsa "Sultan-Saadat" (The Origin of the Sayyid of Termez and Its Ancient Sepulcher "Sulṭān-Sa'ādat"), Tashkent, 1914; P. Pelliot, Termez dans les textes chinois et tibétains, Doklady Akad. Nauk SSSR, 1929, pp. 297–98; W. Bartol'd, Tirmidh, E. of Islam, IV, 1934, pp. 795–96;

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

B. V. Veimarn, Iz otkryti sovetskogo vostokovedeniya: Ornamentatsiya dvortsa XII veka v drevnem Termeze (From the Opening of Soviet Eastern Studies: The Ornamentation of the 12th-Century Palace of Ancient Termez), Iskusstvo, 6, 1934, pp. 104–13; W. W. Tarn, Tarmita, JHS, LX, 1940, pp. 89–94; Termezskaya arkheologicheskaya kompleksnaya ekspeditsiya 1936 g. (The Archaeological Expedition of 1936 to Termez) (Trudy Uzbekskogo filiala Akademii Nauk SSSR, Istoriya, arkheologiya, 2), Tashkent, 1941; Termezskaya arkheologicheskaya ekspeditsiya (The Archaeological Expedition to Termez), II (Trudy Akad. nauk Uzbekskoi SSR, Istoriya, arkheologiya), Tashkent, 1945; H. W. Bailey, Irano-Indica III, 5: Tar-mi-ta, BSOAS, XIII, 1949–51, pp. 400–03; W. W. Tarn, The Greeks in Bactria and India, 2d ed., Cambridge, 1951, pp. 118–19; A. M. Pribytkova, Zdanie Kyrk-kyz kak obrazets stroitel'noi tekhniki IX veka (The Kyrk-kyz Structure as a Model of 9th-Century Building Technique), Arkhitekturnoe nasledstvo, 13, 1961, pp. 169–80.

Varakhsha (in Arabic geographies Afrakhshah, Barakhshah, Farakhshah, Warakhshah and also Dakhfandūn). The ruined town, covering an area of about 250 acres, is situated about 25 mi. from Bukhara. Archaeological excavations were begun in 1937 and continued in 1947-53. Founded in ancient times, the town flourished in the 7th–8th century and declined in the 11th century. The excavations have exposed the citadel with "grooved" walls and a palace of sun-dried brick of the 7th–9th century. The palace is decorated with wall paintings and stucco in low and high relief (geometric and plant ornamentation, deer, hunt scenes, and fantastic landscapes); see XIII, cols. 131–32.

BIBLIOG. V. A. Shishkin, Arkhitekturnaya dekoratsiya dvortsa v Varakhshe (Architectural Decoration of the Varakhsha Palace), Trudy otdela vostoka Gosudarstvennogo Ermitazha, IV, 1947, pp. 225–92; V. A. Shishkin, Arkheologicheskie raboty 1947 g. na gorodishche Varakhshe (Archaeological Work in 1947 on the Site of Varakhsha), Izevestiya Akad. nauk Uzbekskoi SSR, 5, 1948, pp. 62–70; V. A. Shishkin, Varakhsha, SA, XXIII, 1955, pp. 101–30; Trudy Inst. istorii i arkheologii Akad. nauk Uzbekskoi SSR (Transactions of the Institute of History and Archaeology of the Uzbek SSR Academy of Sciences), VIII, Tashkent, 1956 (articles by V. A. Shishkin, V. A. Nil'sen, S. K. Kabanov, M. K. Urmanovaya, etc.).

Galina PUGACHENKOVA

TADZHIKISTAN (Tadzhik S.S.R.). *Historical and artistic periods.* Rock paintings, mainly of mountain goats, remain from the Neolithic period. Remains have been found of a Bactrian dwelling complex (7th–5th cent. B.C.) in the south. In the Kobadian district gold and silver objects belonging to the Amu Darya hoard were discovered: vessels, figurines of people and animals, and jewelry (5th–2d cent. B.C.). On the lower Vakhsh and Kafirnigan rivers are ruins of towns dating from the late Bactrian and Kushan periods (2d cent. B.C.–3d cent. of our era); the streets are laid out at right angles and the towns are surrounded by walls of sun-dried brick or stone with square towers (see BACTRIAN ART; KUSHAN ART). Hellenistic stone column bases and capitals have been uncovered as well as polished pottery (on a red background), terra cotta, silver coins, and objects of gold and bronze.

In the early medieval period a series of independent feudal dominions (Sogdiana, Usrushan, Khuttal) existed. In the 7th–8th century towns flourished and along the caravan routes isolated castles and fortifications were erected (e.g., Mug, see XIII, col. 125), whose ruins have survived. Building material was clay and sun-dried bricks; in the mountains, stone. Roofs were vaulted or flat and beamed. The appearance of an early medieval town is shown by the excavations of ancient Pyandzhikent (see SOGDIANA): within the town walls were large residential blocks with closely connected buildings of two or three stories with vaulted rooms, square four-piered halls of state, and porticoes; public buildings and workshops were distributed among the domestic buildings. Around the town square were temples of the local religion with a four-piered square hall open to the east and a porticoed façade (XIII, FIG. 130). Secular and cult buildings were adorned with wall paintings representing battle and cult scenes, banquets, and epic subjects, sculpture in the round, bas-reliefs of clay and wood (including wooden caryatids), and painted and carved ornamentation in wood and clay, mostly with a plant motif (XIII, PLS. 83–90). Outside the town walls were two-storied suburban estates and a necropolis with vaulted burial chambers (*nausi*) where small ornamented clay coffins (*astodani*) containing bones were stored. In the valley of the Vakhsh the ruins of an 8th-century Buddhist sanctuary with remains of sculpture have been discovered. Terra-cotta figurines of animals, sacred images with representations of divinities in bas-relief, masks on clay objects, coins with portraits of rulers and heraldic zoomorphic motifs, seals, jewelry, unglazed pottery, and glass objects have been found. In Sogdiana patterned silks were produced and, to judge from the wall paintings, toreutics. After the Arab invasion (1st quarter of 8th cent.) the introduction of Islam disrupted the development of the figural arts.

The period of the formation of the Tadzhik nationality (9th–10th cent.) coincided with the flourishing of the Samanid dynasty (see SAMANID ART). During these and the following centuries the Tadzhiks, who were widely distributed throughout the valley of the Zeravshan River, made a great contribution to the development of Central Asian art, notably in Bukhara and Samarkand (in architecture, miniatures, and the minor arts). Unique archaeological monuments of carved wood (columns, consoles, friezes, and mihrabs) with plant and zoomorphic decoration have survived in the valley of the Zeravshan. Baked brick was employed for the patterned brickwork characteristic of ensuing centuries; for the embellishment of buildings, molded and designed brick (Aq-Astān Mausoleum, 2d half of 10th–early 11th cent.; the two Khwāja Nakhshirān mausoleums, 2d half of 11th-13th cent.) and incised terra cotta began to be used. Stuccowork was also adopted (interior of the palace at Khulbuk, 11th cent.). Incised terra cotta persisted until the 14th century; at the same time a glazed embellishment began to appear on façades (portal of the Muḥammad Bāshsharā Mosque-Mausoleum near Pyandzhikent, 1343). The minor arts included glazed ceramics (widespread in the 8th–9th cent.), thin-walled gray clay vessels with relief ornamentation (11th–13th cent.), and glass (a cup with horses in relief from Khulbuk, 11th cent.). Remaining from the 15th and 16th centuries are parts of the cathedral-mosques in Ura Tyube and in the village of Navgulem (Fergana) of the characteristic Central Asian type: with a tall portal, a domed hall, and wings in the form of domed galleries; on the façades are glazed decorations. In the 18th century Tadzhikistan became part of the khanate of Bukhara and suffered an economic decline, which affected monumental building.

The folk architecture preserved the old traditions. In Gorny Badakhshan, until the 20th century, the type of large, patriarchal family dwelling was preserved: a square dwelling with bunks placed high along the walls, lit by an aperture in the beamed dome (similar to ones in the Hindu Kush and in Transcaucasia), and decorated with carved doors and column bases and sometimes with primitive wall paintings with ornamental and figural motifs. The typical house in the Fergana valley was symmetrical in plan with rooms on both sides of the entrance hall, a tall portico on the façade, and with latticed shutters that could be raised; it was adorned with handsome polychrome wall paintings (ornamentation on the ceilings, bushes and bouquets on the walls) and carved stucco and wood (plant and geometric designs). The minor arts had a decorative character: silk and cotton textiles, white cotton with red and black patterns, embroideries, patterned woolen stockings, chased copper, jewelry, and polychrome glazed or unglazed pottery with molded and painted ornamentation (see also SIBERIAN CULTURES).

During the Soviet period the old settlements have been enlarged and new towns and villages have been built. The architectural decoration follows the national traditions.

Painting and graphic arts have developed, particularly in the 1950s and the early 1960s. Leading artists include painters M. Khoshmukhamedov (b. 1912), I. Abdurakhmanov (v. 1923), A. Ashurov (b. 1904), D. Ilyabaev (b. 1924), Kh. Khushvakhtov (b. 1926), N. A. Matasov (b. 1919), and A. M. Ponomarev (b. 1917); graphic artists M. A. Krasnopolski (b. 1916) and B. I. Serebryanski (b. 1920); and sculptors A. Ganiev (b. 1927) and K. Zakirov (b. 1920).

BIBLIOG. A. A. Bobrinskoi, Ornament gornykh tadzhikov (Ornament of the Mountain Tadjiks), Moscow, 1900; M. S. Andreev, Ornament gornykh tadzhikov verkhov'ev Amu-Dar'i i kirgizov Pamira (Ornament of the Mountain Tadjiks of the Amū Darya and of the Kirghiz of the Pamir), Tashkent, 1928; V. L. Voronin, Zhilishche Vancha i Yazgulema (Dwellings of Vanch and Yazgulem), Arkhitektura respublik Srednei Azii, Moscow, 1951, pp. 251–81; M. A. Zakharov and Kh. A. Yuldashev, Arkhitektura Tadzhikskoi SSR (Architecture of the Tadjik SSR), Arkhitektura respublik Srednei Azii, Moscow, 1951, pp. 153–83; B. A. Litvinski, Arkhitekturny kompleks Khodzha-Nakhshron (The Architectural Complex of Khwāja Nakhshirān), Trudy Akad. nauk Tadzhikskoi SSR, 17, 1953, pp. 121–38; B. A. Litvinski, Mechet'-namazgo v kishlake Navgulem (The Mosque-"chapel" in the Village of Navgulem), Doklady Akad. nauk Tadzhikskoi SSR, 1953, pp. 43–48; V. L. Voronina, Zametki po narodnomu zodchestvu tadzhikov basseina Zeravshana (Notes on the Folk Architeture of the Tadjiks in the Zeravshan Basin), Sovetskaya etnografiya, 3, 1953, pp. 176–88; B.A. Litvinski, Arkheologicheskoe izuchenie Tadzhikistana sovetskoi naukoi (The Archaeology of Tadjikistan in Soviet Science), Stalinabad, 1954; E. A. Davidovich and B. A. Litvinski, Arkheologicheski ocherk Isfarainskogo raiona (Archaeological Essay on the Isfarayin Area), Stalinabad, 1955; M. M. D'yakonov, U istokov drevnei kul'tury Tadzhikistana (Sources of the Ancient Civilization of Tadjikistan), Stalinabad, 1956; Sbornik statei, posvyashchennyk iskusstvu tadzhikskogo naroda (Collection of Articles Dedicated to the Art of the Tadjik People), Stalinabad, 1956; Izobrazitel'noe iskusstvo Tadzhikskoi SSR (Fine Art of the Tadjik SSR), Moscow, 1957; V. L. Voronina, Narodnaya arkhitektura Yuzhnogo Tadzhikistana (Folk Architecture of Southern Tadjikistan), Sovetskaya etnografiya, 3, 1957, pp. 138–45; Kh. A. Yuldashev, Arkhitekturny ornament Tadzhikistana (Architectural Ornament of Tadjikistan), Moscow, 1957; E. M. Peshchereva, Goncharnoe proizvodstvo Srednei Azii (Ceramic Production of Central Asia), Moscow, Leningrad, 1959; V. L. Voronina, Narodnaya arkhitektura Severnogo Tadzhikistana (Folk Architecture of Northern Tadjikistan), Moscow, 1959; Iskusstvo tadzhikskogo naroda: Sbornik statei (The Art of the Tadjik People: Collection of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Articles), Stalinabad, 1960; V. L. Voronina, Kariatidy v arkhitekture Srednei Azii (Caryatids in the Architecture of Central Asia), Trudy XXV mezndunarodny kongress vostokovedov (Moscow, 1960), III, Moscow, 1963, pp. 117–24.

Art centers. Dushambe (from 1929–61, Stalinabad). The capital (from 1924) of the Tadzhik S.S.R. is situated in the foothills of the Hissar Mountains along the Dushambinka River. It was a small village until the 1930s, when it was transformed into a well-planned, richly verdant city with four-storied houses, parks, an artificial lake, a stadium, and public buildings. A broad throughfare runs the length of the city; Moscow Square, one of the many fine squares, has notable fountains. The Museum of History, Ethnography, and the Figural Arts was founded in 1934, the Andreyev Museum of Archaeology and Ethnography, forming part of the Aḥmad Donish Historical Institute, in 1949, and the Folk Art Center in 1935.

BIBLIOG. D. A. Chumichev, Stalinabad, Moscow, 1950.

Khulbuk. The former center of the medieval Khuttal district is now in ruins. Excavations have brought to light the citadel with remains of a palace. The patterned brick floor paving and remains of stucco ornamentation have survived.

BIBLIOG. B. A. Litvinski, Predvaritel'ny otchët o rabote khuttal'skogo otryada (Preliminary Report on the Work of the Khuttal Expedition), Doklady Akad. nauk Tadzhikskoi SSR, XI, 1954, pp. 53–60.

Leninabad (until 1936, Khojend Khodzhent). This northern town on the Syr Darya River was founded by Alexander the Great in the 4th century B.C. under the name of Alexandreia Eschate (Outer Alexandria); in the Middle Ages it was a large trading center. There are remains of the beaten-clay walls and the citadel of the 18th century. The Mausoleum of Sheikh Muṣliḥ ad-Dīn (14th cent.), of baked brick, has a portal and dome; inside is a carved wooden funerary monument. A cathedral-mosque with a spacious hall and a large covered terrace (1912–13) now houses the Museum of History and Ethnography. During the Soviet period the town has been modernized.

BIBLIOG. N. N. Negmatov, Mavzolei Tuba-Khan (The Mausoleum of Tuba-Khan), Izvestiya Otdeleniya obshchestvennykh nauk Akad. nauk Tadzhikskoi SSR, LXI, 1957, pp. 45–60.

Pyandzhikent. On the southern side of this town lie the ruins of ancient Pyandzhikent (5th–8th cent.), which was the center of a district of the same name on the middle Zeravshan River. The irregular polygon formed by the town wall enclosed the town and the citadel; excavations (since 1947) have brought to light the citadel on a hill, remains of houses and of temples (XIII, FIG. 130), suburban estates, and a necropolis (see XIII, cols. 128–130). The buildings contain remarkable wall paintings and sculpture (XIII, PLS. 83–90). The Rudaki Museum in the modern city was founded in 1958.

About 20 mi. to the east, in the village of Mazar-i-Sharif, is the Muḥammad Bāshsharā Mosque-Mausoleum (1343; the eastern part may be earlier), of baked brick, with a portal richly adorned with carved terra cotta and terra-cotta and majolica panels.

BIBLIOG. Trudy Sogdiisko-Tadzhikskoi arkheologicheskoi ekspeditsii (Transactions of the Sogdiana-Tadjikistan Archaeological Expedition) (MIA, I, 15), Moscow, 1951; A. Yu. Yakubovski, Drevni Pyandzhikent (Ancient Pyandzhikent), Po sledam drevnykh kul'tur (On the Track of Ancient Civilizations), Moscow, 1951, pp. 209–70; Trudy Tadzhikskoi arkheologicheskoi ekspeditsii (Transactions of the Tadjik Archaeological Expedition) (MIA, 37, 66), 2 vols., Moscow, 1953–58; Zhivopis' drevnego Pyandzhikenta (Painting of Ancient Pyandzhikent), Moscow, Leningrad, 1954; V. L. Voronina, Gorodishche drevnego Pyandzhikenta kak istochnik dlya istorii zodchestva (The Ruins of Ancient Pyandzhikent as a Source for the History of Architecture), Arkhitekturnoe nasledstvo, 8, 1957, pp. 115–42; Skul'ptura i zhivopis' drevnego Pyandzhikenta (Sculpture and Painting of Ancient Pyandzhikent), Moscow, 1959.

Sayat. In this village in southern Tadzhikistan two brick, domed mausoleums called Khwāja Mashkhad (11th–12th cent.), joined by the ogive arch of a portal, have survived. It is possible that they formed part of a complex that has not been preserved.

BIBLIOG. A. M. Belenitski, Mavzolei y celeniya Sayaty (Mausoleum at the Village of Sayat), MIA, 15, 1950, pp. 76–79.

Ura Tyube. This town in the north was presumably the ancient Kyropolis (founded by Cyrus) and the medieval Bundzhikat, the main town of the Usrushan principality. There are remains of early medieval town walls of beaten clay. The Khāk Gumbaz Cathedral-Mosque (16th cent.) has a domed hall and remains of glazed adornment on its façade. The Bābā Tagā Mosque-Mausoleum is from the 16th century. During the Soviet period modern houses and industrial and public buildings have been erected.

BIBLIOG. B. V. Veimarn, Mechet' Kok-Gumbez v Ura-Tube (The Khāk Gumbaz Mosque at Ura Tyube), Soobshcheniya Inst. istorii i teorii arkhitektury Akad. arkhitektury SSSR, 1947, pp. 17–24.

Veronika VORONINA

KIRGHIZIA (Kirghiz S.S.R.). *Historical and artistic periods.* The oldest artistic monuments belong to the Bronze Age (3d–middle of 1st millennium B.C.): numerous rock pictures (figures of animals, hunt scenes, cult dances, scenes of everyday life, etc.) in the Saimaly-Tash gorge, funerary statues (*balbal* images), figurines of humans and animals made of bone, clay, and metal, and items of jewelry. In the 2d millennium B.C. painted ceramics began to be widespread among the settled agricultural population of southern Kirghizia; pottery of the 4th–1st century B.C. has especially rich ornamentation. Dating from the 5th to the 3d century B.C. are numerous bronze objects related to the cult of fire (lamps, sacrificial altars, cauldrons with realistic representations of animals) of the nomadic Śaka tribes (Lake Issyk Kul).

In the 4th and the 5th century of our era cities were established along the caravan routes in Sogdiana (q.v.), whose inhabitants brought with them their characteristic art (terra-cotta statuettes, pottery, and reliefs on ossuaries) and their building techniques (see above, *Tadzhikistan*). During the period of the Turkic khanate (6th–8th cent.) the residences of Turkic khans arose along the Ili River in T'ien-shan. The 1953–54 and 1955–58 excavations of the ruins of Ak-Beshim have revealed remains of a castle of the 6th–7th century and two Buddhist temples of the 7th–8th century that bear a direct resemblance to the temples of eastern Turkistan and Pyandzhikent (see *Tadzhikistan*). In the 8th and the 9th centuries towns such as Ak-Beshim and Saryg were enlarged; the buildings were typical medieval Central Asian constructions made of *pakhsa* (beaten clay) and sun-dried brick. During the period of the Qarakhanids (10th–12th cent.) towns were established (Uzgen) and the basic architectural and building techniques were evolved. Noteworthy brick buildings appeared (minarets and mausoleums): the Buran tower-minaret south of Ak-Beshim (early 11th cent.); a minaret (11th cent.) and three mausoleums (11th–12th cent.) at Uzgen, demonstrating the development of the domed memorial building with a portal; and the Mausoleum of Shah Fāzil (13th cent.?) at Safid-Buland. The Kirghiz mausoleums are domed buildings with a portal, a square plan, and varied and rich embellishments (patterned brickwork, incised stucco and terra cotta).

The Mongol invasion in the beginning of the 13th century interrupted the economic and cultural development of Kirghizia. The large towns were destroyed and plundered and building was brought to a stop. Only the tradition of erecting mausoleums over graves (Manas Mausoleum, 14th cent.) survived.

The chief type of dwelling of the nomadic population was a felt tent over a wooden frame, adorned with long patterned strips of cloth and plaited mats (*chi*) at the entrance. The nomadic way of life was also the framework of reference for the artistic activity of the Kirghiz people (see SIBERIAN CULTURES).

From the second half of the 19th century, after Kirghizia was incorporated into Russia, intensive urbanization took place. In folk art, embroidery in silk and cotton thread on black velvet became widespread and, in the southern districts, on red and white cloth. The Dungan tribe executed original embroideries in colored silk depicting bizarre subjects, collars and pendants, and women's silver jewelry.

During the Soviet period new towns have been erected and old ones rebuilt. National motifs have been utilized in decorating the façades of private houses and public edifices, and in recent years much use has been made of painting and decorative sculpture in buildings (e.g., Theater of Opera and Ballet in Frunze, 1955).

An important role has been played in forming the style of Kirghiz figural art by the Russian artists V. V. Obraztsov (1891–1934) and especially S. A. Chuikov (b. 1902). In 1934 the Union of Artists was founded, and a regional art exhibit was organized with the participation of the Kirghiz artists G. Aitiev (b. 1912) and S. Akylbekov (b. 1914). The most important modern Kirghiz artists are: painters S. A. Chuikov, G. Aitiev, A. I. Ignatev (b. 1906), S. Akylbekov, D. Kozhakhmetov (b. 1921), and K. Kerimbekov (b. 1922); graphic artists L. A. Ilina (b. 1915), A. N. Mikhalev (b. 1910), and A. S. Ostashev (b. 1929); and sculptors O. M. Manuilova (b. 1893) and T. Sadykov (b. 1935).

BIBLIOG. Kirgizski natsional'ny uzor (Kirghiz National Design), Leningrad, Frunze, 1948 (cat.); A. N. Bernshtam, Arkhitekturnye pamyatniki Kirgizii (Architectural Monuments of Kirghizia), Moscow, Leningrad, 1950; Arkhitektura respublik Srednei Azii (Architecture of the Central Asian Republics), Moscow, 1951 (articles); Khudozhniki sovetskoi Kirgizii (Artists of Soviet Kirghizia), Moscow, 1951; Izobrazitel'noe iskusstvo Kirgizskoi SSR (Fine Art of the Kirghiz SSR), Moscow, 1957 (cat.).

Art centers. Frunze (until 1926, Pishpek). The capital of the Kirghiz S.S.R. was founded in 1862 on the site of a destroyed fortress

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

of the Kokand khanate. In 1872–73 a town plan with a network of streets at right angles and small public squares was drawn up; in 1939 the plan was revised and it was carried out between 1948 and 1958. The city has many mosques, churches, caravansaries, and houses of beaten clay and undressed stone. During the Soviet period large government and apartment buildings have been built, as well as cultural edifices (theaters, libraries, institutes) and the complex of the Academy of Sciences. The Kirghiz Museum of Figural Art (1935) contains Kirghiz, Russian, European, and Chinese art. The Historical Museum of the Kirghiz Academy of Sciences (1926) has a collection of Khirghiz folk art.

BIBLIOG. S. N. Ryazantsev, Frunze, Moscow, 1950.

Ak-Beshim. The site of Ak-Beshim is located about 5 mi. southwest of Tokmak. Excavations have brought to light ruins of a *shahristān* (an area of ca. 88 acres) with a citadel and walls with defensive towers; remains of a castle of the 6th–7th century built of sun-dried brick with a foundation of *pakhsa*; and two Buddhist temples (late 7th–early 8th cent.). The temples are rectangular in plan, with a hall for worshippers, a cella, and a surrounding gallery (see XIII, col. 126); one of the temples has an open courtyard. In the temples are remains of wall paintings, sculptures, and terra-cotta bas-reliefs.

BIBLIOG. S. G. Khmel'nitski, Opyt rekonstruktsii buddiiskogo khrama Ak-Beshim (An Attempt to Reconstruct the Buddhist Temple of Ak-Beshim), Trudy kirgizskoi arkheologo-etnograficheskoi ekspeditsii, II, 1959, pp. 243–65; L. R. Kyzlasov, Arkheologicheskie issledovaniya na gorodishche Ak-Beshim v 1953–54 gg. (Archaeological Investigations at the Ruins of Ak-Beshim in 1953–54), Trudy kirgizskoi arkheologo-etnograficheskoi ekspeditsii, II, 1959, pp. 155–241; L. P. Zyablin, Vtoroi buddiiski khram Ak-Beshimskogo gorodishcha (The Second Buddhist Temple at the Site of Ak-Beshim), Frunze, 1961.

Buran. This tower-minaret of the early 11th century is located about 4 mi. south of Ak-Beshim and 11 mi. southwest of Tokmak. The columnar minaret is made of brick with ornamental bands of geometric designs. The interior staircase in covered by a semicircular vault.

BIBLIOG. A. N. Bernshtam, Bashnya Burana (The Tower of Buran), Frunze, 1946.

Manas Mausoleum. This 14th-century mausoleum is located on the upper Talas River. It was built as the tomb of Kjanizjak-khātūn, the daughter of Emir Abuk; according to legend it is considered to be the tomb of the legendary folk hero, Manas. The brick mausoleum with a portal and an inner ogee dome (ca. 23 ft. high) has a main façade faced with incised terra-cotta panels with the characteristic Kirghiz ornamentation.

BIBLIOG. M. E. Masson and G. A. Pugachenkova, Gumbez Manasa (The Manas Dome), Moscow, 1950.

Safid-Buland. The central-plan, domed Mausoleum of Shah Fāzil (13th cent.?) is near the town of Dazhalalabad. The interior has trimmings of carved stucco (on a colored background), with rich ornamentation.

BIBLIOG. A. N. Bernshtam, Arkhitekturnye pamyatniki Kirgizii (Architectural Monuments of Kirghizia), Moscow, Leningrad, 1950.

Uzgen. This is the ancient capital of the Qarakhanids. The architectural complex of the 11th–12th century includes a circular-plan minaret (late 11th cent.) with ornamental brickwork and three central-plan mausoleums whose façades form a single unit. The central façade (11th cent.) has a design of bricks against an incised stucco background; the "northern" (1152) and "southern" (1186) façades, with portals, are richly adorned with patterned brickwork and incised terra cotta (ornament and inscriptions).

BIBLIOG. B. N. Zasypkin, Arkhitektura Srednei Azii (Architecture of Central Asia), Moscow, 1948; A. N. Bernshtam, Arkhitekturnye pamyatniki Kirgizii (Architectural Monuments of Kirghizia), Moscow, Leningrad, 1950.

Anna PRIBYTKOVA

THE AUTONOMOUS REPUBLICS OF SIBERIA. *Yakutia* (Yakutsk A.S.S.R.). The art of ancient Yakutia (see II, col. 13) is represented mainly by decorated pottery and colored rock drawings. The early neolithic pottery on the middle Lena River (near the city of Yakutsk) is covered with net imprints and has an incised line around the rim. Clay vessels from a settlement on the Kulata River, about 21 mi. south of Yakutsk, are decorated with a checkerboard mock-textile pattern. The same type of ornamentation appears on pottery of the late Neolithic period (from the site of Malaya-Munka near the town of Olekminsk). The vessels from this site also bear a small molded-knot motif. Later clay vessels (end of the Neolithic to beginning of the Bronze Age) are decorated at the rim with a band of zigzags and with superimposed dot marks.

The rock drawings are mostly of elk in contour, executed in a naïvely realistic manner (village of Churu, situated between Vitim and Yakutsk; Suruktaakh-Khaya cliff, in the valley of the Markha River).

In the Bronze Age, in addition to pottery and rock drawings, sculptures carved of bone and decorated metal objects made their appearance. The ornamentation on the pottery was essentially the same as in the earlier times (mock-textile patterns); in addition to a small trowel, a comb stamp was used for the geometric designs (settlement on the Kulata River).

A pictograph by the Sinyaya River represents elk, hunters with bows, large horned anthropomorphic figures, emblems, and what seem to be boats carrying people. In some pictographs (e.g., on the Suruktaakh-Khaya cliff) stylized people are shown holding objects resembling tree branches. Pictures that resemble domed dwellings are also found. Of interest among bone objects are the flat figurine of a person (from a tomb by the Kulata River), a fragment of a bone plaque with a carved zigzag design, and an ornamented horn plaque with a spur-shaped design found at a Bronze Age site in the territory of Yakutsk. Bronze spear tips (at the mouth of the Markha River, at Aldan) are decorated with parallel lines and zigzags.

The pottery of the Iron Age has geometric designs, made with a comb stamp, similar to those of the Bronze Age. Dot and cylindrical patterns occur frequently and, on the lower Lena, rectangles arranged in bands.

In rock drawings elk are depicted, with dogs nearby, but on the whole the pictographs in this period assumed a different character. The naïvely realistic drawings became more complex and schematized, resembling pictographic writing, which was probably their function. The signs include sticks, intersected circles, semicircles, angles, swastikas, and tridents; sometimes representations of men or animals are interspersed. The signs and figures form horizontal rows.

The art of the Yakuts in historical times shows a perpetuation of the culture inherited from the ancient tribes (see XII, cols. 28, 32–33). The minor arts are represented by various kinds of dress adornments and objects of leather, bone, fur, birch, bark, wood, and metal (XIII, PLS. 28, 29).

Tuva (Tuva A.S.S.R., formerly Tannu Tuva). Ornamentation on pottery of the Neolithic and Bronze ages consists of extremely simple geometric designs. The stone steles covered with incised representations, the so-called "deer stones" (*olēnnye kamni*), date from the 7th to the 3d century B.C. The figures include deer, wild boar, goats, and horses; weapons are also depicted on the steles. These figures of animals resemble those on the "deer stones" of Transbaikalia and Mongolia. Artifacts made of horn belong to the Scythian period (5th–4th cent. B.C.): carved plaques representing horses, antelopes, aurochs, and griffins executed in the typical Scythian "animal style" (see GRECO-BOSPORAN AND SCYTHIAN ART; STEPPE CULTURES). These objects, and others of gold, were found in barrows of the Pazyryk type at the juncture of the Tsagan Shibetu and Tannu Ola mountains, at the border of the depression of the Great Lakes of Mongolia. Also belonging to the same series of objects are bronze plaques shaped like animals and a bronze hook on which to hang a quiver, shaped like the head of a mountain goat. A series of rock representations, mostly of elk, deer, and wild camels, dates from the Scytho-Sarmatian period.

The most interesting archaeological remains of Hunnish art are the clay vessels decorated with horizontal and vertical bands, arches, and molded round "teats" or dots. The decoration on these vessels is similar to that of the Hunnish bronze cauldrons found in Mongolia. Wooden objects with carved and painted ornament also occur.

The artistic production of the ancient Turki (6th–9th cent.) includes stone sculptures (PLS. 217, 218), bronze and gold plaques (PLS. 291, 220), decorated birch bark, bone, and felt articles, and petroglyphs (see TURKIC ART). Works of sculpture similar to the stone statues of Altai and Mongolia have been found in many parts of Tuva, but mainly in the southwestern part, in the locality of Mongun-Taiga. Most of the sculptures represent men clothed and wearing headgear; from their belts, decorated with plaques, hang small purses, daggers, and swords. The sculptures were for the most part buried in the ground near the walls of quadrangular enclosures made of stone slabs. The figures are treated in a simplified way, and in many cases the proportions of the body are distorted; attention is given mostly to the face and the accessories. There are two schools of thought regarding the meaning of the sculptures: some scholars hold that they represent Turkic notables; others, that they portray powerful enemies defeated by the military leaders of the Central Asian tribes.

The Turkic petroglyphs of the 7th–8th century bear stylized, somewhat simplified figures mostly of animals, both wild and do-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

mestic, infrequently of humans. Petroglyphs have been found in many regions, most frequently near Ovyura (in the valley of the Khadagaita and Mugur rivers).

Kirghiz goods of metal, such as bronze plaques richly decorated with plant and geometric ornamentation (in the Sut-khol district), date from the 9th–10th century; in many respects they resemble the objects of Kirghiz art found outside the borders of Tuva.

The figural art of the Tuvintsy varied in character according to their place of residence and occupation (see XIII, cols. 28, 34–35). In the steppe regions, among the stock-raising Tuvintsy, it was more highly developed and found expression in various forms; among the reindeer breeders and hunters inhabiting wooded regions, it was more modest and uniform and consisted of carved geometric designs on wood, quilted designs on felt rugs, and embroidery with reindeer hair on shaman costumes and headgear. Toys consisted mostly of contour figurines of animals cut from birch bark. Typical of the art of the stock-raising Tuvintsy are embossed leather articles and carved and painted wooden coffers, cupboards, and dishes. Wooden and stone sculpture of small dimensions was widely developed.

Buryat (Buryat-Mongolian A.S.S.R.). In 1928–36 archaeologists excavating settlements of the Paleolithic period came upon the first female statuettes carved of mammoth tusk ever to be found in Siberia: 20 statuettes were from Malta on the Belaya River (VIII, PL. 235) and one was from Buret in the valley of the Angara River. Most of the statuettes are in a realistic style; some of the figurines are shown wearing hooded dresses. The finds of Malta include birds made of bone, various objects of adornment, a bone plaque with three serpents, and a remarkably expressive representation of a mammoth engraved on bone.

Among the artifacts of the Neolithic period discovered around Lake Baikal the most interesting are the decorated pottery, objects of bone and stone, and colored rock drawings (see II, cols. 11–13). The pottery of the Isakovo culture (4th millennium B.C.) is ornamented with netlike impressions and sometimes bands of dots. On pots of the Serovo culture (3d millennium B.C.) the ornamentation is net-and-plait with square rhomboid cells, as well as geometric patterns applied with a comb stamp. Other motifs are half-moons, swastikas, zigzags, and horizontal cylindrical shapes. Stone fish of the Serovo culture have also been found. Still richer ornamentation decorates the pottery of the Kitoi culture (2d half of 3d–beginning of 2d millennium B.C.). During this period stamped patterns predominated: a triple zigzag with offshoots, horizontal parallel lines, vertical short ones, strips of arches or hexagons, and other geometric designs. Zoomorphic motifs (small snakes) also appeared. Objects of bone included sticks adorned with stripes and angles, daggers decorated with triangles, tubular needle cases with swastikas and small circles with a dot in the center, and representations of fish. Finds include a realistically portrayed head carved in marble.

Large numbers of rock drawings have been found along the Lena River, especially near the village of Shishkino. They consist mostly of outlined or silhouetted figures of elks, many in motion. At the end of the Neolithic period anthropomorphic figures with curved torsos and one leg appeared among the cliff drawings.

The Copper and Bronze ages are represented by the art of the Glazkovo culture. Geometric and mock-textile designs predominate in the ceramics. Of great interest are the bone anthropomorphic amulets shaped like single or paired figures (at Verkholensk and Novy Kachug) and the bone fish used as lures (XIII, PL. 21).

In rock drawings (the Shishkino cliffs) new subjects appeared: processions of boats with seated people, monsters, and human figures or anthropomorphic spirits in the orant pose. In Transbaikalia painted rock drawings are encountered in the valley of the Selenga River and its tributaries and on the western shore of Lake Baikal, along the Angara River. The drawings include small human figures, sometimes a row of people holding hands, flying birds, circles, and ovals and rectangles filled with dots; horses are occasionally depicted. The figures are in contour and are extremely simplified. These cliffs drawings are contemporaneous with the slab graves and resemble the cliff drawings in northern Mongolia.

To the Bronze Age (7th–3d cent. B.C.) belong the so-called "deer stones" left by early nomads and resembling the ones in Tuva and Mongolia.These monumental memorials were generally set up over the graves of wariors; on them are carved stylized representations of deer with outstretched muzzles resembling a bird's open beak, as well as bows, war axes, daggers, and mirrors.

In the 2d century B.C. the dominion of the Huns spread to the shores of Lake Baikal. In Transbaikalia (the southern districts of the Buryat-Mongolian A.S.S.R.) objects of the Hunnish period were found in a few tombs and ruined towns. The most interesting finds are bronze and gold plaques and buckles with figures of animals in relief: horses, yaks, birds of prey, wild goats, mythical birds, and serpents, mostly shown in motion and expressively portrayed.

The ornamentation on the pottery is extremely simple and geometric: undulating lines, zigzags, S-shaped spirals, vertical stripes, net motifs, and arches. Fantastic winged animals are depicted on bone articles. All these objects resemble finds from Noin-Ula (northern Mongolia), Ordos (q.v.), and some objects in the Siberian collection of Peter the Great at The Hermitage in Leningrad.

Of great interest are the cliff drawings, apparently done by the Kurykan Turks who inhabited western Baikalia in the 6th–10th century of our era; these drawings are especially numerous on the Shishkino cliffs. In contrast to the earlier cliff drawings, those of the Kurykans include numerous human figures, horses, and mounted riders; also shown are elk, deer, goats, camels, wolves, dogs, water birds, and various scenes such as a hunt and a nomadic migration. The animals are often portrayed in motion. The riders and the people on foot carry bows and arrows, lassos, spears, and banners. The Kurykan pottery is decorated with geometric and plant motifs.

During the excavation of the Mankhai ruins (in western Baikalia) stone slabs were found with representations of riders, armed with spears and bearing pennants, and of galloping wild goats, in a style similar to the rock drawings. Other slabs have curved plantlike designs; on the one hand, they resemble some of the designs found on Kurykan pottery and, on the other, the decoration on metal objects belonging to the era when the forebears of the Hungarians migrated from Lebadea to the Danube (9th cent. of our era).

The most widespread form of artistic activity among the Buryats in historical times was decorative applied art (see XIII, cols. 28–29, 33–34). Men made silver adornments, ornamental metal trimmings for harnesses and saddles, carved and painted woodenware, and carved toys. Women decorated clothing and items of felt and cloth, knitted patterned woolen stockings, embroidered tobacco pouches, and made cloth rugs with appliqué plaques and white shells.

From the 17th to the early 20th century painters and specialists in woodwork and metalwork made icons, statuettes of various personages in the Lamaist pantheon, furniture, and religious vessels for the Transbaikalian Lamaist monasteries and executed brightly colored paintings for the monastic buildings.

The ancient shaman boxes were decorated with drawings, sometimes in color, of persons and animals. Representations of the sun, the moon, humans, and animals were depicted on objects consecrated to the god Ongon. The shaman costumes were adorned with iron figurines representing animal spirits (XIII, PL. 2). Occasionally the Buryat made shaman masks (XIII, PL. 26). See also SHAMANISM.

BIBLIOG. I. G. Granö, Archäologische Beobachtungen von meiner Reise in Südsibirien und der Nordwest-Mongolei im Jahre 1909, J. Soc. finno-ougrienne, XXVIII, 1913, pp. 1–67; G. P. Sosnovski, Raskopki Il'movoi Padi (Excavations in the Il'movaya Gorge), SA, VIII, 1946, pp. 51–67; G. P. Sosnovski, O poselenii gunnskoi epokhi v doline reki Chikoya: Zabaikal'e (Concerning a Settlement of the Hunnish Period in the Valley of the Chikoy River: Transbaikalia), KS, XIV, 1947, pp. 35–39; P. P. Khoroshikh, Pisanitsy na gore Mankhai (Pictography on Mt. Mankhai), KS, XXV, 1949, pp. 127–31; A. V. Davydova and V. P. Shilov, Predvaritel'ny otchët o raskopkakh Nizhne-Ivolginskogo Gorodishcha v 1949 g. (Preliminary Report on the Excavations of the Lower Ivolga Site in 1949), Zapiski Buryat-Mongol'skogo nauchno-issledovatel'skogo Inst. Kul'tury, XIII, 1951, pp. 71–100, XIV, 1952, pp. 94–116; A. P. Okladnikov, Raboty Buryat-Mongol'skoi arkheologicheskoi ekspeditsii v 1947–50 gg. (Work of the Buryat-Mongolian Archaeological Expedition in 1947–50), KS, XIV, 1952, pp. 40–47; A. P. Okladnikov, Obraz ptitsy v iskusstve bronzovogo veka Zabaikal'ya i ego analogii v narodnom iskusstve Buryat (Bird Representations in the Bronze Age Art of Transbaikalia and Its Analogies in the Folk Art of the Buryats), Sovetskaya etnografiya, 1, 1954, pp. 150–53; A. P. Okladnikov, "Olënny kamen'" s reki Ivolgi (The "Deer Stones" on the Ivolga River), SA, XIX. 1954, pp. 207–20; A. P. Okladnikov, Istoriya Yakutskoi ASSR, I: Yakutiya do prisoedineniya k Russkomy Gosudarstvu (History of the Yakut ASSR, I: Yakutia before the Union with the Russian State), Moscow, Leningrad, 1955; A. P. Okladnikov, Neolit i bronzovy vek Pribaikal'ya, III: Glazkovskoe vremya (The Neolithic and Bronze Ages in the Region of Lake Baikal, III: Glazkovo Period) (MIA, XLIII), Moscow, 1955; N. L. Chlenova, Neskol'ko pisanits Yugo-Zapadnoi Tuvy (Some Pictographs of Southwest Tuva), Sovetskaya etnografiya, 4, 1956, pp. 45–63; A. V. Davydova, Ivolginskoe Gorodishche (The Ivolga Site), SA, XXV, 1956, pp. 261–300; A. V. Davydova, Raskopki Ivolginskogo Gorodishcha, v 1955 g. (Excavations of the Ivolga Site in 1955), Zapiski Buryat-mongol'skogo nauchno-issledovatel'skogo Inst. kul'tury, XXII, 1956, pp. 64–82; A. V. Davydova, Buryat-mongol'skaya arkheologicheskaya ekspeditsiya v 1956 g.; Raskopki Ivolginskogo Gorodishcha i moglil'nika (The Buryat-Mongolian Archaeological Expedition of 1956: Excavations of the Ivolga Site and Tumulus, Zapiski Buryat-mongol'skogo nauchno-issledovatel'skogo Inst. kult'ury, XXIV, 1957, pp. 241–69; P. P. Khoroshikh, Naskal'nye izobrazheniya na gore Baitog (Rock Figures on Mt. Baitog), Zapiski Buryat-mongol'skogo nauchno-issledovatel'skogo Inst. kul'tury, XXIII, 1957, pp. 144–48; N. N. Dikov, Bronzovy vek Zabaikal'ya (The Bronze Age in Transbaikalia), Ulan-Ude, 1958; L. R. Kyzaslov, Etapy drevnei istorii Tuvy (Phases of Tuva's Ancient History), Vestnik Moskovskogo Univ., istoriko-filologicheskaya ser., 4, 1958, pp. 77–99; A. P. Okladnikov, Shishkinskie pisanitsy (Pictographs of Shishkino), Irkutsk, 1959; Trudy Tuvinskoi Kompleksnoi arkheologo-etnograficheskoi ekspeditsii Akademii Nauk SSSR (Transactions of the Tuva Archaeological-Ethnographic Expedition of the USSR Academy of Sciences), I, Moscow, Leningrad,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1960; S. I. Vainshtein and V. P. D'yakonova, Unikal'nye nakhodki iz raskopok drevnikh kurganov Tuvy (Unique Fnds firom the Excavations of the Ancient Tumuli of Tuva), Uchenye zapiski Tuvinskogo nauchno-issledovatel'skogo Inst. Yazyka, Lit i Istorii, VII, 1960, pp. 193–203; A. P. Okladnikov, Kul'turno etnicheskie svyazi tyurkskogo Pribaikal'ya VI–X vekov s Zapadom: Ornament Vengerskikh plastin dlya ukrasheniya sumok X v. i Mankhaiskie gravirovannye plitki (The Baikal Turki's Cultural-Ethnic Connection with the West in the 6th–10th Century: Ornaments of the Hungarian Bag-decorating Plaques of the 10th Century and the Mankhan Engravings), Issledovaniya po arkheologii SSSR, Leningrad, 1961, pp. 167–73; N. L. Chlenova, Ob "olënnykh kamnyakh" Mongolii i Sibiri (On the "Deer Stones" of Mongolia and Siberia), Mongol'ski arkheologicheski sbornik, Moscow, 1962, pp. 27–35; S. I. Rudenko, Kul'tura gunnov i Noinulinskie kurgany (The Culture of the Huns and the Tumuli of Noin-Ula), Moscow, Leningrad, 1962; S. I. Rudenko, Sibirskaya kollektsiya Petra Pervogo (The Siberian Collection of Peter I) (Arkheologiya SSSR: Svod arkheologicheskikh istochnikov, III, 9), Moscow, 1962; H. N. Michael, ed., The Archaeology and Geomorphology of Northern Asia, Toronto, 1964; Tuvinski nauchno-issledovatel'ski Institut Yazyka, Literatury i Istorii, Istoriya Tuvy (History of Tuva), 2 vols., Moscow, 1964. See also bibliog. of SIBERIAN CULTURES; TURKIC ART.

Sergei IVANOV

Illustrations: 17 figs. in text.

Edited under the auspices of the U.S.S.R. Academy of Sciences and supplied by the press agency Novosti.

UNION OF SOVIET SOCIALIST REPUBLICS: MODERN MOVEMENTS. The history of art of the peoples of the U.S.S.R. is very complex owing to the multiplicity of ethnic cultures that make up the country. Various areas of artistic activity achieved a measure of unity in the course of an extended period of development, but not until the economic and political unification of the country (18th–19th cent.) did the peoples of the present-day Soviet Union evolve a common basis in art.

The originality of the art of the peoples of the U.S.S.R. in the early stages of its development was due largely to their strategic position at the crossroads of the cultural currents flowing between western European and Asian centers; while this art was considerably influenced by Eastern traditions, it nevertheless remained part of European civilization. However, the fact that the Russian state shed the structure of feudalism much later than most European countries explains the tenacity of medieval concepts in art, which persisted up to the 18th century. Meanwhile, beginning in the 17th century and throughout the 18th, Russia was avidly absorbing European ideas and transmitting them to the other nationalities of the U.S.S.R. During the 18th and 19th centuries Russian art underwent stylistic changes that paralleled those of western European art, but its own peculiar historical evolution caused some significant departures from the general direction taken by European art. The baroque and classical styles in Russia were not followed by a surge of romanticism (q.v.), as was the case in France and Germany, nor was there a particularly strong impressionist movement. However, critical realism developed more vigorously in Russia than anywhere else; for when the U.S.S.R. began to build a socialist society after the 1917 Revolution, it laid the cultural foundations for an artistic evolution that took a radically different turn from that of 20th-century western Europe and America.

SUMMARY. The 18th century (col. 569). The 19th century (col. 573): *The birth of realism; The Itinerants (Society for Traveling Art Exhibitions)*. The 20th century (col. 578): *Before the Revolution; The Soviet period and socialist realism; Developments since 1945.*

THE 18TH CENTURY. The building of a common artistic culture among all the peoples of the U.S.S.R. was a direct consequence of the end of feudal isolation and of the emancipation from medieval concepts in favor of new tendencies in art. In Russian art this process began in the 16th century and continued vigorously throughout the 17th. The reforms introduced by Peter the Great in the years bridging the 17th and 18th centuries dealt a final blow to the more obsolete medieval aspects of the economic, social, political, and spiritual life of Russian society; they also had a telling effect on the arts.

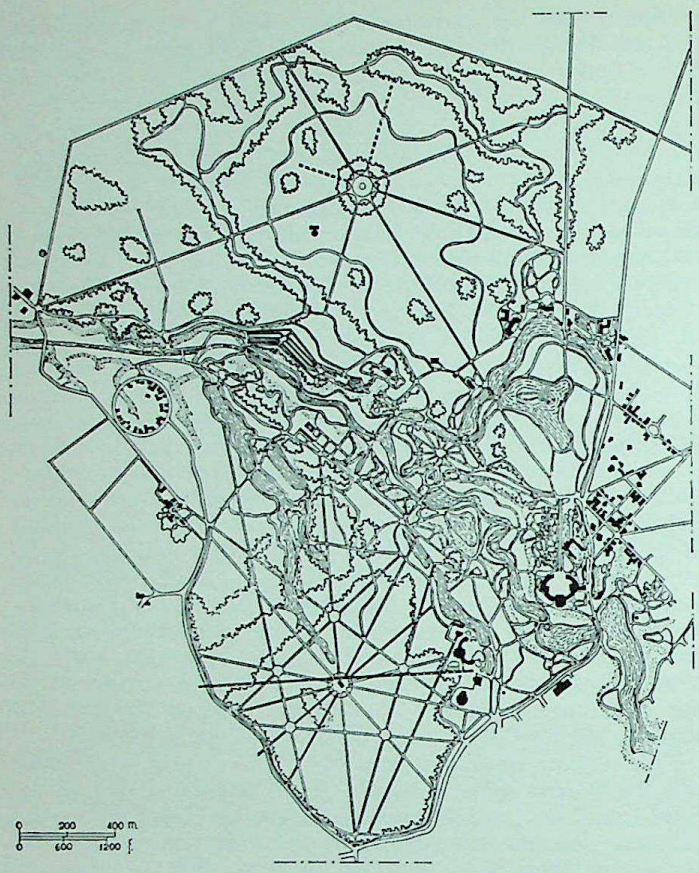
The changeover to new esthetic standards and principles during the first quarter of the 18th century resulted in a revolution in the arts, principally in Russia, but also — though to a less striking degree — in the Ukraine, Byelorussia, and the Baltic States. Benefiting from European realism (q.v.), with its traditions harking back to the Renaissance, Russian art took on a secular character. It would not be correct, however, to regard the era of Peter the Great as a "belated Renaissance"; Russia did not experience a renaissance either in the sense of a decisive break with the spiritualized and poetically conventionalized medieval representation or that of the postulation of a rational, clear, and joyfully harmonious vision of a world of concrete objects in a unified three-dimensional space. The new concepts were being formulated by Russian art at a time when an absolutist, baroque-classicist civilization was developing. Consequently even the earliest examples of the use of architectural orders — by I. P. Zarudni, Domenico Trezzini, M. G. Zemysow, and others in the construction of Leningrad (St. Petersburg) under Peter the Great and his immediate successors — for all their rather stiff simplicity and almost pedestrian matter-of-factness, show an original interpretation of the baroque style. From the 1740s on, architecture reflected the growing might of the state and was dominated by the festive and sumptuous idiom of court baroque, which achieved a truly monumental sweep and splendor in the buildings of Bartolomeo Francesco Rastrelli (PL. 237). The works of the mid-18th-century baroque architects D. V. Ukhtomski, I. F. Michurin (PL. 237), and S. I. Chevakinski, who are considered to have been influenced by the picturesque, national "Naryshkin" style of the late 17th century, are now categorized under European baroque.

The artistic revolution was even more evident in painting and the graphic arts, in which the conventional, flat iconographic tradition was discarded and interest shifted to secular subjects. Portrait painting flourished first and retained its ascendancy throughout the 18th century. The forceful and staid realism of I. Nikitin was tempered in A. Matveev's work by a pictorial softness and a prerococo gracefulness. Both these painters had studied abroad at Peter's expense, as it was his policy to send young painters to more advanced countries in western Europe for their artistic training — a practice that quickly bore fruit. Archaic traditions, however, lived on for a long time, especially in portrait painting. Throughout the 18th century and early in the 19th there existed a distinct tendency in portraiture (exemplified by the work of A. P. Antropov of Leningrad) that combined character delineation and, at times, true psychological expressiveness with a restrained, flat treatment and an archaic fixity of pose, gesture, and look. This kind of portraiture was widely represented in the Ukraine, in Byelorussia, and later in Transcaucasia (e.g., A. Ovnatanian) and was produced by many obscure painters who were serfs by birth (e.g., I. P. Argunov).

During the first half of the 18th century the art of engraving made great headway (e.g., L. Tarasevich and D. G. Levitski in the Ukraine, A. Zubov and M. I. Makhaev in Russia). Michel Lomonosov, a man of encyclopedic versatility, strove to foster a revival of mosaics. Sculpture in the round, which had been virtually unknown in old Russia, made its first appearance in the works of Carlo Bartolomeo Rastrelli, a shining exponent of the baroque style. The climax of this period was the founding, in 1757, of the Academy of Fine Arts in Leningrad, which not only helped to confirm the principles of classicism (q.v.) in the late 18th and the early 19th century but also — and this was more important — fostered the general spread and vigorous flowering of the arts in Russia, the Ukraine, Byelorussia, the Baltic States, Georgia, and Armenia. The Academy of Fine Arts remained for a long time the main art-training center in the Russian Empire, though from the middle of the 19th century an increasingly important role was played by the liberal School of Painting, Sculpture, and Architecture in Moscow.

Russian architecture at this time constituted one of the most remarkable and original schools of neoclassicism in Europe. The feeling of Russia's might, the vast scale of urban construction schemes, the grandiose architectural complexes erected in cities and on country estates, and the tremendous vitality of an aristocratic civilization brimming with creative energies were

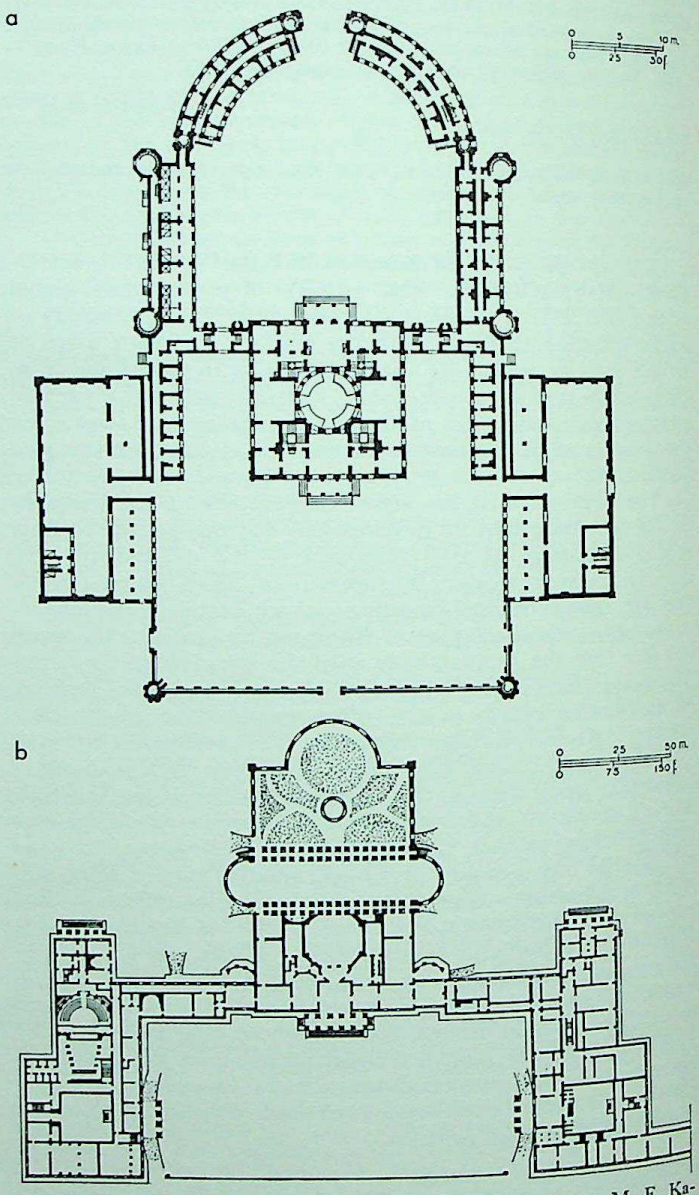
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



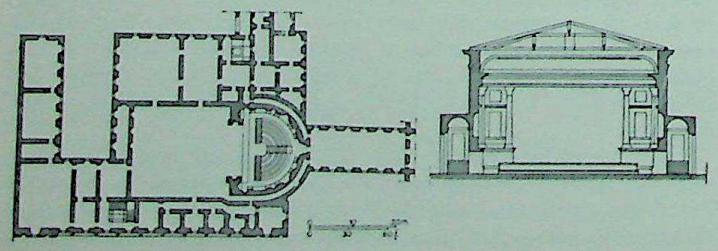
Pavlovsk, near Leningrad, plan of the park, end of the 18th century (architect, C. Cameron).

blended with a genuinely enlightened rationalism and with humanistic ideals. Russian neoclassic architecture eschewed the excessive pomp and decorative dynamics of the baroque, but retained the sense of grandiose spatial unity and of monumental grandeur (see X, cols. 534–538). The whimsy, fragility, and informality of the rococo were almost totally avoided. Russian architects did not concern themselves with the personal factors in home building until the 19th century, and the neoclassic country residences of the 18th century most often have an official air akin to public buildings. As in the early decades of the 18th century, many foreigners worked in Russia at this time: the Frenchman J. B. Vallin de la Mothe, creator of noble and elegant designs; Charles Cameron of Scotland (FIG. 571), a decorator of great subtlety; Giacomo Quarenghi of Italy (FIGS. 571, 573), designer of vast and majestic buildings. A group of Russian architects also became prominent and determined the character of the school: the versatile V. I. Bazhenov (PL. 238), known for colossal projects, who was a refined stylistic and a utopian idealist; M. F. Kazakov (PL. 238; FIGS. 572, 574), the acknowledged leader of the Moscow school (less official than that of Leningrad), who planned cities and built poetic country mansions that were admirably in tune with the Russian landscape; and I. E. Starov of Leningrad (FIG. 572), who strictly adhered to the principles of Palladio (q.v.).

The last third of the 18th century also witnessed the first brilliant achievements in Russian sculpture; the social ideals and optimism that understandably pervaded the country as it began to reap the harvest of Peter's reforms had created a favorable climate for the development of monumental art. By more than coincidence, it was in Russia that Etienne Maurice Falconet (q.v.), showing a bold disregard for existing traditions and canons of equestrian statuary, created that work of genius, his fine monument to Peter the Great in Leningrad. There were several first-rate sculptors working in the tradition of heroic classicism — among them I. P. Martos (PL. 239), M. I. Kozlovsky, and F. F. Shchedrin; but the artist who stands out for creative originality at this time is F. I. Shubin, who devoted himself almost exclusively to portrait busts. In Shubin's sculpture, size and ornateness are tempered by psychological truth, and despite their aristocratic splendor and refined spirituality they seem almost intimate at times.



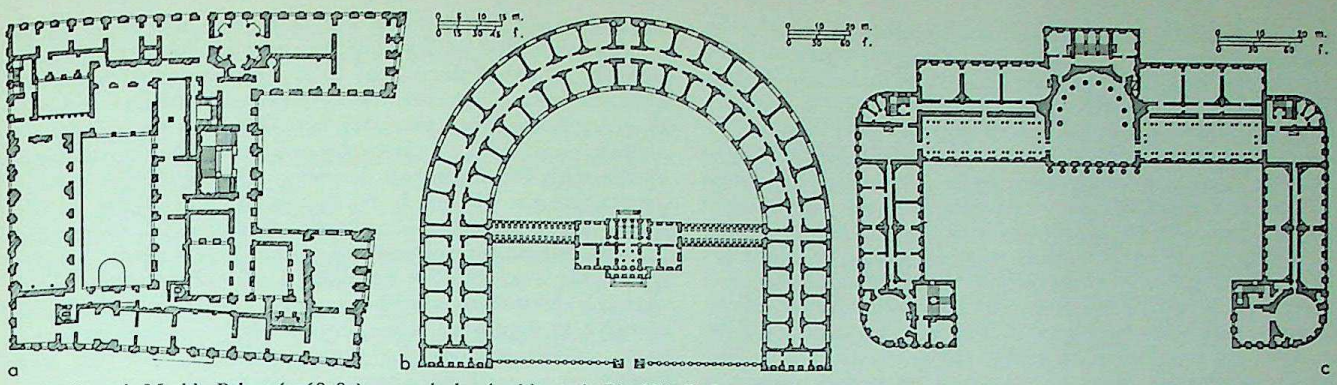
(*a*) Moscow, Petrovski Palace (1775–82), ground plan (architect, M. F. Kazakov); (*b*) Leningrad, Tauride Palace (1783–89), ground plan (architect, I. E. Starov).



Leningrad, Hermitage Theater (1783–87), ground plan and cross section (architect, G. Quarenghi).

While Russian painting in the last third of the 18th century produced a wealth of neoclassic historical paintings (e.g., those of A. P. Losenko), decorative landscapes, and even genre scenes — for the most part naïvely formal representations from peasant life — it was in the realm of portraiture that the best painters asserted themselves and that the most daring innovations were tried. The portrait had not yet become purely an easel painting divorced from its surroundings; it was still a

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



(*a*) Leningrad, Marble Palace (1768–85), ground plan (architect, A. Rinaldi); (*b*) Leningrad, State Bank (1783–90), ground plan (architect, G. Quarenghi); (*c*) Moscow, University, ground plan (architect, M. F. Kazakov; reconstructed 1817–19 by D. I. Gilardi).

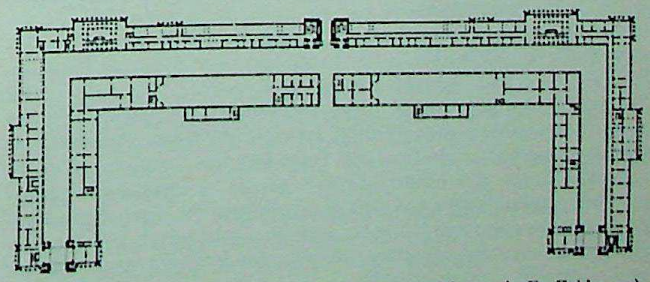
part of the over-all *décor* of palace interiors and of the ostentation that served to emphasize class distinctions. In spite of this, the strongly dynamic portraits of D. G. Levitski, with their soberly truthful characterization, F. S. Rokotov's refined and lyrical works (PL. 244), and V. L. Borovikovski's almost sentimentalized figures constitute a gallery of intere sting individuals, each with his own complex inner life and personal dignity.

ARTISTS AND BIBLIOG. *V. I. Bazhenov*, 1737–99, architect: A. I. Mikhailov, Bazhenov, Moscow, 1951; V. L. Snegirev, Zodchii Bazhenov (The Architect Bazhenov), 2d ed., Moscow, 1962. *V. L. Borovikovski*, 1757–1825, painter: T. V. Alekseeva, Borovikovski, Moscow, 1946. *C. Cameron*, d. 1812, architect: V. N. Taleporovski, Charles Cameron, Moscow, 1939; G. K. Loukomski, Charles Cameron, 1740–1812, London, 1943. *M. F. Kazakov*, 1738–1812, architect: A. I. Vlasiuk and others, Kazakov, Moscow, 1957. *M. I. Kozlovski*, 1735–1802, sculptor: A. G. Romm, Mikhail Ivanovich Kozlovski, Moscow, Leningrad, 1945. *D. G. Levitski*, 1735–1822, painter: N. Moleva, Levitski, Moscow, 1960; N. M. Gershenzon-Chegodaeva, Dimitri Grigor'evich Levitski, Moscow, 1964. *A. P. Losenko*, 1737–73, painter: A. L. Kaganovich, Anton Losenko i russkoe iskusstvo serediny XVIII stoletiya (Anton Losenko and Russian Mid-18th-century Art), Moscow, 1963. *I. P. Martos*, 1752–1835, sculptor: N. N. Kovalenskaya, Martos, Moscow, Leningrad, 1938. *Giacomo Quarenghi*, 1744–1817, architect: D. Severin, Giacomo Quarenghi: Architetto in Russia, Bergamo, 1953; V. N. Taleporovski, Quarenghi, Leningrad, Moscow, 1954; V. Bogoslovski, Quarenghi: master arkhitektury russkogo klassitsizma (Quarenghi: Master of the Architecture of Russian Classicism), Leningrad, Moscow, 1955; G. G. Grimm, Graficheskoe nasledie Quarenghi (Graphic Legacy of Quarenghi), Leningrad, 1962. *C. B. Rastrelli*, 1675–1744, and *B. F. Rastrelli*, 1700–71, father and son, architects: D. Arkin, Rastrelli, Moscow, 1954; Yu. Denisov and A. Petrov, Zodchii Rastrelli (The Architect Rastrelli), Leningrad, 1963; N. I. Arkhipov and A. G. Raskin, B. C. Rastrelli, Leningrad, 1964. *F. S. Rokotov*, 1732/36–1808, painter: N. Lapshina, Fedor Stepanovich Rokotov, Moscow, 1959. *F. F. Shchedrin*, 1751–1825, sculptor: A. L. Kaganovich, Feodosi Fedorovich Shchedrin, Moscow, 1953. *F. I. Shubin*, 1740–1805, sculptor: S. K. Isakov, Fedot Shubin, Moscow, 1738; Leningrad, Gosudarstvenny russkii muzei, Fedot Ivanovich Shubin, Moscow, 1955 (cat.). *I. E. Starov*, 1745–1808, architect: N. Belekhov and A. Petrov, Ivan Starov: Materialy k izucheniyu tvorchestva (Ivan Starov: Materials for the Study of His Work), Moscow, 1950. *D. V. Ukhtomski*, 1719–75, architect: A. Mikhailov, Arkhitektor D. V. Ukhtomski i ego shkola (The Architect D. V. Ukhtomski and His School), Moscow, 1954.

THE 19TH CENTURY. Between 1800 and 1830 occurred the second phase in the artistic flowering of Russia's aristocratic culture. Literature, music, the theater, and the figural arts played a role of tremendous importance in shaping the social outlook of the peoples of the U.S.S.R. in the 19th century. Closely connected and concerned with the fundamental social problems of the day, they exposed the existing social evils and fostered the development of a civic consciousness. Whereas in France the brilliant development of the fine arts had aroused public interest in questions of esthetics, in Russia art was regarded primarily as a force for social progress. From the 1840s on there was an alliance of the arts with the most advanced currents of social thought.

The architecture bears the obvious hallmarks of neoclassicism, with parallels, if not strict analogies, in the French Empire style. Russian neoclassic architecture remained free of the urban bourgeois utilitarianism that characterized the work of Claude Nicolas Ledoux and his colleagues in France. In Russia large, solemn complexes — later marked by a somewhat frigid formality — continued to be built, perhaps even more extensively than before. In the first 30 years of the 19th century such excellent Petersburg architects as A. N. Voronikhin (PL. 240), A. D. Zakharov (PL. 242; FIG. 574), K. I. (Carlo) Rossi (PL. 241), Thomas de Thomon, and V. P. Stasov succeeded in giving Russian neoclassicism its definitive character, having created the best large urban complexes known to world architecture at that time. O. I. Bove (Beauvais) and D. I. Zhilyardi (Gilardi; PL. 241) played a similar role in Moscow, as did L. Stuoka-Gucevičius in Lithuania (PL. 240).

Restricted largely to a secondary role by the need for achieving a synthesis with architecture, sculpture was also basically neoclassic in style. Painting (the orthodox teachers of the Academy of Fine Arts excepted), however, took other courses outside the purview of orthodox neoclassicism and its dogmas. Though Russian painting was never submerged by the tidal wave of romanticism, O. A. Kiprenski, the country's greatest portraitist of the early 19th century, was drawn to it, as was the brilliantly talented K. P. Bryullov. But the emotional agitation and the dynamics of the romantic idiom remained foreign to Russian art. By combining a freely realistic treatment with a poetically inspired vision, Russian painting retained a fundamental plastic unity and simplicity, as seen not only in the portraits of O. A. Kiprenski (PL. 244) but also in A. G. Venetsianov's genre paintings of peasant life and in the landscapes of S. F. Shchedrin, one of the first 19th-century painters of the plein-air school. A more austere and prosaic touch characterized the portraits of V. A. Tropinin of Moscow; born of peasant serfs, he was, together with Venetsianov, largely responsible for the emergence of the early school of realism in the 1840s.



Leningrad, Admiralty (1806–23), ground plan (architect, A. D. Zakharov).

The birth of realism. From 1840 to 1850 Russian painting underwent a crisis. The autocratic regime revealed all its corruption and the civilization of the aristocracy was no longer able to produce anything new or forward-looking. Neoclassic architecture declined, only to be succeeded by an official, pseudo-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Russian style (e.g., K. A. Thon) and by other forms of architectural eclecticism. The Academy of Fine Arts turned into a stronghold of cautious conservatism, and all that was truly alive in art at this time was produced either outside the Academy or in defiance of its rules. The youthful forces of Russian society, banding together to bring about a democratic renewal and, above all, the liquidation of serfdom, found ideological support in literary and artistic circles. The writers of the day, inspired by the stanchly democratic revolutionist V. Belinski, were searching for effective answers to the burning social issues of their time. So were the figural artists, who by the same token were turning more and more to a realistic idiom, to an unprejudiced vision and direct study of life. Paralleling the trend in literature exemplified by Gogol, Turgenev, and Nekrasov, there emerged an analogous movement of critical realism in painting and the graphic arts.

ARTISTS AND BIBLIOG. *O. I. Bove* (Beauvais, 1784–1834, architect: Z. K. Pokrovskaya, Arkhitektor O. I. Bove, Moscow, 1964. *K. P. Bryullov*, 1799–1852, painter: O. Lyaskovskaya, Karl Bryullov, Moscow, Leningrad, 1940; M. Rakova, Bryullov: portretist (Bryullov: Portrait Painter), Moscow, 1956; N. G. Mashkovtsev, ed., K. P. Bryullov v pis'makh, dokumentakh i vospominaniyakh sovremennikov (K. P. Bryullov in Letters, Documents, and Memoirs of Contemporaries), 2d ed., Moscow, 1961. *P. A. Fedotov*, 1815–52, painter: Ya. D. Leshchinski, P. A. Fedotov: khudozhnik i poet (P. A. Fedotov: Artist and Poet), Leningrad, Moscow, 1946; E. N. Atsarkina, ed., P. A. Fedotov, Moscow, 1952 (cat.); N. Khardzhiyev, Sud'ba khudozhnika (Artist's Fate), Moscow, 1954. *A. A. Ivanov*, 1806–58, painter: M. V. Alpatov, Aleksandr Andreevich Ivanov: Zhizn' i tvorchestvo (A. A. Ivanov: Life and Work), 2 vols., Moscow, 1956; Aleksandr Andreevich Ivanov, Moscow, 1956 (cat.). *O. A. Kiprenski*, 1782–1836, painter: E. N. Atsarkina, Orest Kiprenski, Moscow, 1948. *K. I. (Carlo) Rossi*, 1775–1849, architect: V. I. Pilyavski, Zodchii Rossi (The Architect Rossi), Moscow, Leningrad, 1951. *S. F. Shchedrin*, 1791–1830, painter: S. F. Shchedrin, Pis'ma iz Italii (Letters from Italy), Moscow, 1932. *T. G. Shevchenko*, 1814–61, Ukrainian artist: S. E. Raevs'ki, Zhittya i tvorchist' khudozhnika Tarasa Shevchenka (Life and Works of the Artist Taras Shevchenko), Kharkov, 1939; I. C. Goncharova and others, eds., T. G. Shevchenko, 1814–61, Kharkov, 1955 (bibliog.); V. K. Kosyan and others, eds., Taras Shevchenko, Kiev, 1960. *V. P. Stasov*, 1769–1848, architect: V. I. Pilyavski, Stasov arkhitektor, Leningrad, 1963. *L. Stuoka-Gucevičius*, 1753–98, Lithuanian architect: E. Budreika, Architektas Laurynas Stuoka-Gucevičius, Vilnius, 1954. *Thomas de Thomon*, 1760–1813, architect: G. D. Oshchepkov, Arkhitektor Thomon, Moscow, 1950. *V. A. Tropinin*, 1776–1857, painter: N. N. Kovalenskaya, V. A. Tropinin, Moscow, 1930. *A. G. Venetsianov*, 1780–1847, painter: A. N. Savinov, Aleksei Gavrilovich Venetsianov: Zhizn' i tvorchestvo (A. G. Venetsianov: Life and Work), Moscow, 1955; T. V. Alekseeva, Khudozhniki shkoly Venetsianova (Artists of the School of Venetsianov), Moscow, 1958. *A. N. Voronikhin*, 1759–1814, architect: G. G. Grimm, Arkhitektor Voronikhin, Leningrad, Moscow, 1963. *A. D. Zakharov*, 1761–1811, architect: G. G. Grimm, Arkhitektor Andreyan Zakharov, Moscow, 1940.

The Itinerants (*Society for Traveling Art Exhibitions*). The realistic school of painting of the second half of the 19th century had been ushered in by Ivanov and Fedotov. Its rapid and vigorous development may be ascribed to a number of contributing factors: the reforms which the autocracy, under pressure from the liberating movement, had been forced to institute in the 1860s; the powerful surge of democratic sentiment; and the rapid ramification of newly developed bourgeois attitudes with the resultant exacerbation of class conflicts. Architecture entered a period of decline and "stylelessness," and in sculpture only one artist was outstanding — M. M. Antokolski. Russian painting, owing to its consistent liberalism, its close association with the popular movement, and its meaningful and socially significant content, constitutes one of the period's most brilliant and distinctive national styles.

The shaping of the new esthetic concepts was greatly influenced by N. Chernyshevski, the materialist philosopher, an irreconcilable opponent of autocracy, and author of *The Aesthetic Relations of Art to Reality* (1855). This book became the bible of the young democratic generation of painters, who had an advocate and spokesman in V. P. Stasov, the critic, who though at times one-sided was passionately dedicated to the ideas of artistic truth. Two events in the art world played an important part in forming the new school. In 1863, 13 students of the Academy of Fine Arts clamorously refused to illustrate the prescribed test subject and demanded the right to select themes from everyday life. This "mutiny of the 13" publicly proclaimed the birth of a new school that was severing all ties with the stagnating Academy. The leader of the dissenters was the painter I. N. Kramskoi, one of the moving spirits and principal theoreticians of the realist movement. In 1870 this movement was crystallized in the newly founded Society for Traveling Art Exhibitions (Tovarishchestvo peredvizhnykh khudozhestvennykh vystavok). The Itinerants (Peredvizhniki), as they were called, intended to bring their art closer to the masses not only by dealing with subjects that were familiar or of particular concern to the people and through a realistic pictorial idiom but also in the physical sense; their exhibits traveled across the country and awakened interest in the new art everywhere, particularly among many of Russia's nationalities that were seeing contemporary art for the first time. The society existed until 1923 and became, in the early years following the October Revolution of 1917, the link between 19th-century realism and the young generation of Soviet painters. But the period of its true greatness falls in the 1870s and 1880s, when the Itinerants drew to themselves practically all the vital creative forces in Russian art and were joined by artists of the Ukraine, the Baltic States, and, to some extent, Transcaucasia.

The evolution of critical realism can be subdivided into two stages. The first, from the end of the 1850s to the end of the 1870s, was distinguished by the prevalence of critical and at times bitterly satirical works, by an austere, often almost ascetic pictorial treatment, and by an intent scrutiny of nature. The most prominent artist of this period was the leader of the Moscow school of painters, V. G. Perov (PL. 247), author of satirizing genre works and of sincere, restrained, and notably psychological portraits. Also noteworthy among the many artists dedicated primarily to genre painting are K. A. Savitski, G. G. Myasoedov, and V. E. Makovski.

Concurrent with the powerful surge of social movements, the second stage in the history of the Itinerants (late 1870s–mid-1890s) is associated with the highest creative achievements of the foremost artists. Though the painters showed a preference for immense, epic canvases, they nonetheless retained their direct approach to nature; their style, devoid of its former dryness, acquired a rich plasticity, rendering reality with great freedom and animation. In its ultimate manifestations the style is reminiscent of impressionism (q.v.), even though the pre-20th-century plein-air works of the Russian painters always shunned the shimmering vision of the world characteristic of impressionist painting. Russian painters in the last quarter of the 19th century manifested great interest in the artistic developments of European art, but they remained, for the most part, aloof from impressionism and from the subsequent trends in European painting.

Two men incarnate the apogee of Russian realism. The first, I. E. Repin (PLS. 245, 247), was a man of remarkable artistic temperament and a supremely versatile and brilliant painter; in his epic genre scenes, his sensitive and finely characterized portraits, and his dramatic historical compositions he presented a truly comprehensive panorama of Russian life. In Repin's work a passionate devotion to truth and an ingenuous approach to reality are particularly well integrated with the philosophical depth and ideological bias characteristic of democratic painting. The other great master of Russian realism, V. I. Surikov (PL. 247), was a painter of historical subjects and of huge dramatic scenes breathing with the rebellious spirit of popular movements; in his works formal realism acquires a high degree of decorativeness. This quality is even more pronounced in the epic and historical canvases of V. M. Vasnetsov, a leading exponent of a neoromantic tendency, who, on the threshold of the new century, was attempting to create a "Russian style" derived from native folk art. An important role in this trend — which from about 1880 to the early 1900s manifested itself widely in architecture, the decorative and applied arts, and scenography —

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

was played by the Abramtsevo Circle, organized by S. I. Mamontov, an art patron who succeeded in bringing together, at his home in Abramtsevo, the most prominent artists of his day.

The Itinerant school in its second phase granted a privileged place to landscape. The romantic and emotional A. Savrasov and the prosaically precise I. I. Shishkin were succeeded by I. I. Levitan, a superb painter of landscapes, whose perception of the enchanting quality of Russian nature made him the counterpart of Chekhov in literature. Another follower of the Itinerants was V. V. Vereshchagin, a passionate antimilitarist who gained wide renown through his battle scenes, painted with an objective directness bordering on documentary reporting. Very special mention must be made of N. N. Ge (Gay), a vivid and emotional painter whose work runs the gamut from postromantic academicism and ruthless realism to intense psychological expressiveness in his religious scenes inspired by the philosophy of Tolstoy.

Russian painting of the second half of the 19th century constitutes an important and original national style. It was also at this time that the democratic painters obtained their own exhibition center: the Tretyakov Gallery, founded in Moscow in 1856 and later transformed into a national museum of art. An important factor in the artistic evolution of the people of the U.S.S.R. in this period was the great attraction of Europeanized Russian art for the artists of the various Russian regions who were participating in the development of democratic realism. Even though artistic activity in Central Asia and, to a great extent, in Transcaucasia was still dominated by medieval forms and took the shape of traditional folk art and crafts, the well-advanced art of Russia was exerting an ever-growing influence and impelling many young cultures toward a more developed and more complex esthetic taste. This is borne out by painting in the Ukraine, directly derived from the Itinerant movement (e.g., N. K. Pimonenko), and by some aspects of Baltic art (e.g., K. Hūns and J. Rozentāls in Latvia, J. Köler in Estonia).

The last stage in the prerevolutionary history of Russian art began at the close of the 19th century. This was a complex and contradictory period in which Russia was fast approaching the revolutionary explosions of 1905 and 1917. The tensions created by social inequities had reached the breaking point, giving rise to an extraordinary wealth and complexity of artistic manifestations. A renewed impulse manifested itself not only in painting, graphics, and sculpture but also in architecture, the decorative arts, and scenography.

Some painters, such as N. A. Kasatkin and S. V. Ivanov, turned their attention to the life and struggles of the working class and to the revolutionary activities of the masses. But on the whole, toward the beginning of the 20th century, the Itinerants' guiding principle — the investigation of life — was replaced by a new synthetically poetic form of realism that gathered its lyrical inspiration from the turbulence of the period. The most prominent painter of the time is V. A. Serov (PL. 246), whose psychologically astute and artistically refined portraits and fine poetic scenes drawn from nature, history, and contemporary life combine a feeling for living truth with a harmonious beauty of form that is almost classical in its simplicity. The monumental and dramatic work of the painter M. A. Vrubel testifies to his realization — however vague and confused — that a glorious turning point in history was not far away. Vrubel's works show a leaning toward legendary and symbolic forms, and their decorative qualities coincide with those of Art Nouveau (q.v.). The Art Nouveau style in architecture, which gained acceptance in Russia in the 1890s and the early 1900s mainly through the work of F. O. Shekhtel, was supplanted in the first decade of the 20th century by neoclassic tendencies (see PL. 243).

ARTISTS AND BIBLIOG. *I. K. Aivazovski*, 1817–1900, painter: N. S. Barsamov, Ivan Konstantinovich Aivazovski, Moscow, 1962. *M. M. Antokolski*, 1843–1902, sculptor: V. V. Stasov, ed., Mark Matveevich Antokolski: Ego zhizn', tvoreniya, pis'ma i stat'i (Mark Matveevich Antokolski: His Life, Works, Letters and Articles), St. Petersburg, Moscow, 1905. *I. A. Fomin*, 1872–1936, architect: M. Il'in, Ivan Aleksandrovich Fomin, Moscow, 1946; M. Minkus and N. Pekareva, I. A. Fomin, Moscow, 1953. *N. N. Ge (Gay)*, 1831–94, painter: V. V. Stasov, N. N. Ge, Moscow, 1904. *K. Hūns*, 1830–77, Latvian painter: A. Eglitis, Karl Fedorovich Gun, Riga, 1955. *J. Köler*, 1826–99, Estonian painter: V. I. Erm, Këler, Moscow, 1960. *I. N. Kramskoi*, 1837–77, painter: Ivan Nikolaevich Kramskoi: Ego zhizn', perepiska i khudozhestvenno-kriticheskie stat'i (I. N. Kramskoi: His Life, Correspondence and Critical Articles), St. Petersburg, 1888; N. Mashkovtsev, Ivan Nikolaevich Kramskoi, Moscow, 1956; T. M. Kovalenskaya, Kramskoi ob iskusstve (Kramskoi on Art), Moscow, 1960; A. S. Davydova, Kramskoi, Moscow, 1962. *I. I. Levitan*, 1860–1900, painter: S. Glagol' and I. Grabar, I. I. Levitan, Moscow, 1913; I. I. Levitan (ed. A. A. Fedorov-Davydov), Pis'ma, Dokumenty, Vospominaniya (Letters, Documents, Memoirs), Moscow, 1956. *V. G. Perov*, 1833–82, painter: N. P. Sobko, V. G. Perov, St. Petersburg, 1892; A. I. Arkhangel'skaya, V. G. Perov, Moscow, 1950; G. S. Gor, Khudozhnik Perov (The Artist Perov), Leningrad, 1955. *N. K. Pimonenko*, 1862–1912, Ukrainian painter: Ya. P. Zatenatski, N. K. Pimonenko, Kiev, 1955. *V. D. Polenov*, 1844–1927, painter: E. V. Sakharova, Vasili Dmitrievich Polenov: Pis'ma, dnevniki, vospominaniya (V. D. Polenov: Letters, Diaries, Memoirs), 2d ed., Moscow, Leningrad, 1950; T. V. Yurova, Vasili Dmitrievich Polenov, Moscow, 1961. *I. E. Repin*, 1844–1930, painter: O. A. Lyaskovskaya, I. E. Repin, Moscow, 1953 (2d ed., 1962); S. A. Prorokova, Repin, Moscow, 1958; I. Grabar, Repin, 2 vols., Moscow, 1963. *J. Rozentāls*, 1866–1916, Latvian painter: U. Skulme and A. Lapiņš, Janis Rozentāls, Riga, 1954. *I. I. Shishkin*, 1832–98, painter: I. Pikulev, I. I. Shishkin, Moscow, 1955. *V. I. Surikov*, 1848–1916, painter: S. N. Druzhinin, V. I. Surikov, Moscow, 1950; N. G. Mashkovtsev, Surikov, Moscow, 1960 (cat.). *V. M. Vasnetsov*, 1848–1926, painter: N. S. Morgunov and N. D. Morgunova-Rudnitskaya, Viktor Mikhailovich Vasnetsov: Zhizn' i tvorchestvo (V. M. Vasnetsov: Life and Work), Moscow, 1962. *V. V. Vereshchagin*, 1842–1904, painter: A. K. Lebedev, Vasili Vasil'evich Vereshchagin, Moscow, 1953; V. Sadoven', V. V. Vereshchagin, Moscow, 1959. *M. A. Vrubel*, 1856–1910, painter: S. Yaremich, Mikhail Aleksandrovich Vrubel': Zhizn' i tvorchestvo (M. A. Vrubel: Life and Work), Moscow, 1911; Mikhail Aleksandrovich Vrubel': Vystavka proizvedenii (M. A. Vrubel: Exhibition of Works), Moscow, 1957 (cat.); E. P. Gomberg-Verzhbinskaya, ed., Vrubel', Leningrad, 1963. *N. A. Yaroshenko*, 1846–98, painter: V. Prytkov, Nikolai Aleksandrovich Yaroshenko, Moscow, 1960. *I. V. Zholtovski*, 1867–1959, architect: G. D. Oshchepkov, ed., I. V. Zholtovski: Proekty i postroiki (I. V. Zholtovski: Projects and Buildings), Moscow, 1955 (cat.).

THE 20TH CENTURY. *Before the Revolution.* The growth of estheticism, the self-defeating cult of form, and the exclusive concern with sheer technique — symptoms of a cultural crisis and of ideological disintegration — also manifested themselves in Russia in the early years of the 20th century. However, the seriousness of the social conflicts in a revolutionary atmosphere continued to keep alive an interest in social and philosophical issues, in the dramatic and, at times, even tragic aspects of reality. As a result, impressionism (q.v.) in Russia remained a marginal phenomenon, manifesting itself mainly in landscapes (e.g., K. A. Korovin and I. E. Grabar) or assuming an almost melodramatic theatricalism (e.g., the painting of F. Malyavin and the sculpture of A. Golubkina). In 1898 an association significantly named Mir Iskusstva (World of Art) came into being, proclaiming its fundamental hostility to the tenets of democratic realism as it had been practiced by the Itinerants (see SCENOGRAPHY). This association cultivated a farfetched stylization and indulged in a sophisticated cult of the aristocratic past. However, the best artists of the Mir Iskusstva, breaking through the bonds of their narrow estheticism, created works of great artistic value, particulary A. N. Benois (Benua), M. Dobuzhinski, and E. E. Lansere (Lanceray) in the graphic arts and A. Ya. Golovin and Leon Bakst in stage decoration (XII, PL. 442).

During the period between the two revolutions (1905–17) Russian artistic thought was torn by tragic contradictions. The young artists, for the most part out of touch with the roots of national life and with the ideas of liberty, searched desperately for new directions through experimentation — at times making significant artistic discoveries, at other times plunging into individualistic anarchy. The poetic unity that characterized the advanced currents of artistic thought in the first years of the 20th century was transformed into an affected symbolism in the work of certain artists who were members of the Golubaya Roza (Blue Rose) group of 1907. But here, for the first time,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Russian painters came in touch with the work of Cézanne, Gauguin, and the French Fauves (qq.v.). In addition, symbolism influenced the work of such talented artists as the painter V. Borisov-Musatov and the sculptor S. Konenkov.

Even more contradictory was the movement of the Russian "Cézannists" (I. I. Mashkov, P. P. Konchalovski, A. V. Kuprin, and others), who in 1910 organized a group colorfully named Bubnovi Valet (Jack of Diamonds). Many extremely talented artists took their first creative steps under the aegis of this group, which sought a renewal of artistic thought and battled with determination against the obsolete canons of the past. The experiments of the Bubnovi Valet artists were, however, basically leading them toward the disintegration of objective form and ultimately toward the artist's isolation from everyday life and nonobjective art (q.v.). During the years immediately prior to the Revolution this process took on a frantic pace, at times outdistancing similar developments in other countries. The rayonism of Nathalie Gontcharova and Michael Larionov, the fantastic expressionism of Marc Chagall's (q.v.) early work, the suprematism of Kazimir Malevich (q.v.), and the abstractionism of Wassily Kandinsky (q.v.) expressed most eloquently the impasse reached by the more extremist forms of individualism and esthetic subjectivism that were undermining the very foundations of representational painting. The tragedy of the crisis, deeply rooted in social antagonisms, was felt acutely and painfully by those more sensitive artists who eagerly awaited the coming Revolution, from which they expected liberation and the opening up of new creative horizons. It is no wonder that many artists fervently welcomed the coming of the socialist revolution in 1917.

At the end of the 19th century and the beginning of the 20th the various peoples of the U.S.S.R. had completed the transition to a European type of art. The national schools of painting, graphics, and even of sculpture and architecture, founded on the example of Russian and western European art, were intensely active in the Ukraine, Byelorussia, the Baltic States, Georgia, and Armenia. At the same time the various contradictory currents of esthetic thought characteristic of the times were also reflected in the art of these peoples (e.g., the Lithuanian symbolist painter M. K. Čiurlionis and the Georgian primitivist N. Pirosmanishvili). Just before the Revolution, national democratic trends appeared in the art of Azerbaijan.

ARTISTS AND BIBLIOG. *L. N. Bakst*, 1866–1924, painter, graphic artist, and scenographer: A. Levinson, Bakst, New York, London, 1923; C. Einstein, Leon Bakst, Berlin, 1927; R. Lister, The Muscovite Peacock, Meldreth, Eng., 1954. *A. N. Benua* (*Benois*), 1870–1960, painter, graphic artist, and scenographer: A. N. Benua, Zhizn' khudozhnika (Artist's Life), 2 vols., New York, 1955 (Eng. trans., M. Budberg, Memoirs, London, 1960). *M. Z. Chagall* (q.v.): F. Meyer, Marc Chagall (trans. R. Allen), London, 1964 (bibliog.). *M. K. Čiurlionis*, 1875–1911, Lithuanian painter: M. K. Čiurlionis, Vilnius, 1961. *G. Gabashvili*, 1862–1936, Georgian painter: M. Duduchava, Gigo Gabashvili, Moscow, 1958. *S. V. Ivanov*, 1864–1910, painter: I. N. Granovski, Sergei Vasil'evich Ivanov: Zhizn' i tvorchestvo (S. V. Ivanov: Life and Work), Moscow, 1962. *W. Kandinsky* (q.v.). *N. A. Kasatkin*, 1859–1930, painter: K. A. Sitnik, Nikolai Alekseevich Kasatkin, Moscow, 1955. *K. A. Korovin*, 1861–1939, painter and scenographer: N. M. Moleva, ed., K. Korovin: Zhizn' i tvorchestvo (K. Korovin: Life and Work), Moscow, 1963. *K. S. Malevich* (q.v.). *V. Purvīts*, 1872–1945, Latvian painter: O. Saldavs, Vilhelms Purvīts, Riga, 1958. *V. A. Serov*, 1865–1911, painter: I. Grabar, Valentin Aleksandrovich Serov, Moscow, 1914; V. A. Smirnova-Rakitina, Valentin Serov, Moscow, 1961; N. I. Sokolova, Valentin Aleksandrovich Serov, Moscow, 1961.

The Soviet period and socialist realism. The November Revolution of 1917 marked a radical turning point in the cultural development of all the peoples of the U.S.S.R. The founding of a new socialist society called into being new ideas and forms and also created a new position for the artist in society and a new understanding of the social function of artistic creativity. Great difficulties were encountered in the creation and development of Soviet art. Aside from general historical difficulties — the civil war, the destruction of the economy, and, subsequently, the war against Nazi Germany — there were also internal difficulties, since the young socialist culture had to find new ways to solve tremendously complex problems without any previous experience. The foremost issue, formulated by Lenin in the early years of Soviet rule, consisted in overcoming the hiatus between art and the people that had come about as a result of centuries of exploitation of man by man. It was essential to make art belong to the masses and, at the same time, to raise the consciousness of the masses to the level of the peaks of culture attained by mankind. This was to be achieved not only by nationalizing museums and other art treasures, as was done in 1918, but also by channeling every creative activity into close contact with the practical aspects of everyday life and the building of socialism, as well as by constant concern with raising the general cultural and artistic level of the working class. The second issue was how to make use of art in teaching communism to the masses, how to dislodge art from the dead end of bourgeois individualism, and how to counter esthetic disintegration with healthy trends in art that would give rise to a new culture in a socialist society. This meant directing art in the traditions of realism, demanding that it maintain an active role in the people's revolutionary struggle and in the elaboration of communist ideas. The third objective was to create conditions for the development of indigenous art among all the peoples of the U.S.S.R., to liquidate cultural backwardness, and to call to life dormant creative potentialities among the masses.

The cultural development in the U.S.S.R. is directed by the Communist party, whose role it is to assure the conditions necessary for the successful solution of basic artistic problems and for a complete and well-rounded development of the arts in a future communist society. The basic tool for bringing about this cultural flowering is a technique that since the early 1930s has been termed "socialist realism" (see REALISM); its premise is a free development of art, a truthful approach imbued with a feeling of social responsibility and expressing the ideals of communism, while allowing a multiplicity of forms of expression and individual experimentation.

As early as 1918 Lenin put forward the idea of "monumental propaganda," which meant the erection of statues and memorial plaques and, in the abstract, a *rapprochement* of art with the masses and the creation of socially significant and useful works of art. Because of the civil war and the destruction of the economy, "monumental propaganda" did not achieve any outstanding artistic result; yet noted artists took part in it (e.g., the sculptors N. A. Andreev, S. D. Merkurov, S. T. Konenkov, A. Matveev), and it had considerable social repercussions. In the early years of the Soviet Union there was a great deal of activity in the field of the political poster, which for the first time acquired great eloquence [especially the propagandistic and satirical posters for the windows of the Russian Telegraph Agency (ROST), painted by the highly talented poet and artist Vladimir Mayakovsky and others]. In the same period Soviet artists were actively engaged in graphic design, mainly of a satirical nature (e.g., D. S. Moor and V. N. Deni) and, later, in painting and small-scale sculpture.

Soviet art in the 1920s was typified by revolutionary-propagandistic works of an original realistic nature, with intense expressiveness, conventionalized, quite often symbolic figures, and a preponderantly poetic rendering of reality. This trend can be seen in the drawings of A. I. Kravchenko and V. A. Favorski, in the sculpture of I. D. Shadr and V. I. Mukhina (PL. 250), and in the painting of K. S. Petrov-Vodkin, A. Deineka, and others. At the same time, other painters turned to a closer investigation of the new reality and sought to establish closer ties between art and the daily life of the people. This trend, which became consolidated in the Association of Artists of Revolutionary Russia (1922), was based on the traditions of the Itinerants and on the democratic realism of the 19th century. It contributed a great deal to the early artistic record of the great revolutionary events; such important masters of realism as M. B. Grekov, B. V. Ioganson (PL. 248), and I. D. Shadr belonged to this group.

The achievements of realistic art, and — what was more important — the historic task of making art a participant in the spiritual life of the masses, brought about the rapid defeat

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

of formalist and estheticist tendencies. As early as 1921 there was an exodus of the abstractionists into industry, where they sought to find a place for themselves as industrial designers, while other "leftist" tendencies very soon lost ground in the face of the practical demands of society. As a result, in the early 1930s, formalism in Soviet art was on the wane, and the dominant trend was realism in all its multifarious manifestations. Thus the crisis that struck the realist movement throughout the world at the beginning of the 20th century was counteracted in the Soviet Union by a reverse process — the renewal of realistic traditions.

Soviet architecture of the 1920s was affected in its development by the need to solve the new social problems of socialist town planning, mass housing, and the creation of public buildings of a new type, such as workers' clubs and other institutional edifices. A number of talented men of the constructivist school, including M. Ya. Ginzburg and the three Vesnin brothers, based their work on the principles of contemporary functional architecture and applied them on a large scale, falling at times into an ascetic paucity of artistic solutions and at other times into a self-defeating abundance of constructivist forms (PL. 252).

A new period in the history of Soviet art began in the first half of the 1930s. The victory of socialism in the economic and social field had aroused a spirit of enthusiasm among the people. The decade was characterized by a passionate admiration for the classical periods of art, by a tendency toward monumentality, toward the "grand style," not only in architecture and sculpture but also in painting, which became concerned primarily with the large-scale canvas and ideological generalizations. The dissolution of various, at times mutually hostile, art groups in 1932, the call to socialist realism as the principal instrument of Soviet art, and the struggle to produce an art permeated with the ideals of communism resulted in a number of significant artistic achievements in the second half of the 1930s. The artists who took part in this "renaissance" of realism included both old masters, such as the prominent portraitist M. V. Nesterov (PL. 248), and artists who had come to prominence just before or even during the revolutionary period: P. P. Konchalovski, I. Mashkov, M. S. Saryan, S. V. Gerasimov, P. D. Korin, S. D. Lebedeva, and Kukryniksy (collective pseud. of M. V. Kupryanov, P. N. Krylov, and N. A. Sokolov).

In architecture, constructivism was replaced by a type of building that through sheer size, generous recourse to classical forms, and, later, abundant decoration was meant to embody the new spirit. A number of grandiose public structures were the work of such prominent architects as A. V. Shchusev (PL. 251), I. Zholtovski, L. Rudnev, I. Fomin, A. Burov, A. N. Dushkin, and A. V. Vlasov. However, architecture and other plastic arts were eventually marred by the pompousness, showy rhetoricalness, and cold formality that pervaded Soviet art until the early 1950s. Nevertheless, this trend, which was contrary to the spirit of socialist realism, did not penetrate every aspect of the wide variety of artistic endeavors; nor was it able to destroy the logical historical development of socialist art. But its braking effect (especially in the years immediately following World War II) was felt not only in the works directly celebrating the personality of Stalin but also in the spread of a dogmatic approach to the theory and practice of the arts.

In the 1920s and 30s very significant advances were made in the national development of the figural arts, and a number of Soviet nationalities made rapid strides in overcoming an age-old cultural backwardness. Where a more or less advanced and independent artistic tradition had already existed before the Revolution, as in the Ukraine, Georgia, and Armenia, an intense creative activity could be seen. In Azerbaijan, Uzbekistan, Turkmenistan, Tadzhikistan, Kirgizia, and Kazakhstan, this period marks the first appearance of easel painting and sculpture in the European tradition and the establishment of national schools of architecture. Among the foremost Soviet artists of this period are the painter M. S. Saryan and the architect A. I. Tamanyan of Armenia; the sculptor Ya. I. Nikoladze and the painters A. Kutataladze, L. Gudiashvili, and I. Gamrekeli of Georgia; the architects S. A. Dadashev and M. A. Useinov of Azerbaijan; the architect V. I. Zabolotni, the painters A. Shovkunenko, A. Petritski, and T. Yablonskaya, and the graphic artist V. I. Kasiyan of the Ukraine; the sculptors A. Grube and A. Azgur of Byelorussia; the sculptor J. Mikėnas and the graphic artist V. Jurkūnas of Lithuania; the sculptor T. Zaļkalns and the painter E. Kalniņš (Kalninsh; PL. 249) of Latvia; and the painters E. Kits and E. Okas of Estonia, S. A. Chuikov of Kirgizia, and U. Transykbaev of Uzbekistan.

The active participation of all the creative forces of the country in the struggle against fascism during World War II proved that the Leninist idea of a union between art and the people had taken a solid hold in cultural circles. The grim and heroic atmosphere of the period was accurately reflected not only in placards and satirical posters, memorial sculpture, and paintings representing battle scenes but in all artistic creations.

Developments since 1945. After 1945 Soviet artists translated into esthetic terms the nation's tragic experience during the war period; for ten years the war and its sequels remained one of the main themes in the work of painters, graphic artists, and sculptors. The herculean task of reconstructing the ruined cities was undertaken by the architects, who were sometimes confronted with complex town-planning problems, as in the rebuilding of Volgograd, Minsk, Kiev, and other cities. At the same time, there was a continued struggle against formalism and estheticism on the one hand and the dogmatic tendencies connected with the cult of Stalin on the other. Positive measures were taken against these tendencies by the 20th and especially the 22nd Communist party congress. Without making any concessions to bourgeois ideas in art, Soviet artists sought new forms of expression, put forth new esthetic ideas, and multiplied the techniques and manifestations of realism. Joining artists of the older generation, a bevy of young painters searched for a more expressive kind of representational approach to realism.

The new policy of the Communist party called for an extensive program of art education for the masses, with the ultimate aim of producing citizens with a well-rounded general education; this gave rise to a rapid and intense development of the applied arts and to the introduction of creative ideas in broad areas of everyday life and in industry. The enormous housing construction program forced architects to reject ostentatious decoration and to make a persistent effort to create comfortable, economical, and, at the same time, artistically pleasing projects (PL. 254). There was a tremendous proliferation of town-planning projects, which in the U.S.S.R. could proceed unhampered by any restrictions of private land ownership (PL. 167). The increase of activity in the field of design (furniture, ceramics, textiles, etc.) has continued to advance the applied arts, bringing them from the "luxury" category into the sphere of everyday life.

Considerable progress may be noted in the artistic activity of the various nationalities. Whereas before the war allowances still had to be made for a lack of development among peoples who had previously experienced no modern movement in painting, sculpture, or architecture, in the succeeding years most of the national schools have come to make fully valid contributions to the arts. In the immediate postwar years the painters of the Ukraine assumed the lead; they have since been followed to the fore by painters from Azerbaijan, Turkmenistan, Latvia, and Kazakhstan and by sculptors and graphic artists from Lithuania and elsewhere.

ARTISTS AND BIBLIOG. *N. A. Andreev*, 1873–1932, sculptor: A. V. Bakushinski, N. A. Andreev, Moscow, 1939; L. Trifonova, Andreev, Moscow, 1960. *I. I. Brodski*, 1884–1939, painter: I. Brodski, Moi tvorcheskii put' (My Artistic Road), Leningrad, Moscow, 1940; I. A. Brodski, Isaak Izrailevich Brodski, Moscow, 1956. *S. A. Chuikov*, b. 1902, painter: D. Sarab'yanov, Semen Afanas'evich Chuikov, Moscow, 1958. *S. A. Dadashev*, 1905–46, Azerbaijan architect: E. A. Kasimzade and Yu. S. Yaralov, Dadashev, Useinov, Moscow, 1951. *A. A. Deineka*, b. 1899, painter, graphic artist, and sculptor: I. Matsa, A. Deineka, Moscow, 1959. *V. A. Favorski*, b. 1886, graphic artist: V. Favorski, Moscow, 1961; Yu. Khalaminskii, V. A. Favorskii, Moscow, 1964. *S. V. Gerasimov*, b. 1885, painter: S. V. Razumovskaya,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

S. V. Gerasimov: Tvorcheskii put' khudozhnika (S. V. Gerasimov: Artistic Road of an Artist), Moscow, 1937; Sergei Vasil'evich Gerasimov, Moscow, 1959 (cat.). *A. Ya. Golovin*, 1863–1930, scenographer and artist: A. Ya. Golovin, Vstrechi i vpechatleniya (Meetings and Impressions), Leningrad, 1960. *I. E. Grabar*, 1871–1960, painter and art historian: I. Grabar', Moya zhizn' (My Life), Moscow, Leningrad, 1937. *M. B. Grekov*, 1882–1934, painter: G. A. Timoshin, Mitrofan Borisovich Grekov: Zhizn' i tvorchestvo (M. B. Grekov: Life and Work), Moscow, 1961. *B. V. Ioganson*, b. 1893, painter: M. P. Sokol'nikov, Boris Vladimirovich Ioganson: Zhizn' i tvorchestvo (B. V. Ioganson: Life and Work), Moscow, 1937; N. S. Morgunov, B. V. Ioganson, Moscow, 1939. *V. Jurkūnas*, b. 1910, Lithuanian graphic artist: Vitautas Jurkūnas: Raižiniai, Vilno, 1958. *E. Kalniņš*, b. 1904, Latvian painter: E. Kalniņš, Riga, 1959. *V. I. Kasiyan*, b. 1896, Ukrainian graphic artist: G. S. Portnov, Vasilii Il'ich Kasiyan, Moscow, 1957. *P. P. Konchalovski*, 1876–1956, painter: K. Kravchenko, Petr Petrovich Konchalovski, Moscow, Leningrad, 1949; A. D. Chegodaev and K. V. Frolovoi, eds., Konchalovski, Moscow, 1964. *S. T. Konenkov*, b. 1874, sculptor: A. Kamenski, Konenkov, Moscow, 1962; K. S. Kravchenko, Sergei Timofeevich Konenkov, Moscow, 1962. *P. D. Korin*, b. 1892, painter: P. D. Korin, Izbrannye proizvedeniya (Selected Works), Moscow, 1961. *A. I. Kravchenko*, 1889–1940, graphic artist: S. Razumovskaya, Aleksei Il'ich Kravchenko, Moscow, 1962. *Kukryniksy*, collective pseud. of M. V. Kupryanov, b. 1903, P. N. Krylov, b. 1902, and N. A. Sokolov, b. 1903, painters: N. I. Sokolova, Kukryniksy, Moscow, 1962. *B. M. Kustodiev*, 1878–1927, painter: M. Etkind, Boris Mikhailovich Kustodiev, Leningrad, Moscow, 1960; V. E. Lebedeva, B. M. Kustodiev, Moscow, 1961. *E. E. Lansere* (*Lanceray*), 1875–1946, painter and graphic artist: O. I. Podobedova, Evgenii Evgen'evich Lansere, Moscow, 1961. *J. Mikėnas*, b. 1901, Lithuanian sculptor: S. Chervonnaya, Mikenas, Leningrad, Moscow, 1963. *D. S. Moor*, 1883–1946, graphic artist: Yu. Khalaminski, D. Moor, Moscow, 1961. *V. I. Mukhina*, 1889–1953, sculptress: V. I. Mukhina, Literaturno-kriticheskoe nasledie i khudozhestvennoe nasledie (Literary-critical and Artistic Legacy), 2 vols., Moscow, 1960. *M. V. Nesterov*, 1862–1942, painter: A. Mikhailov, M. V. Nesterov, Moscow, 1958. *Ya. I. Nikoladze*, 1876–1951, Georgian sculptor: N. A. Ezerskaya, Ya. I. Nikoladze, Moscow, 1955; I. Urushadze, Ya. Nikoladze, Tbilisi, 1958. *K. S. Petrov-Vodin*, 1878–1939, painter: A. Galushkina, K. S. Petrov-Vodin, Moscow, 1936. *A. A. Plastov*, b. 1893, painter: Arkadii Aleksandrovich Plastov, Moscow, 1956. *M. S. Saryan*, b. 1880, Armenian painter: A. I. Mikhailov, M. S. Sar'yan, Moscow, 1958. *V. A. Serov*, b. 1910, painter: V. A. Serov, Moscow, 1952. *I. D. Shadr*, 1887–1941, sculptor: Yu. D. Kolpinski, Ivan Dmitrievich Shadr, Moscow, 1954; V. P. Shalimova, Ivan Dmitrievich Shadr, Leningrad, 1962. *A. V. Shchusev*, 1873–1949, architect: N. B. Sokolov, Shchusev, Moscow, 1952. *A. I. Tamanyan*, 1878–1936, Armenian architect: Yu. S. Yaralov, Tamanyan, Moscow, 1950. *U. Tansykbaev*, b. 1904, Uzbek painter: B. V. Veimarn, Ural Tansykbaev, Moscow, 1958. *M. A. Useinov*, b. 1905, Azerbaijan architect: E. A. Kasimzade and Yu. S. Yaralov, Dadashev, Useinov, Moscow, 1951. *L. A. Vesnin*, 1880–1933, *V. A. Vesnin*, 1882–1950, and *A. A. Vesnin*, 1883–1959, brothers and architects: M. Il'in, Vesniny, Moscow, 1960. *K. F. Yuon*, 1875–1958, painter: I. N. Bukharina and Ya. V. Apushkina, K. F. Yuon, Moscow, 1936; N. N. Tret'yakov, K. F. Yuon, Moscow, 1957. *V. I. Zabolotni*, 1898–1962, Ukrainian architect: V. Nekrasov and P. Gasovs'ki, V. I. Zabolotni, Kiev, 1947. *T. Zalkalns*, b. 1876, Latvian sculptor: K. Bauman, Teodor Eduardovich Žal'kaln, Moscow, 1960.

BIBLIOG. *Monographs*: I. L. Matsa, ed., Sovetskoe iskusstvo za 15 let: Materialy i dokumentatsiya (Fifteen Years of Soviet Art: Materials and Documentation), Moscow, Leningrad, 1933; A. V. Lunacharski, Stat'i ob iskusstve (Articles on Art), Moscow, Leningrad, 1941; B. M. Nikiforov, Zhivopis' (Painting), Moscow, Leningrad, 1948; Tridtsat let sovetskogo izobrazitel'nogo iskusstva (Thirty Years of Soviet Art), Moscow, 1948; P. I. Lebedev, Sovetskoe iskusstvo v period inostrannoi voennoi interventsii i grazhdanskoi voiny (Soviet Art in the Period of Foreign Military Intervention and Civil War), Moscow, Leningrad, 1949; A. A. Sidorov, Grafika (Graphic Art), Moscow, 1949; Velikaya Otechestvennaya voina v zhivopisi, skul'pture, grafike (The Great Patriotic War in Painting, Sculpture, Graphic Art), Moscow, 1950; R. S. Kaufman, Sovetskaya tematicheskaya kartina, 1917–41 (Paintings on Soviet Subjects, 1917–41), Moscow 1951; N. N. Kovalenskaya, Istoriya russkogo iskusstva pervoi poloviny XIX veka (History of Russian Art in the First Half of the 19th Century), Moscow, 1951; P. M. Sysoev and V. A. Shkvarikov, eds., Mastera sovetskogo izobrazitel'nogo iskusstva, I: Zhivopis' (Masters of Soviet Art, I: Painting), Moscow, 1951; G. E. Lebedev, Russkaya knizhnaya illyustratsiya XIX v. (Russian 19th-century Book Illustration), Moscow, 1952; P. E. Kornilov, Ofort v Rossii XVIII–XX vekov (Etching in Russia, 18th–20th Century, Moscow, 1953; A. F. Korostin, Russkaya litografiya XIX veka (19th-century Russian Lithography), Moscow, 1953; G. H. Hamilton, The Art and Architecture of Russia, Baltimore, 1954; H. Lehmann-Haupt, Art under a Dictatorship, New York, 1954; D. Sarab'yanov, Narodno-osvoboditel'nye idei russkoi zhivopisi vtoroi poloviny XIX veka (The Idea of Popular Emancipation in Russian Painting of the Second Half of the 19th Century), Moscow, 1955; V. Fiala, Russian Painting of the 18th and 19th Centuries, Prague, 1956; Sovetskaya zhivopis' poslevoennykh let (Postwar Soviet Painting), Moscow, 1956 (articles); N. I. Sokolovaya, ed., Sovetskoe iskusstvo, 1917–57: Zhivopis, Skul'ptura, Grafika (Soviet Art, 1917–57: Painting, Sculpture, Graphic Art), Moscow, 1957 (summaries in Eng., Fr., Ger.); Sovetskaya arkhitektura, 1917–57 (Soviet Architecture, 1917–57), Moscow, 1957; Sovetskaya grafika, 1917–57 (Soviet Graphic Art, 1917–57), Moscow, 1957; Sovetskaya skul'ptura, 1917–57 (Soviet Sculpture, 1917–57), Moscow, 1957; S. M. Tsapenko, Sovetskaya arkhitektura na novom etape (Soviet Architecture in a New Stage), Kiev, 1957; A. Fedorov-Davydov, Sovetskii peizazh (Soviet Landscape), Moscow, 1958; Stroitel'stvo i rekonstruktsiya gorodov, 1945–57 (Building and Reconstruction of Cities, 1945–57), 2 vols., Moscow, 1958; V. P. Tolstoi, Sovetskaya, monumental'naya zhivopis' (Soviet Monumental Painting), Moscow, 1958; An Exhibition of Works by Russian and Soviet Artists, London, 1959; A. Kamenski, Sowjetische Malerei, Berlin, 1959; D. Sarab'yanov, Russkaya zhipovis' XIX veka (Russian 19th-century Painting), Moscow, 1959; J. Weinke, Bildende Kunst der Sowjetunion, Leipzig, 1959; Akademiya Khudozhestv SSSR, Khudozhnik i sovremennost' (The Artist and His Epoch), 2 vols., Moscow, 1960–61; V. I. Lenin, O literature i iskusstve (On Literature and Art), 2d ed., Moscow, 1960; O literature i iskusstve: Sbornik dokumentov (On Literature and Art: Collection of Documents), 2d ed., Moscow, 1960; A. A. Sidorov, Risunok russkikh masterov; Vtoraya polovina XIX veka (Drawings of Russian Masters: Second Half of the 19th Century), Moscow, 1960; Stanovlenie sotsialisticheskogo realizma v sovetskom izobrazitel'nom iskusstve (The Formation of Socialist Realism in Soviet Art), Moscow, 1960 (articles); Bor'ba za realizm v izobrazitel'nom iskusstve 20-kh godov: Materialy, dokumenty, vospominaniya (The Fight for Realism in the Art of the 192cs: Materials, Documents, Memoirs), Moscow, 1962; N. P. Bylinkin, ed., Istoriya sovetskoi arkhitektury: 1917–1958 (History of Soviet Architecture: 1917–58), Moscow, 1962; G. Demosfenova, A. Nurok and P. Shantyko, Sovetskii politicheskii plakat (Soviet Political Posters), Moscow, 1962; C. Gray, The Great Experiment: Russian Art 1863–1922, London, 1962; N. N. Kovalenskaya, Istoriya russkogo iskusstva XVIII veka (History of 18th-century Russian Art), Moscow, 1962; Sovetskoe izobrazitel'noe iskusstvo: Zhivopis', Skul'ptura, Grafika (Soviet Art: Painting, Sculpture, Graphic Art), Moscow, 1962; K. N. Afanas'ev and V. Z. Khazanova, eds., Iz istorii sovetskoi arkhitektury, 1917–25 ff. (From the History of Soviet Architecture, 1917–25), Moscow, 1963; V. de Feo, URSS architettura, 1917–56, Rome, 1963; P. I. Lebedev, Russkaya sovetskaya zhivopis' (Soviet Russian Painting), Moscow, 1963; D. N. Sobolevski, Iskusstvo narodu (Art to the People), Moscow, 1963; G. M. Lyudvig, ed., Ocherki istorii stroitel'noi tekhniki Rossii XIX–nachala XX vekov (Essays on the History of Building Techniques in Russia from the 19th to the Beginning of the 20th Century), Moscow, 1964; Akademiya Khudozhestv SSSR, Istoriya sovetskogo iskusstva (History of Soviet Art), I, Moscow, 1965; R. Hare, The Art and Artists of Russia, London, 1965; L. M. Lisitski, Russland: Arkhitektur für eine Weltrevolution, 2d ed., Frankfurt am Main, 1965; V. Quilici, Architettura sovietica contemporanea, Bologna, 1965.

Periodicals: Iskusstvo, 1933 ff.; KS, 1939 ff.; MIA, 1941 ff.; Arkhitekturnoe nasledstvo, 1951 ff.; Institut istorii iskusstv, Soobshcheniya, 1951 ff.; Sovetskaya arkhitektura, 1951 ff.; Sovetskaya arkhitektura; Ezherodnik, 1951 ff.; Institut istorii iskusstv, Ezhegodnik, 1952 ff.

German NEDOSHIVIN

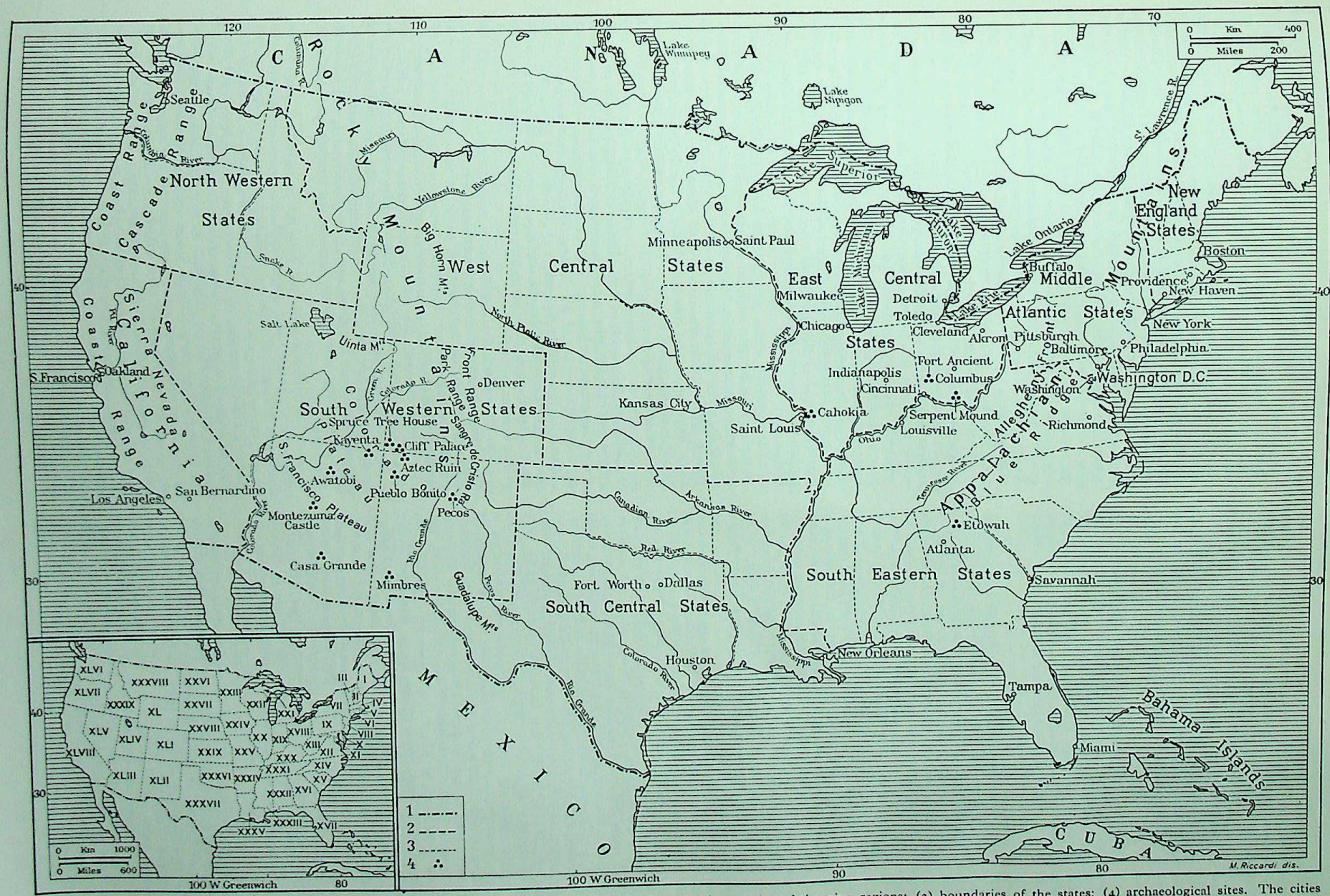
Illustrations: PLS. 237–254; 5 figs. in text.

UNITED STATES OF AMERICA. The United States of America derives its name from the union of the separate states that had developed from the original colonies and grants on the mid-Atlantic coast of North America — the northern of the two continents named after Amerigo Vespucci. The original area of the states was only the strip of land between the coastal mountains and the Atlantic Ocean, but the claims, usually based on the vaguely defined original grants, included much land to the west. The treaties that were made after the conclusion of the Revolutionary War (1775–83) recognized the territory of the new nation as extending westward to the great central river, the Mississippi. The Louisiana Territory was purchased in 1803 and Florida in 1819; Texas was annexed in 1845; the Oregon Territory was acquired in 1846 and California and the Southwest in 1848. Settlement of these territories was in general extremely rapid, and by 1912 all the 48 states comprising the continental United States had been admitted to the Union. Alaska and Hawaii, long held as territories, were admitted as the 49th and 50th states in 1959. The capital city is Washington, coextensive with the District of Columbia, a Federal district.

The present article deals only with the contiguous continental states. For Alaska see the article of that title and for Hawaii see POLYNESIA and POLYNESIAN CULTURES.

The indigenous art of the United States is covered in AMERICAN CULTURES and NORTH AMERICAN CULTURES. However, a number of Indian sites, most of them in the Southwest, are described in the *Monumental centers* below.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Topographical map of the continental United States of America. *Key*: (1) Modern political borders; (2) boundaries of the nine regions; (3) boundaries of the states; (4) archaeological sites. The cities shown on the map indicate the major urbanized areas. Inset, the 48 states: I Maine; II New Hampshire; III Vermont; IV Massachusetts; V Rhode Island; VI Connecticut; VII New York; VIII New Jersey; IX Pennsylvania; X Delaware; XI Maryland; XII Virginia; XIII West Virginia; XIV North Carolina; XV South Carolina; XVI Georgia; XVII Florida; XVIII Ohio; XIX Indiana; XX Illinois; XXI Michigan; XXII Wisconsin; XXIII Minnesota; XXIV Iowa; XXV Missouri; XXVI North Dakota; XXVII South Dakota; XXVIII Nebraska; XXIX Kansas; XXX Kentucky; XXXI Tennessee; XXXII Alabama; XXXIII Mississippi; XXXIV Arkansas; XXXV Louisiana; XXXVI Oklahoma; XXXVII Texas; XXXVIII Montana; XXXIX Idaho; XL Wyoming; XLI Colorado; XLII New Mexico; XLIII Arizona; XLIV Utah; XLV Nevada; XLVI Washington; XLVII Oregon; XLVIII California.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Architecture is comprehensively treated in AMERICA: ART SINCE COLUMBUS, as well as in the Encyclopedia articles on individual architects. Therefore in the present article attention is centered on a subject that is little known: early town planning and land division in the United States.

Other Encyclopedia articles to be consulted as complements to this one are EXHIBITIONS, FOLK ART, FURNITURE, INTERIOR DECORATION, MONUMENTS, MUSEUMS AND COLLECTIONS, NEOCLASSIC STYLES, NEO-GOTHIC STYLES, TOWN PLANNING, and the biographical articles on the major painters and sculptors.

SUMMARY. Historical introduction (col. 587): *Settlement, the frontier, and urbanization; Town plans of the Renaissance, baroque, and neoclassic styles; Planning, 1830–1930; The city in the automobile age.* Monumental centers (col. 592): *Washington; New England States; Middle Atlantic States; South Eastern States; South Central States; East Central States; West Central States; South Western States; North Western States; California.*

HISTORICAL INTRODUCTION. *Settlement, the frontier, and urbanization.* Attempts to colonize the area now within the United States were unsuccessful until the establishment of the Spanish colony at Saint Augustine, Fla., in 1565. Early in the 17th century, while the French were establishing posts north of the St. Lawrence River, the strip of coastal plain between the Spanish and French lands was settled by north European maritime countries — England, the Netherlands, and Sweden. After the Dutch suppressed the Swedish colony, the English took over the Dutch colonies, which gave them complete control of the coastal plain. The French traversed the St. Lawrence to the Great Lakes, made the short portages to the headwaters of the rivers feeding the Mississippi, and by 1682, under the command of the Sieur de La Salle, had followed the Mississippi to its outlet in the previously entirely Spanish Gulf of Mexico. La Salle saw the need for colonies, and reported to Louis XIV: "Should foreigners anticipate us, they will complete the ruin of New France, which they already hem in by their establishments of Virginia, Pennsylvania New England, and Hudson's Bay."

The success of the English was due in great part to the fact that they not only built forts and trading posts but established towns and farms as well. The buildings and sites in the eastern half of the United States that today reflect the occupancy of the Swedes, Dutch, Spanish, and French are a record of cultures the influence of which has passed almost as completely as that of the Indians.

The English knew the art of land division and control, probably, notes Garvan (1951), because of their experience in developing towns for the "plantations" in the Irish colonies early in the 17th century. In general, the first thing the English settlers did in America was to found a town and establish societies that, though provincial, were clearly urban. Plymouth, Mass., was settled in 1620, and by 1626 had houses so much like those of the mother country, and enough of them, that it was exporting finished clapboards and wainscots to England. The movement across New England was by groups of people who settled not separated wilderness homes but towns. Philadelphia was laid out in 1681 before the Pennsylvania settlers left England. According to Forman (1948), Jamestown, Va., founded in 1607, was building groups of London-like brick row houses by 1636. Even in the predominantly plantation areas of the south important towns such as Williamsburg, settled 1633, were established and courthouses and lading places were set out by law. As the Americans moved west into the frontier, according to Wade (1959), "the towns were the spearheads of the frontier. . . . The establishment of towns preceded the breaking of soil in the transmontane [i.e., Appalachian] west." The ability of England to control shipping gave her the Dutch colonies and a good part of the French ones and prevented the Spanish colonies from expanding; but the ability of the English settlers to manage land created the American colonies and eventually formed them into a nation.

Town plans of the Renaissance, baroque, and neoclassic styles. Specific examples of town planning are treated in the regional introductions below, but it is of interest to consider here, in terms of the whole area, the contribution that a study of town planning may make to the vexing problem of style in American cultural productions. Both Hitchcock (see I, cols. 246, 247, 251) and Morrison (1952) have discussed the relationship between American and English architectural styles, noting particularly the problem of the varying time lag. Garvan (1951) has established that when New Haven, Conn., was founded in 1637–38 its streets were laid out according to Vitruvian principles regarding the avoidance of unhealthy winds. The same principles were perhaps applied in the layout of Bergen, N.J., 1660, and this may be the distant source for the consideration of noxious winds evident in the schemes for Azilia, Ga., 1717, and Los Angeles, Calif., 1781–82. The emphasis not only on an extremely ordered plan but also on laying it out according to Vitruvian principles is clear proof that the English settlers utilized Renaissance planning ideas; thus attempts to "medievalize" the earliest period of American architecture simply because its builders carried over many older methods are not valid.

Italian Renaissance site planning is also evident in the gardens of the 17th century, such as the one in the French settlement at St. Croix island, Maine, 1604, those of Dutch New Amsterdam in the survey of 1660, and the garden beside the English fort at Charleston, S.C., of 1680. Clarity of design combined with specific details emphasized in Renaissance planning also occurs in later examples, for instance, Philadelphia in 1682 and, particularly, Savannah in 1733, which Bannister (1961) thinks was ultimately based on ideal city plans derived from antique military encampment practices. Even in Samuel McIntire's plans of 1799 for the garden of Derby Mansion (destroyed) in Salem, Mass., one of the alternative designs was for a formal setting of the type that had reached its height in 17th-century Europe. These examples illustrate that such Renaissance ideas were still influential later on, but the important point to note is that they were introduced and used as early as the New Haven plan of 1641.

By the end of the 17th century an awareness of baroque planning principles, then receiving their most important European emphasis in the development of Versailles (II, FIG. 299; VIII, PL. 437), is evident in the leading American designs, and it is only necessary to study the plans for the two capital cities of the Chesapeake Bay area — Williamsburg and Annapolis, both laid out in the 1690s — to see these principles in operation at their most imaginative. Williamsburg seems to have had no very clear individual antecedents, though it is interesting to compare the plan with that of Mannheim, Germany. Annapolis is obviously based on the plan for London that Christopher Wren submitted after the Great Fire of 1666 (his project was not carried out) and on Bloomsbury Square (built ca. 1660) in London.

The dramatic vistas, emphatically sited buildings, and radial avenues of the baroque reappear in later American plans. A prime mid-18th-century example, Middleton Place Gardens outside Charleston, S.C., shows the continuance of this style. The plan of John Penn's "Solitude" in Pennsylvania, of about the same time, combines Renaissance and baroque elements, as do McIntire's Derby Mansion garden plans of 1799. The most notable examples of the later use of baroque planning are Washington, D.C., in 1792, Detroit in 1807, and several lesser schemes extending to the present, even including the Metropolitan Life Insurance Company's housing developments of Parklabrea and Parkmerced in the Los Angeles area, with a plan somewhat like that of Karlsruhe, Germany (VI, FIG. 258). An important element of the plan for Washington was a grid superimposed on the axial framework, and this element of classical order (presumably used with some knowledge of its Greek origins) is the single most dominant feature of American planning from Jamestown to the present.

The early national period found a natural coincidence with the burgeoning neoclassicism (see NEOCLASSIC STYLES) of the European style centers, and the smaller town plans of the period reflect this element not only in their frequently Greek names and their conception in Greek terms but also in their use of a Romano-Greek geometry derived from the work of C. N. Ledoux. An example is J. J. Ramée's 1811 plan for Union College in Schenectady, N.Y. In America the early neoclassic period is often called the Federal period, and it dates approximately from the 1790s, when Charles Bulfinch's (q.v.) first buildings were being erected in the Boston area, to the 1820s, when the Greek revival style became the characteristic architectural mode.

It is interesting to note that only the last of these great variations on the classical theme, the neoclassic, has received much attention in analyses of American architecture, presumably because a great many important public and private buildings in this style still exist. But if the theories of style proposed here are correct, there must have been structures comparable in classical intent to that of the plan of New Haven. The mill at Newport, R.I., dating from about 1673, in the style of Inigo Jones, and the Hutchinson House in Boston of the 1680s cannot have been merely flukes. Similarly the Isaac Royall House at Medford, Mass., Shirley Place in the Roxbury section of Boston, and St. James's Church at Goose Creek, S.C., all dating from the 18th century, are too strongly baroque to be defined simply as Georgian; their monumental form and architectural decoration seem to represent a distinctly baroque phase of American architecture, comparable to the contemporaneous plans of Williamsburg and Annapolis.

Planning, 1830–1930. As with the dominant Burlingtonian approach of the 18th century, the dominant romantic eclecticism of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the 19th and 20th centuries revealed itself in site plans as well as in buildings. (Where in the 18th century the interest in natural situation was evidenced by names of estates such as "Bel Air," "Monticello," "Belmont," and "Mount Pleasant," the 19th century more concretely experimented with octagonal houses to allow the maximum of sunshine in each room at all seasons.) Beginning with the distinctly artificial planning of the type of Laurel Hill Cemetery, 1838, in Philadelphia and continuing through the 1840s with such schemes as the comparable though more extravagant plan for "Belmont" near Nashville, Tenn. (said to have been laid out by an Italian designer), this movement took on a less geometric framework and turned to greater naturalism in Andrew J. Downing's plan for the Mall in Washington of 1853 and in the chef d'œuvre of the school, the style setter for the rest of the century, New York's Central Park, designed by Frederick Law Olmsted in 1858. Olmsted went on to design most of the largest city parks of the period, Boston's park system, Philadelphia's Fairmount Park, and San Francisco's Golden Gate Park being the most important. Olmsted and George Perkins Marsh were leaders in the conservation movement, which was instrumental in causing great wild stretches of the country to be set aside (Yosemite National Park and the Mariposa Grove of Big Trees in 1864, Yellowstone National Park in 1872, Hot Springs Reservation in 1880).

More importantly, this naturalistic impulse inherent in the romantic movement gave to American culture the land mode typical from the mid-19th century to the present: a wedding of city and hinterland in a web of natural spaces and patterns inserted into and among the ever-extending urban patterns and services. This approach began in a simple way in the project for a California suburb planned in 1854 in which each house lot was to have its own orchard and each block of lots was to be surrounded by poplar trees. It was also the impetus behind the romantic suburb, first introduced with the plan for Llewellyn Park, Orange, N.J., 1857, and it reached a full-scale "naturalized urban" statement in Riverside, Ill., planned by Olmsted in 1868–69, Garden City, N.Y., laid out by A. T. Stewart in 1869, Tuxedo Park, N.Y., laid out by Bruce Price in the 1880s, and Roland Park, Baltimore, Md., laid out by Olmsted in 1891.

This movement received its final impetus from 1890 to 1910, largely through the influence of Olmsted and Daniel H. Burnham, in the plan for the World's Columbian Exposition in Chicago, 1893 (V, PL. 190, FIG. 287), the McMillan Commission plan for Washington, 1902, and the plan for Chicago, 1909. These extremely popular plans formed the taste not only of the leaders of the day but also of a vast part of the American populace. To enumerate all the plans combining the romantic naturalism of Olmsted and the romantic formalism of Burnham would be to list all the growing cities of the United States in a period when, as Schlesinger (1949) says, "urbanization for the first time became a controlling factor in national life." The most important plans, in addition to the three noted above, are Cleveland, Ohio, 1902; San Francisco, Calif., plan by Burnham, 1906; New Haven, Conn., plan by Cass Gilbert and Olmsted, before 1910; Buffalo, N.Y., Terminal plan by George Clary, before 1910; Olympia, Wash., 1911; Denver, Colo., 1912; Minneapolis, Minn., 1917; Fairmount Parkway in Philadelphia, Pa., by Jacques Gréber, 1919; Lincoln, Nebr., 1920; St. Paul, Minn., 1921; and Palm Beach, Fla., 1930. The succeeding developments of the classicized naturalistic city are interesting to follow in one site, Balboa Park, San Diego, Calif.: the park, created in 1868–70 (following the example of Golden Gate Park), received a heavy planting of trees in 1889; the road system was laid out in 1902–09; it was the site of the Panama-California Exposition in 1915 and of the California-Pacific Exposition in 1935–36, and the massive group of huge "White City" buildings remaining from these exhibitions is now used as the city's civic center.

The city in the automobile age. The expansion of public transportation and the recent increase in automobile traffic have produced a new period in American city history. It is a period of remarkable urban sprawl, as exemplified by Los Angeles. This extension has created a development toward clusters or groups of cities — defined as "urban regions" by Tunnard and Reed (1955) — and a shift of residency toward the edges of the cities, to "suburbia," "exurbia," the "urban fringe," to use some of the popular terms of the day. Since the advent of the automobile the tendency has been, first, for the rural regions to lose population to the city and, second, for the central city to lose population (and function) to its edges. Thus the vast building programs on the edges of the cities have been accompanied by major rebuilding in the service cores and by a mammoth highway-building program to serve the new-scaled metropolitan and urban regions. So far no pattern for controlling these features has emerged that is both practicable and desirable, nor have any solutions yet been reached to prevent the automobile from strangling the major cities.

The international style is reflected in the severe skyscraper developments of the larger cities, though most of the projects for planning these in relation to each otner and to other structures and land uses have not come to fruition except for the 1930s Rockefeller Center in New York. In 1961 Nathaniel Skidmore, one of the most important leaders of the international school, expressed his doubts about the universal applicability of such schemes.

BIBLIOG. See the bibliogs. for AMERICAS: ART SINCE COLUMBUS. See also: M. G. Van Rensselaer, Henry Hobson Richardson and His Works, Boston, New York, 1888; M. Schuyler, American Architecture, New York, 1892 (ed. W. H. Jordy, 2 vols., Cambridge, Mass., 1961; abridged ed., New York, 1964); A. Fabre, Les Sky Scratchers ou Les hautes maisons américaines, Nîmes, 1896; H. Monroe, John Wellborn Root: A Study of His Life and Work, Boston, 1896; W. R. Ware, ed., The Georgian Period: Being Measured Drawings of Colonial Work, 3 vols., Boston, 1899–1902 (2d ed., 1923); A. B. Hulbert, Historic Highways of America, 16 vols., Cleveland, 1902–05; A. P. Brigham, Geographic Influences in American History, Boston, 1903; J. W. Dow, American Renaissance: A Review of Domestic Architecture, New York, 1904; A. H. Granger, Charles Follen McKim: A Study of His Life and Work, Boston, 1913; A. Embury, II, Early American Churches, Garden City, N.Y., 1914; H. D. Eberlein, The Architecture of Colonial America, Boston, 1915; A Monograph of the Work of McKim, Mead and White, 1897–1915, 4 vols., New York, 1915–20; S. F. Kimball, Thomas Jefferson: Architect, Boston, 1916; J. Gréber, L'architecture aux Etats-Unis: Preuve de la force d'expansion du génie français, 2 vols., Paris, 1920; L. G. White, Sketches and Designs by Stanford White, New York, 1920; W. Hegemann and E. Peets, The American Vitruvius: An Architect's Handbook of Civic Art, New York, 1922; A Monograph of the Work of Mellor, Meigs and Howe, New York, 1923; J. Jackson, American Colonial Architecture: Its Origin and Development, Philadelphia, 1924; C. H. Reilly, McKim, Mead and White, London, 1924; The Architecture of John Russell Pope, 3 vols., New York, 1925–30; C. A. Place, Charles Bulfinch: Architect and Citizen, Boston, 1925; C. H. Whitaker, ed., Bertram Grosvenor Goodhue: Architect and Master of Many Arts, New York, 1925; J. Jackson, Development of American Architecture: 1783–1830, Philadelphia, 1926; M. López Otero, Una influencia española en la arquitectura norte-americana, Madrid, 1926; H. Major, The Domestic Architecture of the Early American Republic: The Greek Revival, Philadelphia, 1926; S. Isham, The History of American Painting (ed. R. Cortissoz), 2d ed., New York, 1927; H. C. Mercer, The Origin of Log Houses in the United States, OTNE, XVIII, 1927, pp. 2–20, 51–63; T. E. Tallmadge, The Story of Architecture in America, New York, 1927; R. Newcomb, Mediterranean Domestic Architecture in the United States, Cleveland, 1928; R. A. Cram, American Church Building of Today, New York, 1929; C. Z. Klauder and H. C. Wise, College Architecture in America and Its Part in the Development of the Campus, New York, 1929; C. Moore, The Life and Times of Charles Follen McKim, Boston, 1929; E. W. Root, Philip Hooker: A Contribution to the Study of the Renaissance in America, New York, 1929; The Work of Cram and Ferguson, Architects, Including Work by Cram, Goodhue and Ferguson, New York, 1929; S. Cheney, The New World Architecture, London, 1930; E. W. Hoak and W. H. Church, Masterpieces of Architecture in the United States, New York, 1930; A. B. Hulbert, Soil: Its Influence on the History of the United States, New Haven, London, 1930; F. Mujica, History of the Skyscraper, New York, 1930; C. C. Baldwin, Stanford White, New York, 1931; Contemporary American Architects: Ely Jacques Kahn, New York, 1931; Contemporary American Architects: Ralph Adams Cram, Cram and Ferguson, New York, 1931; J. M. Howells, Lost Examples of Colonial Architecture, New York, 1931 (repr. 1963); A. G. B. Lockwood, Gardens of Colony and State: Gardens and Gardeners of the American Colonies and of the Republic before 1840, 2 vols., New York, 1931–34; A. H. Barr, Jr., et al., Modern Architects, New York, 1932; C. F. Bragdon, The Frozen Fountain, New York, 1932; H.-R. Hitchcock, Jr., and P. Johnson, The International Style: Architecture since 1922, New York, 1932 (2d ed., 1966); C. O. Paullin, Atlas of the Historical Geography of the United States (ed. J. K. Wright), Washington, 1932; M. Savelle, George Morgan: Colony Builder, New York, 1932; H. Cahill and A. H. Barr, Jr., ed., Art in America, New York, 1935; I. T. Frary, Early American Doorways, Richmond, Va., 1937; G. A. Fuller Co., General Contractors, 1882–1937: A Book Illustrating Recent Work of This Organization, New York, 1937; C. E. Jeanneret-Gris (Le Corbusier), Quand les cathédrales étaient blanches, Paris, 1937 (Eng. trans., F. E. Hyslop, New York, 1947); H. Morrison, Louis Sullivan: Prophet of Modern Architecture, New York, 1937 (2d ed., 1962); R. Newcomb, Spanish Colonial Architecture in the United States, New York, 1937; C. H. Aldrich, Il Grattacielo, Rome, 1938; I. T. Frary, Thomas Jefferson: Architect and Builder, Richmond, Va., 1939; N. M. Isham, A Glossary of Colonial Architectural Terms, New York, 1939; G. Nelson, Industrial Architecture of Albert Kahn, New York, 1939; L. Barrington, Historic Restorations of the Daughters of the American Revolution, New York, 1941; Preservations of Historic Buildings, JSAH, I, 3–4, 1941, pp. 1–45; J. Frazer Smith, White Pillars: Early Life and Architecture of the Lower Mississippi Valley Country, New York, 1941; C. W. Drepperd, American Pioneer Arts and Artists, Springfield, Mass., 1942; H.-R. Hitchcock, In the Nature of Materials, New York, 1942; W. Lescaze, On Being an Architect, New York, 1942; J. Lipman, American Primitive Painting, New York, London, 1942; J. Mellquist, The Emergence of an American Art, New York, 1942; T. F. Hamlin, Greek Revival Architecture in America, London, New York, 1944; H. Leipziger, The Architectonic City in the Americas: Significant Forms, Origins and Prospects, Austin, Tex., 1944; E. Mock, ed., Built in USA 1932–44, New York, 1944; H.-R. Hitchcock, American Architectural Books: A List of Books, Portfolios and Pamphlets on Architecture and Related Subjects Published in America before 1895, 3d ed., Minneapolis, 1946 (repr. 1962); G. T. Trewartha, Types of Rural Settlement in Colonial America, Geog. Rev., XXXVI,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1946, pp. 568–96; J. Drury, Historic Midwest Houses, Minneapolis, 1947; A. Christ-Janer, Eliel Saarinen, Chicago, 1948; J. M. Fitch, American Building: The Forces That Shape It, Boston, 1948; H. C. Forman, The Architecture of the Old South: The Medieval Style, 1585–1850, Cambridge, Mass., 1948; B. L. Pickens, Regional Aspects of Early Louisiana Architecture, JSAH, VII, 1–2, 1948, pp. 33–36; H. G. Alberg, The American Guide, New York, 1949; P. Blake, Marcel Breuer: Architect and Designer, New York, 1949; A. Ford, Pictorial Folk Art, New York, 1949; A. M. Schlesinger, The City in American Civilization, in Paths to the Present, New York, 1949; T. Sizer, John Trumbull: Amateur Architect, JSAH, VIII, 3–4, 1949, pp. 1–6; F. R. Stevenson and C. Feiss, The Planned Community: A North American Heritage, JSAH, VIII, 3–4, 1949, pp. 17–26; T. E. Sanford, The Architecture of the South-West: Indian, Spanish, American, New York, 1950; T. T. Waterman, The Dwellings of Colonial America, Chapel Hill, N.C., 1950; A. N. B. Garvan, Architecture and Town Planning in Colonial Connecticut, New Haven, 1951; E. I. Gatling, John Berry of Hillsboro, North Carolina, JSAH, X, 1, 1951, pp. 18–22; M. Jensen, Regionalism in America, Madison, Wis., 1951; C. Lancaster, Jefferson's Architectural Indebtedness to Robert Morris, JSAH, X, 1, 1951, pp. 3–10; C. L. V. Meeks, Lynx and Phoenix: Litchfield and Williamsburg, JSAH, X, 4, 1951, pp. 18–23; C. S. Stein, Toward New Towns for America, Liverpool, 1951; E. Bitterman, Art in Modern Architecture, New York, 1952; H. S. Morrison, Early American Architecture from the First Colonial Settlements to the National Period, New York, 1952; D. D. Dickason, The Daring Young Men, Bloomington, Ind., 1953; H. Ferriss, Power in Buildings, New York, 1953; J. D. Forbes, Victorian Architect: The Life and Work of William Tinsley, Bloomington, Ind., 1953; P. C. Johnson, Mies van der Rohe, 2d ed., New York, 1953; J. Stubblebine, The Northwest Architecture of Pietro Belluschi, New York, 1953; R. Taft, Artists and Illustrators of the Old West, 1850–1900, New York, 1953; F. T. Howe, More About Asher Benjamin, JSAH, XIII, 3, 1954, pp. 16–19; W. Andrews, Architecture, Ambition and Americans, New York, 1955 (repr. 1964); H. Bartholomew and J. Wood, Land Uses in American Cities, Cambridge, Mass., 1955; P. Blake, Marcel Breuer: Sun and Shadow, New York, 1955; C. Bridenbaugh, Cities in Revolt: Urban Life in America, 1743–76, New York, 1955; C. Brindenbaugh, Cities in the Wilderness: The First Century of Urban Life in America, 1625–1742, 2d ed., New York, 1955; T. F. Hamlin, Benjamin Henry Latrobe, New York, 1955; A. H. Hawley, The Changing Shape of Metropolitan America, Glencoe, Ill., 1955; E. W. Kramer, Detlef Lienau: An Architect of the Brown Decades, JSAH, XIV, 1, 1955, pp. 18–25; L. Mumford, The Brown Decades, 2d ed., New York, 1955; L. Mumford, Sticks and Stones, 2d ed., New York, 1955; J. P. Noffsinger, The Influence of the Ecole des Beaux-Arts on the Architects of the United States, Washington, 1955; V. J. Scully, Jr., The Shingle Style: Architectural Theory and Design from Richardson to Wright, New Haven, 1955; C. Tunnard and H. H. Reed, Jr., American Skyline: The Growth and Form of Our Cities and Towns, Boston, 1955; R. B. Wischnitzer, Synagogue Architecture in the United States: History and Interpretation, Philadelphia, 1955; F. L. Wright, An American Architecture, New York, 1955; W. L. Zorn, The Capitols of the United States of America, Monroe, Mich., 1955; L. Hilbersheimer, Mies van der Rohe, Chicago, 1956; E. Kaufmann, Jr., Louis Sullivan and the Architecture of Free Enterprise, Chicago, 1956; C. L. V. Meeks, The Railroad Station: An Architectural History, New Haven, 1956; R. J. Neutra, Mensch und Wohnen, Stuttgart, 1956; R. Purcell, Government and Art, Washington, 1956; J. Szarkowski, The Idea of Louis Sullivan, Minneapolis, 1956; A. Whittick, Eric Mendelsohn, 2d ed., New York, 1956; H. F. and E. R. Withey, Biographical Dictionary of American Architects, Los Angeles, 1956; F. A. Gutheim, 1857–1957: 100 Years of Architecture in America, New York, 1957; J. Maass, The Gingerbread Age, New York, 1957; Ralph Walker: Architect, New York, 1957; J. I. H. Baur, Nature in Abstraction, New York, 1958; R. R. Beirne and J. H. Scarff, William Buckland, 1734–74: Architect of Virginia and Maryland, Baltimore, 1958; B. F. L. Clarke, Anglican Cathedrals Outside the British Isles, London, 1958; J. D. Forbes, Shepley, Bulfinch, Richardson & Abbott, Architects: An Introduction, JSAH, XVII, 3, 1958, pp. 19–31; H.-R. Hitchcock, Architecture: 19th and 20th Centuries, Baltimore, 1958 (2d ed., 1963); O. Lancaster, Here, Of All Places, Boston, 1958; J. Peter, Masters of Modern Architecture, New York, 1958; C. F. Schmidt, The Octagon Fad, Scottsville, N.Y., 1958; U.S. Dept. of Agriculture, Land: The Yearbook of Agriculture, 1958, Washington, 1958; R. W. Winter, Fergusson and Garbett in American Architectural Theory, JSAH, XVII, 4, 1958, pp. 25–30; W. Boesiger, Richard Neutra, 1950–60: Buildings and Projects, New York, 1959; C. Feis, Early American Public Squares, in P. Zucker, ed., Town and Square, New York, 1959, pp. 237–55; I. R. M. McCallum, Architecture U.S.A., London, 1959; L. Mumford, Roots of Contemporary American Architecture, 2d ed., New York, 1959; H. H. Reed, Jr., The Golden City, Garden City, N.Y., 1959; R. C. Wade, The Urban Frontier: The Rise of Western Cities, 1790–1830, Cambridge, Mass., 1959; F. L. Wright, Frank Lloyd Wright: Drawings for a Living Architecture, New York, 1959; W. Andrews, Architecture in America: A Photographic History from the Colonial Period to the Present, New York, 1960; Y. Bizardel, American Painters in Paris, New York, 1960; A. Bush-Brown, Louis Sullivan, New York, 1960; A. D. Chegodaev, Iskusstvo Soedinënnykh Shtatov Ameriki (Art of the United States of America), Moscow, 1960; C. W. Condit, American Building Art: The 19th Century, New York, 1960; W. Connely, Louis Sullivan as He Lived, The Shaping of American Architecture, New York, 1960; A. Drexler, Ludwig Mies van der Rohe, New York, 1960; W. von Eckardt, Eric Mendelsohn, New York, 1960; J. M. Fitch, Walter Gropius, New York, 1960; D. Gebhard, A Guide to the Existing Buildings of Purcell and Elmslie, 1910–20, Roswell, N. Mex., 1960; J. J. Jarves, The Art-idea (ed. B. Rowland, Jr.), Cambridge, Mass., 1960; E. Kaufmann and B. Raeburn, Frank Lloyd Wright: Writing and Buildings, New York, 1960; C. Lancaster, Architectural Follies in America, Rutland, Vt., 1960; O. W. Larkin, Art and Life in America, 2d ed., New York, 1960; E. McCoy, Richard Neutra, New York, 1960; D. M. Mendelowitz, A History of American Art, New York, 1960; V. J. Scully, Jr., Frank Lloyd Wright, New York, 1960; T. C. Bannister, Oglethorpe's Sources for the Savannah Plan, JSAH, XX, 1961, pp. 47–62; J. E. Burchard and A. Bush-Brown, Architecture of America: A Social and Cultural History, Boston, 1961; W. A. Coles and H. H. Reed, Jr., Architecture in America: A Battle of Styles, New York, 1961; H. Dorra, The American Muse, New York, 1961; W. von Eckardt, ed., Mid-century Architecture in America, Baltimore, 1961; G. G. Elmslie, Letter to Frank Lloyd Wright, JSAH, XX, 1961, pp. 140–42; J. M. Fitch, Architecture and the Esthetics of Plenty, New York, 1961; J. Gottmann, Megalopolis: The Urbanized Northeastern Seaboard of the United States, New York, 1961; H.-R. Hitchcock, The Architecture of H. H. Richardson and His Time, 2d ed., New York, 1961; L. Mumford, The City in History, New York, 1961; H. Park, A List of Architectural Books Available in America before the Revolution, JSAH, XX, 1961, pp. 115–30; J. W. Reps, Thomas Jefferson's Checkerboard Towns, JSAH, XX, 1961, pp. 108–14; J. M. Dixon, Architectural Design Preview, U.S.A., New York, 1962; J. T. Flexner, That Wilder Image: The Painting of America's Native School from Thomas Cole to Winslow Homer, Boston, 1962; F. W. W. Kervick, Architects in America of Catholic Tradition, Rutland, Vt., 1962; K. Kuh, The Artist's Voice, New York, 1962; R. J. Neutra, Life and Shape, New York, 1962; V. J. Scully, Jr., Louis I. Kahn, New York, 1962; M. Breuer, Buildings and Projects: 1921–51, New York, 1963; S. Giedion, Space, Time and Architecture, 4th ed., Cambridge, Mass., 1963; L. Goodrich, Pioneers of Modern Art in America, New York, 1963; C. Lancaster, The Japanese Influence in America, New York, 1963; J. Lipman, ed., What Is American in American Art, New York, 1963; E. P. Richardson, A Short History of Painting in America, New York, 1963; B. B. Tracy and W. H. Gerdts, ed., Classical America, 1815–45, Newark, 1963 (cat.); C. W. Condit, The Chicago School of Architecture, Chicago, 1964; T. H. Creighton, American Architecture, Washington, 1964; A. Gowans, Images of American Living, Philadelphia, 1964; W. Muschenheim, Elements of the Art of Architecture, New York, 1964; H. S. Ransom, ed., The People's Architects, Chicago, 1964; H. W. Rose, The Colonial Houses of Worship in America, New York, 1964; A. Toffler, The Culture Consumers, New York, 1964; G. S. Chamberlain, Studies on American Painters and Sculptors of the 19th Century, Annandale, Va., 1965; J. Early, Romanticism and American Architecture, New York, London, 1965; A. Nicholson, American Houses in History, New York, 1965; J. W. Reps, The Making of Urban America: A History of City Planning in the United States, Princeton, 1965; B. Rosenberg and N. Fliegel, The Vanguard Artist: Portrait and Self-Portrait, Chicago, 1965; O. L. Wright, The Work of Frank Lloyd Wright, New York, 1965; J. M. Fitch, American Building, 2d ed., I, Boston, 1966; P. Heyer, American Architects, New York, 1966.

Indian arts: see the bibliog. for NORTH AMERICAN CULTURES. See also: H. E. Driver, Indians of North America, Chicago, 1961; W. R. Wedel, Prehistoric Man on the Great Plains, Norman, Okla., 1961; W. R. Ballard, The Cerro Colorado Site and Pithouse Architecture in the Southwest United States prior to A.D. 900, Cambridge, Mass., 1962; G. Catlin, Letters and Notes on the Manners, Customs and Condition of the North American Indians, 2 vols., Minneapolis, 1965; O. W. Holm, Northwest Coast Indian Art, Seattle, 1965; J. C. McGregor, Southwestern Archaeology, 2d ed., Urbana, Ill., 1965; R. F. Spenser et al., The Native Americans, New York, 1965; M. Robbins and M. B. Irving, The Amateur Archaeologist's Handbook, New York, 1966.

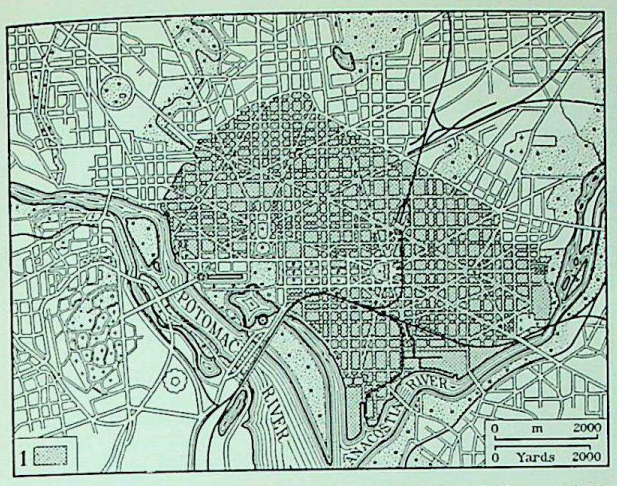
MONUMENTAL CENTERS. In the following repertory the monumental centers are grouped by regions that are based, with slight variations, on the regions defined by the Human Relations Files of Yale University. Washington, D.C., the nation's capital, is described first.

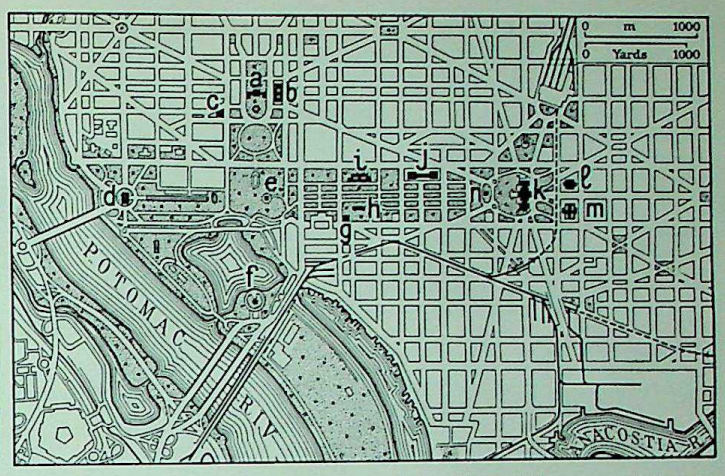
Washington. Established as the permanent seat of the national government by act of Congress in 1790, the city is approximately in the center of the states that then constituted the nation. The early history of the land is typical of most of the eastern seaboard: occupation by grain-raising Indians of the Algonquian linguistic group, exploration by Europeans in the 16th and 17th centuries, land division and settlement in the late 17th and the 18th century, and the creation and gradual rise of towns, principally as ports and county seats. Evidence of Indian occupation is an extensive quarry along the gorge of the stream, Rock Creek, bisecting the city. Nothing remains of the European activities from before the mid-18th century. Georgetown, formerly in Maryland but now the western quarter of Washington, was settled in the late 17th century and officially laid out in 1751. The old street pattern and many early houses still exist (see below).

The present form of the central district of Washington was planned by Major Pierre Charles L'Enfant (who had designed the temporary capital in New York City) in 1790–93. L'Enfant chose Jenkin's Hill on the Potomac River (it was "a pedestal waiting for a monument," he said) for the site of the Capitol, and then placed the White House (or President's House) upriver, in a relationship probably suggested by that of the Grand Trianon to the Palace at Versailles (Kimball, 1918). He then laid out the series of radiating avenues and "star" intersections that still dominate the city, and superimposed a grid of streets on them (FIG. 593).

Although several majestic government buildings were erected, the city developed very slowly, and it was only in 1871 that the framework of streets was made really usable. Preparations for the centennial celebration of the establishment of the seat of government, which

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Washington. *Left*: General plan. *Key*: (1) Area of the original plan by Pierre Charles L'Enfant in 1792. *Right*: Plan of the center of the city. Principal monuments: (*a*) White House; (*b*) Treasury Building; (*c*) Corcoran Gallery of Art; (*d*) Lincoln Memorial; (*e*) Washington Monument; (*f*) Jefferson Memorial; (*g*) Freer Gallery of Art; (*h*) Smithsonian Institution; (*i*) United States National Museum; (*j*) National Gallery of Art; (*k*) Capitol; (*l*) Supreme Court Building; (*m*) Library of Congress Building; (*n*) Grant Memorial.

was to take place in 1900, brought forth a rash of schemes, mainly inspired by the architecture of the World's Columbian Exposition in Chicago, for completing the beautification of the city. In 1894 the architect Glenn Brown suggested that the framework for the erection of these buildings should be a revitalized and expanded version of the L'Enfant plan. A commission headed by Senator James McMillan included the sculptor Augustus Saint-Gaudens, the architects Burnham and Charles F. McKim, and the landscape architect Olmsted. In their report, the McMillan Commission plan of 1902, they recommended that the L'Enfant framework be readopted, filled out some of the details he had not specified, and designed an extensive park system. This has been the general guide of the vast 20th-century classicization of the city. Only in the 1950s was this trend altered, with the planning and construction of a number of great governmental complexes in the nearby countryside (e.g., the Prince George Town satellite city, designed by Edward D. Stone) and with the projected dispersion of further in-city government buildings throughout the central business district rather than only in its classically framed core.

Secular buildings: The White House (originally called the President's House), begun 1792 from designs by the Irish-born architect James Hoban; the neoclassic main façade resembles Leinster House in Dublin. Burned by the British in 1814; rebuilt 1815–17 on Hoban's plans as modified by Benjamin Latrobe (q.v.). South portico added in 1824 and north portico in 1829. Interior structure rebuilt 1902 and 1948–52. Oval-shaped Blue Room with early-19th-century furnishings. Red Room decorated with Empire-period pieces. Green Room with furnishings of about 1800. – The Capitol (I, PL. 79), begun 1793 from designs of William Thornton. North wing completed 1800; south wing by Latrobe, based on original Thornton designs, completed 1811. Interior burned by the British in 1814; redesigned and rebuilt by Latrobe 1815–17. Central part completed by Charles Bulfinch (q.v.) in 1829. Side wings and iron dome added 1851–65 by Thomas U. Walter. Terraces and grounds 1875–92 from designs of Olmsted. East front extended and rebuilt 1960–61. – Octagon House, by Thornton, 1798–1800. – Decatur House, by Latrobe, 1818–19. – Old City Hall (now the Courthouse), by George Hadfield, 1820, in the English Roman manner; extended 1849 and 1935. – Blair House (the President's guesthouse), 1824; restored 1963–64. – Treasury Building (I, PL. 79), the first major public building in the city to use the temple form and portico as primary architectural elements, by Robert Mills, 1836–42; west wing added by Isaiah Rogers 1826–69. – Old Patent Office (now part of the Smithsonian Institution), by William P. Elliot, Ithiel Town, and Mills, built 1836–40, 1849–67, a handsome Greek Doric building; later changes. – Smithsonian Institution, by James Renwick, completed 1852, in Norman style. – Library of Congress Building, by Smithmeyer & Pelz, 1886–97, inspired by French Beaux-Arts classicism. – Pan-American Union Building, designed by Paul Cret and Albert Kelsey, 1907–10, a mixture of classical architecture and Mayan and Aztec influences. – Folger Shakespeare Library, by Cret, 1929–32, in neoclassic style. – Supreme Court Building, by Cass Gilbert, 1935, in the form of a Corinthian temple. – National Archives Building, by John Russell Pope, completed 1939, in neoclassic style. – National Gallery of Art, by Pope, with Otto Eggers and Daniel Higgins, completed in 1941, also neoclassic.

Churches: Christ Church, by Latrobe, 1806–07, early Neo-Gothic; later changes. – St. John's Church, by Latrobe, 1815–16, in a Roman classical design; tower and portico by Latrobe, 1820; interior remodeled 1883 by Renwick. – New York Ave. Presbyterian Church, 1820 and later, in the style of James Gibbs. – Cathedral of SS. Peter and Paul (also called National, or Washington, Cathedral), begun 1908 (work still in progress) from designs by George Bodley and Henry Vaughan, Neo-Gothic.

Monuments: Washington Monument, an obelisk designed by Mills in 1833, erected 1848–84. – Lincoln Memorial (I, PL. 88), by Henry Bacon, 1914–22, a Greek Doric temple; the seated figure of Lincoln is by Daniel Chester French. – Jefferson Memorial, by Pope, Eggers, and Higgins, 1939–41, a colonnaded rotunda enclosing a standing figure of Jefferson by Rudolph Evans. See also MONUMENTS.

Georgetown: Notable examples of buildings in the classical revival manner include "The Lindens" (transported from Danvers, Mass.), 1754, with three sets of French scenic wallpaper; the Foxall, Thomas Beall, Decatur, and Laird-Dunlop houses, all built in the 1790s; Tudor Place, by William Thornton, 1794–1815, with extensive formal gardens; St. John's Church, also by Thornton, 1803–06, enlarged 1843; and the Dumbarton, Walker, Harriman (also called Riggs-Riley), and John Stoddart Haw houses, all erected in the early 19th century.

Museums: The Smithsonian Institution, founded in 1846 by James Smithson, has numerous branches and administers the following five museums: (1) National Gallery of Art, which includes the Mellon, Kress, and Widener collections, with European painting and sculpture from the 13th to the 19th century, American painting, French impressionist and postimpressionist painting, European minor arts, Chinese porcelain, and prints and drawings from the 15th century to the present. – (2) Freer Gallery of Art, with an outstanding collection of Oriental bronzes, ceramics, jade, and paintings and a group of works by Whistler, including his Peacock Room (PL. 421). – (3) National Collection of Fine Arts, with American and European painting, sculpture, and minor arts. – (4) National Portrait Gallery. – (5) Bureau of American Ethnology, with American Indian material. – Corcoran Gallery of Art, with American painting, sculpture, prints, and drawings, French 19th-century painting, Oriental rugs, and European minor arts. – Howard University Gallery of Art, with American painting, sculpture, and graphic arts, African Negro sculpture, and European graphic arts. – Textile Museum, with rugs and textiles from Spain, Portugal, Oceania, Africa, and the Americas. – Phillips Collection, with American and European art since 1870. – Dumbarton Oaks Research Library and Collection, with Byzantine mosaics, textiles, ivories, sculpture, and metalwork.

BIBLIOG. C. Moore, The Improvement of the Park System of the District of Columbia, Washington, 1902; Documentary History of the Construction and Development of the United States Capitol Building and Grounds, Washington, 1904; F. Kimball, The Origin of the Plan of Washington, D.C., Arch Rev., N.S., VII, 1918, pp. 41–45; F. Kimball and W. Bennett, The Competition for the Federal Buildings, 1792–93, J. Am. Inst. of Arch., VII, 1919, pp. 8–12, 98–102, 202–11, 355–61, 521–27, VII, 1920, pp. 117–24; E. S. Kite, L'Enfant and Washington: 1791–92, Baltimore, 1929; H. M. P. Gallagher, Robert Mills, New York, 1935; C. Moore, Personalities in Washington Architecture, RCHS, XXXVII–XXXVIII, 1937, pp. 1–15; H. P. Caemmerer, A Manual on the Origin and Development

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

of Washington, Washington, 1939; I. T. Frary, They Built the Capitol, Richmond, 1940; FWP, Washington, D.C.: A Guide to the Nation's Capital, New York, 1942; L. Justement, New Cities for Old, New York, 1946; S. K. Padover, Thomas Jefferson and the National Capital, Washington, 1946; H. P. Caemmerer, Charles Moore and the Plan of Washington, RCHS, XLVI–XLVII, 1947, pp. 237–58; F. V. Murphy, Architects and Architecture in the District of Columbia, RCHS, XLVI–XLVII, 1947, pp. 213–28; H. P. Caemmerer, The Life of Pierre-Charles L'Enfant, Washington, 1950; E. Peets, The Genealogy of the Plan of Washington, JSAH, X, 2, 1951, pp. 3–4; L. Hall, The Design of the Old Patent Office, JSAH, XV, 1, 1956, pp. 27–30; AIA: Washington Metropolitan Chapter, Washington Architecture 1791–1957, New York, 1957; H. D. Eberlein and C. V. Hubbard, Historic Houses of George-Town and Washington City, Richmond, 1958; L. M. Leisenring, Lament for Lafayette Square, J. Am. Inst. of Arch., XXXV, 1961, pp. 23–32; T. H. Creighton, Architecture of Monuments: The Franklin Delano Roosevelt Memorial Competition, New York, 1962; C. W. M. Green, Washington, 2 vols., Princeton, 1962–63 (bibliog.); D. Canty et al., Washington, D.C., Arch. Forum, CXVIII, 1963, pp. 43–106. Washington in Transition, J. Am. Inst. of Arch., XXXIX, 1963, pp. 23–118; C. Foley, River, Port and Capital, Washington, 1965; H. N. Jacobsen, ed., A Guide to the Architecture of Washington, D.C., New York, 1965; A. R. Smith and E. Sevareid, Washington: Magnificent Capital, Garden City, N.Y., 1965; Washington *vade mecum*, Progressive Arch., XLVI, 1965, pp. 201–16.

New England States (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut). Beginning with the settlement of Plymouth, Mass., in 1620 and Salem, Mass., in 1626, Englishmen seeking religious haven established their close-knit church-centered towns in New England's rocky landscape. There they measured out the lands between the ocean and the French and Dutch posts. A typical plan was that of Wethersfield, Conn., as it existed in 1640–41, with several "ladders" of divided land carrying over manorial field-division practices (though farming in common was speedily abandoned for individual control). A compact village of relatively small home lots centered around the meetinghouse and the common grazing land. By the mid-18th century most of New England was divided in this manner, giving its life the basically town-centered cast it still retains.

Most of the settlements on the North American continent included, or developed from, forts of the usual European design. In New England it was necessary to adapt the land system to some sort of fortification for protection against the Indians. Windsor, Conn., was a typical example of the manner in which the home lots in the center of the town were fortified in the mid-17th century: they were surrounded by a ditch, which was enclosed by a palisade of wooden posts.

Though these concepts of land division were basically developments of late medieval European practices, the colonists were also aware of the rebirth of classical town-planning principles. These were reflected in the beautifully regular plan of New Haven in 1641, in which one great square was divided by four intersecting roads into nine equal squares. The meetinghouse and burying ground were in the central square, which was held in common. As the cities grew, more attention was given to the planning of individual architectural groupings as well; when Stoughton Hall (1699) and Massachusetts Hall (1718–20) were erected adjoining the original Harvard College building of 1677 in Cambridge, what was undoubtedly the finest urban architectural group of the first century of New England's colonial existence was created.

The buildings of this period reflected the Anglo-Dutch background of the settlers; from England came the wooden architecture of Essex and Middlesex counties and the brickwork of Lincolnshire, and the use of vertical boarding in Providence, R.I., was probably derived from the Low Countries. Master builders, using builders' guides imported from Europe, decorated the houses with simple Renaissance details. Peter Harrison of Newport, R.I., was the only architect to create academic designs that compare favorably with, and, in fact, were inspired by, the work of the great English designers, and professional architectural practice has been continuous in New England, as in the country as a whole, only since the time of Bulfinch. His work, much influenced by the designs of the Adam brothers, included notable urban units, such as Franklin Crescent in Boston, and city plans, such as his radial avenues for the filled-in Mill Pond in Boston, 1808.

Horticultural correspondence was carried on throughout the colonial period, but as a branch of science rather than in terms of landscape design and architecture. However, as the three alternative projects prepared by Samuel McIntire for the garden of Derby Mansion (destroyed) in Salem, Mass., show, European trends of the 18th century were known in the New World.

After the Revolution many mill towns developed in New England. In addition to the mill buildings there were workers' houses and dormitories, and sometimes a lyceum and schoolhouse. In Lowell, Mass., Kirk Boott laid out a whole factory community in 1822; the handsome factory buildings were placed between the residential area and the river.

Though the trading wealth of Newport, superbly situated on Narragansett Bay, made it a city of sophisticated buildings before the Revolution ruined its trade, Boston has been the great city of the region since the mid-17th century. Its role as a provincial and national center for the dissemination of the international architectural style has varied, but not ceased, since the days of Bulfinch. The first American school of architecture was established by William R. Ware in 1865 at the Massachusetts Institute of Technology in Cambridge. Henry H. Richardson's (q.v.) "Romanesque" Trinity Church (I, PL. 84) and McKim, Mead & White's (q.v.) Italianate Public Library, both in Boston, announced two of the major modes of American architecture in the late 19th century. Louis Sullivan's (q.v.) beginning was in the Boston of Richardson's great period. Since 1930 New England has been an important center in the development of the American use of the international style.

BIBLIOG. G. F. Dow, The Arts and Crafts in New England, 1704–75, Topsfield, Mass., 1927; M. S. Briggs, The Homes of the Pilgrim Fathers in England and America, London, 1932; J. M. Howells, The Architectural Heritage of the Merrimack, New York, 1941; C. Bridenbaugh, Peter Harrison: First American Architect, Chapel Hill, N.C., 1949; W. Haller, Jr., The Puritan Frontier: Town Planning in New England Colonial Development, 1630–60, New York, 1951; R. S. Allen, Covered Bridges of the Northeast, Brattleboro, Vt., 1957; A. L. Cummings, Architecture in Early New England, Sturbridge, Mass., 1958; S. L. Faison, A Guide to the Art Museums of New England, New York, 1958; H. W. Congdon, Early American Homes for Today, Rutland, Vt., 1963; E. W. Sinnott, Meetinghouse and Church in Early New England, New York, 1963.

Maine. The first permanent settlement was established in 1622 on Monhegan island. Maine was part of Massachusetts from 1652 to 1820, when it was admitted to the Union as a separate state. The Canadian boundary was settled by a treaty with Great Britain in 1842. Augusta became the capital of the state in 1831.

Augusta. Fort Western, a colonial wilderness fort with a stockade and a blockhouse. – State House, designed by Bulfinch, 1829–31, in Roman classical style; heavily altered in 1911.

Bangor. Samuel Farrer House, designed by Richard Upjohn, 1836, in Greek revival style. – St. John's Church, also by Upjohn, Neo-Gothic.

Brunswick. Bowdoin College Chapel, by Upjohn, 1845–55, in Romanesque style. – First Parish Congregational Church, also by Upjohn, 1846, Neo-Gothic. – Bowdoin College Museum of Fine Arts, located in the Walker Art Building, an exquisitely Italianate building of 1894 by McKim, Mead & White, with American portraits, classical and antique art, European drawings, and Chinese and Korean ceramics.

Columbia Falls. Ruggles House, designed by Aaron Sherman of Duxbury, Mass., 1816–18, with a notable flying divided staircase.

Gardiner. Christ Church, 1819, Neo-Gothic. – "Oaklands," by Upjohn, 1835, a Neo-Gothic stone house.

Kittery Point. Lady Pepperell House, 1760, with a highly organized Palladian façade; characteristic period furnishings.

Ogunquit. Museum of Art of Ogunquit, with 20th-century American sculpture, painting, graphic arts, and ceramics.

Portland. Tate House, 1755, with beautiful interior paneling. – Wadsworth-Longfellow House, 1785. – Sweat Mansion, by Alexander Parris, 1800, an exceptionally fine example of the Federal period. – Portland Observatory, a 233-foot tower erected in 1807. – St. Luke's Cathedral, by Henry Vaughan, 1855, in English Gothic style. – Victoria Mansion, by Henry Austin, 1859, a classic example of the Victorian style. – City Hall, by Carrère & Hastings and Stevens & Stevens, 1912, in Federal style. – Portland Museum of Art, with American painting, sculpture, and graphic arts.

Rockland. William A. Farnsworth Library and Art Museum, with contemporary Maine painting, prints, and drawings. – Next to it is the Farnsworth Homestead, a Greek revival building with Victorian furnishings.

Rockport. Spite House, erected 1806 in Phippsburg and moved to its present location in 1925.

Sedgwick. Baptist Church, by Benjamin Deane, 1837, sophisticated Greek revival.

South Berwick. Sarah Orne Jewett Memorial, 1774. – Hamilton House, 1785–88, a Georgian style house with terraced gardens.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

South Windham. Parson Smith Homestead, 1764, erected on the site of Old Province Fort.

Waterville. Colby College: Memorial Hall, 1821; Champlin Hall, by Thomas U. Walter, 1836. – Colby College Art Museum, with American painting, especially of the 19th century, and folk art.

Wiscasset. Nickels-Sortwell House, 1807–08, in the Federal style. – Lincoln jail, 1809–11, and adjoining county courthouse, 1824.

York. Old Gaol Museum, 1653, the oldest existing English public building in America. – Old School House, 1745. – Wilcox House, before 1766. – Jefferd's Tavern, a pre-Revolutionary building.

BIBLIOG. FWP, Maine: A Guide 'Down East,' Boston, 1937; Maine Writers Research Club, Historic Churches and Homes of Maine, Portland, 1937; FWP, Portland City Guide, Portland, 1940; G. A. Mellon, ed., Maine and Its Role in American Art: 1740–1963, New York, 1963; W. B. Miller, ed., Maine and Its Artists: 1710–1963, Waterville, Maine, 1963 (cat.).

New Hampshire. First settled by the English near Portsmouth in 1623, New Hampshire was governed by Massachusetts until 1741. One of the 13 original colonies, it was admitted to the Union in 1788. Concord became the capital in 1808.

Concord. State House, 1819; enlarged in Italian style 1863–66; enlarged again 1909–10. – New Hampshire Historical Society headquarters, containing furniture made in New England from 1680 to 1730.

Cornish. Saint-Gaudens Memorial: main building, erected in 1800 and originally a tavern, was the home of the sculptor Augustus Saint-Gaudens; the Little Studio was his workshop; in the Large Studio are casts, reliefs, and busts.

Exeter. The garrison house, ca. 1658, with 18th-century additions. – Cincinnati Memorial Hall (formerly Ladd-Gilman House), 1721. – Liberty Emery House, ca. 1775. – Meetinghouse, by Ebenezer Clifford, 1798. – Simeon Folsom House, 1816, with addition of 1830.

Hanover. Captain Aaron Storrs House, 1771 or 1774. – Choate House (formerly Sylvanus Ripley House), 1786. – Woodward-Lord House, 1802. – Dartmouth College campus, with a group of buildings by Ammi B. Young: Thornton and Wentworth halls, both 1827–28; Reed Hall, 1839; Shattuck Observatory, 1854. – Carpenter Art Galleries in Carpenter Hall on the campus, with American and French painting, sculpture, graphic arts, and Chinese art. – Baker Library on the campus, containing a great mural series by José Clemente Orozco (q.v.; I, PL. 145).

Lyme. Congregational Church, 1812; second floor added 1847. Horse sheds next to the church, also built 1812. – In the vicinity of Lyme are the Enos Snow Farm, ca. 1790, and the Wittenborn-Wagner House, with wall paintings of ca. 1825.

Manchester. First Methodist Episcopal Church, 1829; moved from Derryville in 1888–89 and raised above a new first story. – Currier Gallery of Art, with European and American painting and American minor arts.

New Ipswich. Barrett House, 1800, a three-story country mansion.

Peterborough. Unitarian Church, by Bulfinch, 1827. – Goyette Museum of Americana.

Portsmouth. Jackson House, ca. 1664. – Warner House (also called the McPhedris-Warner House; I, PL. 77), ca. 1716. – Portsmouth Historical Society headquarters (also known as the John Paul Jones House), 1758. – Wentworth-Gardner House, 1760, one of the most perfect examples of Georgian architecture in America. – Moffatt-Ladd House, 1763, with a great "hall" in the English sense, the finest one in New England, and beautiful French scenic wallpaper; the terraced garden dates from the time the house was built; the counting house was added in 1830. – Governor John Langdon Mansion Memorial, 1784, one of the finest Georgian houses in America. – Thomas Bailey Aldrich Memorial, 1790. – Governor Levi Woodbury Mansion, 1809.

Walpole. Buffum House, ca. 1785; Greek revival additions in 1820s. – General Amasa Allen House, 1792. – Knapp House, 1812. – Walpole Academy, 1831. – Howland and Howland-Schofield houses, both erected in the 1840s, with classical revival details.

BIBLIOG. P. D. Orcutt, The Moffatt-Ladd House, Portsmouth, 1935; J. M. Howells, The Architectural Heritage of the Piscataqua, New York, 1937; FWP, New Hampshire: A Guide to the Granite State, Boston, 1938; E. A. Speare, Colonial Meeting-houses of New Hampshire, Littleton, N.H., 1938; Architecture near the Piscataqua, Portsmouth, 1964.

Vermont. It was not until 1724 that a permanent settlement was established, in what is now Brattleboro. Vermont was claimed by various states, and was admitted to the Union as a separate state in 1791. Montpelier has been the capital since 1805.

Arlington. St. James's Church, 1829, early Neo-Gothic.

Bennington. Congregational Meetinghouse, by Lavius Fillmore, 1805–06. – Bennington Museum, with Bennington pottery, early American glass, American painting, and French sculpture.

Burlington. "Grassmount" (now part of the University of Vermont), 1804, considered the best example of Georgian architecture in the state. – Unitarian Church, 1816, in the Boston manner, Charles Bulfinch and Peter Banner, consultants.

Middlebury. Congregational Church, by Lavius Fillmore, 1806–09, with complex cross-vaulted ceiling. – Community House (also known as Battell House), 1815. – Painter Hall (part of Middlebury College), 1816.

Montpelier. State House, by Ammi B. Young, 1833–37; new interior, cupola, and wings by J. Richards 1857–58; west wing extended 1885.

Rockingham. Rockingham Meetinghouse, 1787–1800, with a noteworthy pulpit.

Shelburne. Shelburne Museum, a collection of 18th- and 19th-century New England buildings, all moved to the site for preservation, filled with displays of Americana. Noteworthy buildings include the Prentis (ca. 1733), Dutton (ca. 1782), Vermont (ca. 1790), Stencil (ca. 1800), and Dorset (ca. 1840) houses; the Vergennes School (ca. 1830); the Shaker Homestead Shed (ca. 1834); the Stone Cottage (1840); the Charlotte Meetinghouse (ca. 1840); a covered bridge (ca. 1845); and barns, a general store, a blacksmith shop, and a jail. The Stagecoach Inn (ca. 1783) contains American sculptured folk art. The Webb Gallery has 18th- and 19th-century American primitive and academic paintings. Wildlife paintings are exhibited in the Beach Gallery. In the Lighthouse Gallery are marine paintings and prints. The Electra Havemeyer Webb Memorial Building contains the collection of furniture and furnishings and of European paintings of the late Mr. and Mrs. J. Watson Webb, the founders of the Shelburne Museum.

Weston. Farrar-Mansur House, originally a tavern, 1797, with an interesting L-shaped kitchen.

Windsor. Old Constitution House, before 1777. – Congregational Meetinghouse (Old South Church), by Asher Benjamin, 1798.

Woodstock. Colonial village with an unusual oval village green. – Dana House, 1807. – Old White Meetinghouse, 1808.

BIBLIOG. V. Ravi-Booth, Concerning the Old First Church of Bennington, New York, 1933; M. G. Nye, Vermont's State House, Montpelier, 1936; FWP, Vermont: A Guide to the Green Mountain State, Boston, 1937; H. W. Congdon, Old Vermont Houses, New York, 1940 (2d ed., 1946).

Massachusetts. Plymouth, founded in 1620, was the first permanent English settlement in New England. In 1629 a charter was granted to the Massachusetts Bay Colony, which remained in effect until 1684. Boston, settled in 1630, was made the capital of the Colony in 1632. A new charter was granted to the Colony in 1691. Massachusetts was the center of resistance to the British trade restrictions and other policies, leading to the outbreak of the Revolution. Massachusetts was one of the 13 original colonies, and was admitted to the Union in 1788.

Amesbury. Macy-Colby House, ca. 1650, typical pioneer home. – Rocky Hill Meetinghouse, 1785.

Amherst. Nehemiah Strong House, 1774. – Amherst College, with a fine group of buildings: two dormitories of 1821 and 1822; chapel of 1827; and the Octagon (formerly the observatory), by Henry A. Sykes, ca. 1850. – Amherst College, Mead Art Building, with European and American furniture and textiles, English and American portraits of the 18th and 19th centuries, and the banqueting hall of 1611 from Rotherwas House in England, an outstanding example of Elizabethan paneling.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Andover. Bradstreet House, 1667. – Pearson Hall at Phillips Academy, by Bulfinch, 1817. – Deacon Amos Blanchard House, 1819. – Phillips Academy, Addison Gallery of American Art, with American painting and minor arts from the 18th century to the present.

Attleboro. Two high schools by Walter Gropius (q.v.), designed in association with The Architects Collaborative, one of 1948 (I, PL. 93) and the other of 1955.

Barnstable. Coach House, 1640. – Sturgis Library, 1645. – Congregational Church, 1717. – Crocker Tavern, ca. 1754.

Beverly. John Balch House, ca. 1636. – John Hale House, 1694. – John Cabot House, 1781.

Boston. Settled by the Puritans in 1630, Boston was named after the city in England from which most of the Puritan leaders had come. Situated on Massachusetts Bay, it has always been an important port. Landmarks exist from all periods of the city's history. Since 1960 Boston has been undergoing an extensive redevelopment program.

Secular buildings: Paul Revere House, ca. 1676. – Moses Pierce-Hichborn House, ca. 1680. – Old State House, built 1713, rebuilt 1748; restored 1880–82. – Faneuil Hall, known as the "Cradle of Liberty," by John Smibert, 1742; burned in 1761 and rebuilt 1762–63; doubled in size on the same bay system by Bulfinch, 1805. – Shirley Place, in the Roxbury section, 1746, remodeled 1819, a superb baroque house. – Dillaway House, also in Roxbury, 1750. – State House (I, PL. 78), central part, the original section, of red brick, designed by Bulfinch 1787–88 and erected 1795–98, probably his greatest public building. Two white-marble wings and rear section added in 1831, 1859, 1889, and 1914. – Three Harrison Gray Otis houses designed by Bulfinch in 1796, 1800, and 1806. – Massachusetts General Hospital building (now known as the Bulfinch Pavilion), designed by Bulfinch in 1816–17 and executed by Alexander Parris in 1818–20. – Quincy Market, by Parris, 1825–26, Greek revival. – Tremont House (I, PL. 80, FIG. 254), by Isaiah Rogers, 1828–29. – U.S. Custom House, by Ammi B. Young, 1837–47, Ionic temple style. Tower added by Peabody & Stearns, 1913–15. – Boston Public Library, by McKim, Mead & White, 1888–95, a masterpiece in Italian Renaissance style. Famed series of mural paintings by Puvis de Chavannes, John Singer Sargent (qq.v.), and Edward A. Abbey. Addition, to be erected, designed by Philip Johnson in 1967.

Churches: Christ Church (Old North Church), by William Price, 1723. – Old South Meetinghouse, by Robert Twelves, 1729–30, modeled on 17th-century type. – King's Chapel, by Peter Harrison, built 1749–54; Ionic portico, by Thomas Clement, 1785–87. – Old West Church (now West End branch of Boston Public Library), by Asher Benjamin, 1806. – Park Street Church, by Peter Banner, 1809–10. – St. Paul's Church (now Cathedral), by Parris with carvings by Solomon Willard, 1819–20, important example of Greek revival style; pulpit by Richard Upjohn, ca. 1845. – Brattle Square Church (now First Baptist Church), designed by Henry Richardson (q.v.) in 1870, erected 1871–72. – Trinity Church (I, PL. 84), the great statement of the Romanesque revival, designed by Richardson in 1872, built 1873–77; porch added by Shepley, Rutan & Coolidge in the 1890s. – First Church of Christ, Scientist, 1904, in Italian Renaissance style.

Museums: Isabella Stewart Gardner Museum, with Italian Renaissance painting and sculpture, 16th- and 17th-century Dutch painting, classical and Far Eastern minor arts, and prints. – Museum of Fine Arts, with Egyptian art (especially Old Kingdom sculpture), Chinese, Japanese (X, PL. 219), and Indian painting and sculpture, Chinese export porcelain, Greek and Roman art, French impressionist and postimpressionist painting, American and European period rooms, American colonial silver, textiles, and graphic arts. – Institute of Contemporary Art, with modern painting and sculpture.

Brookline. Edward Devotion House, ca. 1750. – Old Heath House, 1791. – Harvard Church, by Edward Potter, 1873–75; interior restored after a fire in 1931.

Cambridge. Houses: Cooper-Frost-Austin House, 1657. – Lee-Nichols House, 1660. – Vassal-Craigie-Longfellow House, 1759. – Apthorp House, 1760. – Fayerweather-Merriam House, 1760. – Riedesel House, 1762. – John Hicks House, 1762. – "Elmwood," 1766. – Dexter Pratt House, 1811. – Stoughton House, by Henry Richardson, 1882–83, a fine example of his "shingle style."

Churches: Christ Church, by Peter Harrison, 1761, in the manner of Sir Christopher Wren. – First Parish Church (Unitarian Church), by Isaiah Rogers, 1833. – St. John's Chapel at Episcopal Theological Seminary, by William R. Ware, 1859.

Harvard University buildings: Massachusetts Hall, attributed to John Leverett, 1718–20. – Wadsworth House (now offices of Harvard Alumni Association), 1726. – Hollis Hall (XIII, PL. 260), 1736. – Holden Chapel, by John Smibert, 1744. – Harvard Hall, by Sir Francis Barnard, 1766; later additions. – University Hall, by Bulfinch, 1813–15. – Memorial Hall, by William R. Ware and Henry Van Brunt, 1870–78, Neo-Gothic. – Sever Hall, 1878–80, and Austin Hall, 1881–83, both by Henry Richardson. – Extensive building program in the Georgian style during the 1920s and 1930s, of which the best examples are Dunster, Lowell, and Eliot houses, by Coolidge, Shepley, Bulfinch & Abbott, 1930–31. – Graduate Center (VII, PL. 84), by Gropius and The Architects Collaborative, 1949–50. – Visual Arts Center, by Le Corbusier, 1961–63.

Massachusetts Institute of Technology buildings: Original main group, by Welles Bosworth, 1912–15, in classical style. – Baker House, the senior dormitory (I, PL. 2), by Alvar Aalto, 1947–49. – Kresge Auditorium and Chapel, by Eero Saarinen, 1953–56; the Auditorium was the first major shell construction in the United States. – Earth Sciences Center, by I. M. Pei, 1963.

Museums at Harvard University: Fogg Art Museum, with master prints and drawings, Romanesque sculpture, Italian primitives, French 19th-century painting, and Chinese sculpture, bronzes, and jades. – Busch-Reisinger Museum of Germanic Culture, with German late medieval sculpture, 18th-century sculpture and minor arts, and 20th-century painting, including the Bauhaus research collection. – Peabody Museum of Archaeology and Ethnology, with prehistoric, Oceanic, African, and pre-Columbian art.

Concord. Orchard House, two homes, one of 1650 and the other of 1730, remodeled and joined together. – Colonial Inn, 1716. – The Wayside, before 1717; remodeled 1845, 1860. – Wright Tavern, 1747. – The Old Manse, 1769. – Emerson House, 1828.

Danvers. Judge Samuel Holten House, 1670. – Rebecca Nurse House, 1678. – Page House, 1754. – Glen Magna, a colonial house with gardens. On the property is the Derby Summer House (moved from nearby Peabody), by Samuel McIntire, 1793, the finest extant American summer, or garden, house.

Danversport. Samuel Fowler House, 1810, a fine brick house, with several original wallpapers.

Dedham. Fairbanks House, 1636; later additions. See I, col. 248.

Deerfield. The mile-long main street of Old Deerfield is lined with historic old houses, almost 30 of them dating from the 18th century, 13 from the early 19th century, and the rest from the late 19th century. Many are open to the public and contain outstanding collections of early American furniture, silver and pewter, paintings, glassware, ceramics, and textiles. Architecturally the most significant structure is Memorial Hall (the original Deerfield Academy building), designed by Asher Benjamin, 1799; exhibited here are colonial furniture, paintings, ceramics, and fabrics. Other fine buildings include Frary House, late 17th century, with a central section added about 1717 and a front section built in the mid-18th century; Ashley House, 1732; Sheldon-Hawks House, ca. 1734; Dwight-Barnard House, 1754; Hall Tavern, 1765; Asa Stebbins House, 1799, with an ell dating from the 1750s; Wilson Printing House, 1816; and Wright House, 1824.

Gloucester. White-Ellery House, ca. 1640. – Babson House, 1740. – Hardy-Parsons House, 1750. – Sargent-Murray-Gilman-Hough House, 1768; remodeled 1916. – Captain Elias Davis House, 1804. – Universalist Church, 1806. – "Beauport," with over 20 rooms of different types and periods. – Hammond Museum, in the style of a medieval castle, with architectural fragments from European churches and castles and Gothic and Renaissance sculpture, furniture, and textiles.

Hancock. Hancock Shaker Village, with 17 Shaker buildings of the late 18th and the early 19th century. Of particular interest is the great barn of 1826, with a round stone ground story, a wooden superstructure, and a hexagonal cupola above that.

Hingham. The Old Ordinary, 1650. – "Old Ship" Meetinghouse, 1681; additions of 1731, 1755; perhaps the most important public building in America remaining from the 17th century. See also I, col. 249. – Samuel Lincoln House, ca. 1741; later additions.

Ipswich. John Whipple House and garden, ca. 1640; additions of 1670, 1700. – Preston-Foster House, ca. 1640. – Hart House (now an inn), 1640. – Emerson-Howard House, ca. 1648; addition of 1709. – Thomas Franklin Waters Memorial (formerly John Heard House), 1795. – Lakeman-Johnson House, second quarter of 19th century, a typical sea captain's home.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Lancaster. Old Lancaster Church, by Bulfinch, 1816, his finest remaining church and probably his most sophisticated design.

Lexington. Buckman Tavern, 1690. – Munroe Tavern, 1695. – Hancock-Clarke House, 1698; front section added 1734. – Marrett Munroe House, 1729; restored 1915. – Dr. Joseph Fiske House, 1732. – Jonathan Harrington House, before 1775; restored 1910. – First Normal School, 1822.

Lincoln. Gropius (VII, FIG. 179), Breuer, and Ford houses, by Walter Gropius and Marcel Breuer, 1937–39. – De Cordova and Dana Museum and Park, with contemporary New England art.

Malden. Malden Public Library, by Henry Richardson, 1883–85, the last of his small libraries, in Romanesque style; contains European and American painting, sculpture, prints, and drawings of the 17th–19th century.

Marblehead. St. Michael's Church, 1714. – Old Town Hall, 1727. – King Hooper Mansion, 1728, with additions of 1745; fine paneled rooms and a formal garden. – Powder House, 1755. – Jeremiah Lee Mansion, 1768, one of the best examples of Georgian architecture in the country, three stories high with a glassed-in cupola; with rare furnishings and English wallpaper.

Medford. Isaac Royall House, 1631, 1677; completely rebuilt in 1732 in handsome wooden baroque style based on contemporary architecture of Antigua; later changes. – Peter Tufts House (formerly Cradock House), 1678, a gambrel-roofed brick residence. – Grace Church, by Richardson, 1867–68, Neo-Gothic.

Nantucket. The old section has 400 houses antedating the fire of 1846, most of them in the Federal and Greek revival styles. The Jethro Coffin House, built in 1686, is the oldest house on the island. Noteworthy are the three identical brick houses erected in 1838, known as the East Brick, Middle Brick, and West Brick houses, in Federal style. The Jared Coffin House (formerly Ocean House) was built in 1845 in Greek revival style; later altered, it has recently been restored.

Newbury. Tristram Coffin House, ca. 1651; additions of late 17th and the 18th century. – Swett-Ilsley House, ca. 1670; later additions. – Short House, 1730s, an early brick-ended wooden house.

Newburyport. Old South Church, 1760. – Church of the First Religious Society in Newburyport, attributed to Timothy Palmer, 1800–10. – Cushing House, 1808. – Custom House, by Robert Mills, 1835, with superb Greek-massed stonework.

Northampton. Smith College Museum of Art, with American and European painting (particularly 19th- and 20th-century French masters), sculpture, prints, and drawings from the 18th century to the present.

North Easton. Ames Memorial buildings (town hall, library, railroad station) and Ames Gate Lodge (I, PL. 83), by Richardson, built in the 1880s.

Pittsfield. Berkshire Museum, with Hudson River School and European painting, Far Eastern art, and ancient and modern sculpture.

Plymouth. Plimouth Plantation, a re-creation of the original Pilgrim village. – Replicas of the first Pilgrim house, the First Fort and Meetinghouse (1622–23), and the 1627 house. – Sparrow House, 1640, the oldest house in Plymouth. – John Howland House, 1666. – Harlow House, 1677. – Spooner House, ca. 1750. – Winslow House (headquarters of the General Society of Mayflower Descendants), 1754. – Antiquarian House, 1809, with Federal furnishings, dolls, and costumes. – Pilgrim Hall, 1824, in Greek revival style; contains Pilgrim relics, furniture, silver and pewter, and 17th-century American paintings.

Quincy. John Quincy Adams Birthplace, 1663. – John Adams Birthplace, 1675. – Adams Mansion, now the Adams National Historic Site, erected 1731, enlarged several times in the 19th century. Home of the Adams family from 1788 to 1927; original furnishings. – Colonel Josiah Quincy House, 1770. – Stone Temple, by Alexander Parris, 1828, a fine church in Regency style. – Crane Memorial Library (I, PL. 85), by Henry Richardson, 1880–83.

Salem. Pioneers' Village, a reproduction of the village as it appeared about 1630. – Witch House, 1642. – Pickering House, 1651. – Retire Beckett House, 1655. – House of Seven Gables, 1668. – Hathaway House, 1682. – John Ward House, 1684. – Ropes Mansion, 1719; later additions. – Crowninshield-Bentley House, 1727. – Derby House, 1761–62. – Derby Wharf, begun ca. 1762; rebuilt 1938–39. – Many fine buildings by Samuel McIntire, among which are Peirce-Nichols House, 1782, Pingree House, 1804, and Hamilton Hall, 1806. – Market House, 1816. – Old Town Hall, 1816. – Custom House, 1819. – St. Peter's Church, 1833. – First (Unitarian) Church, originally called North Church, 1835. – City Hall, 1837. – Second (Unitarian) Church, by Minard Lafever, 1846, Neo-Gothic. – Peabody Museum, housed in the handsome East India Marine Hall of 1824, with Polynesian, Japanese, and American Indian ethnological collections, maritime history exhibits, and ship models, figureheads, and paintings. – Essex Institute, with American portraits of the 18th and the early 19th century, furniture, and minor arts.

Springfield. U.S. Armory, 1794, the first arsenal in the United States. – Alexander House (Linden Hall), built from designs of Asher Benjamin, 1811. – First Church of Christ, by Isaac Damon, 1819. – A group of buildings by Henry Richardson: Unity Church, 1866–68, Neo-Gothic; Western Railway offices and Agawam National Bank, late 1860s, in Renaissance style; Hampden County Courthouse and North Congregational Church, 1871–73. – Municipal Group, by Pell & Corbett, 1931, two structures in temple form between which is an Italianate clock tower topped by a spire. – Museum of Fine Arts, with Dutch 17th-century painting, American, French, and Italian painting of the 17th–19th century, Far Eastern art, and prints. – George Walter Vincent Smith Art Museum, with paintings, minor arts, and Oriental art.

Sturbridge. Old Sturbridge Village, a re-creation of a representative New England community of the period 1790 to 1840, has over 50 structures, many moved from other towns in New England. There are two meetinghouses: the Friends' (Quaker), 1796, and the Village, 1832, a fine Greek revival building. Houses include the Mashapaug, late 17th century with additions of the 18th century; Fenno, 1704; Stephen Fitch, ca. 1735; Solomon Richardson, ca. 1748; Oliver Wight, 1787, with wall paintings by Rufus Porter of ca. 1825; General Salem Towne, 1796; and Freeman, ca. 1801. The Thomson Bank, ca. 1835, and Levi Lincoln House, 1836, are in the Greek revival style. Other structures are a saw mill, grist mill, barns, general store, covered bridges, printing office, and tin, gun, blacksmith, and boot shops. The crafts of weaving, candlemaking, woodworking, ceramics, and metalworking are demonstrated.

Topsfield. Parson Capen House (I, PL. 74), 1683.

Waltham. Lyman House ("The Vale"), built from plans by Samuel McIntire, 1793; altered and enlarged 1884, 1917. This is the only extant country house designed by McIntire; the great ballroom and bow parlor are his own work. On the landscaped grounds are a stable by McIntire and two greenhouses, one dating from 1800 and the other from 1804. – Gore Place, 1804; restored. An enormous red-brick mansion, it is a magnificent example of the Federal period; it contains period American and English furniture.

Wellesley. Town Hall and Library, by Shaw & Hunnewell, completed 1881, in Flemish style. – Wellesley College, Jewett Arts Center, designed by Paul Rudolph, 1956–58, with sculpture, painting, and drawings of all periods.

Williamstown. Sterling and Francine Clark Art Institute, with American and European painting of the 15th–19th century (especially French Academic and impressionist works), 18th- and 19th-century furniture and sculpture, European and American silver, and prints and drawings. – Williams College, Lawrence Art Museum, housed in an octagonal building of 1846 in Greek revival style with an Ionic rotunda, later enlarged; contains medieval and Renaissance art, Spanish painting, Italian, Spanish, and early American furniture, English and American portraits of the 18th–19th century, ceramics, and glassware.

Worcester. Several houses by Elias Carter (1781–1864), who may have introduced the Greek revival style to the region. – Union Station, by Ware & Van Brunt, 1875–77, with a high machicolated clock tower. – Worcester Art Museum, with ancient sculpture and ceramics, Romanesque sculpture and a Benedictine chapter house, Near and Far Eastern art, and European and American painting. – John Woodman Higgins Armory, housed in the Worcester Pressed Steel Company building, by Joseph Leland, 1930, a fine example of open steel and glass construction; contains armor and metalwork of all periods, stained glass, paintings, and tapestries.

BIBLIOG. The Ames Memorial Buildings, Boston, 1886; A. Hale, Old Newburyport Houses, Boston, 1912; A. B. Le Boutillier, An Architectural Monograph on Early Wooden Architecture in Andover, Mass. (White Pine

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Ser., III, 2), St. Paul, 1917; W. T. Aldrich, An Architectural Monograph on Marblehead (White Pine Ser., IV, 1), St. Paul, 1918; F. Cousins and P. M. Riley, The Colonial Architecture of Salem, Boston, 1919; H. M. Forbes, Elias Carter: Architect of Worcester (Mass.), OTNE, XI, 1920, pp. 58–71; W. W. Cordingley, Shirley Place, Roxbury, Mass., and Its Builder Governor William Shirley, OTNE, XII, 1921, pp. 51–63; A. Chamberlain, Beacon Hill, Boston, New York, 1925; A. E. Poor, Colonial Architecture of Cape Cod, Nantucket and Martha's Vineyard, New York, 1932; FWP, Massachusetts: A Guide to Its Places and People, Boston, 1937; F. C. Brown, Danvers (Old "Salem Village"), Mass., Pencil Points, XXIV, 1938, pp. 719–34, 783–98; J. E. Frost, Harvard and Cambridge, New York, 1940; S. F. Kimball, Mr. Samuel McIntire, Carver: The Architect of Salem, Portland, 1940; FWP, Springfield, Mass., Springfield, 1941; J. P. Coolidge, Mill and Mansion: A Study of Architecture and Society in Lowell, Mass., 1820–65, New York, 1942; W. H. Kilham, Boston after Bulfinch: An Account of Its Architecture, 1800–1900, Cambridge, Mass., 1946; T. Scudder, Concord: American Town, Boston, 1947; G. T. D. Stark, The Old Ship Meeting House of Hingham, Mass., Boston, 1951; S. Chamberlain and H. N. Flynt, Frontier of Freedom, New York, 1952 (2d ed., 1957); J. Tomlinson, Ten Famous Houses of Springfield, Springfield, 1952; H.-R. Hitchcock, Boston Architecture 1637–1954, New York, 1954; P. Metcalf, Boston before Bulfinch: Harrison's King's Chapel, JSAH, XIII, 1, 1954, pp. 11–14; Old Sturbridge Village: A Guidebook, Sturbridge, 1957; K. Duprey, Old Houses on Nantucket, New York, 1959; G. A. Fowkes, A Mirror of Nantucket: An Architectural History of the Island, 1686–1850, Nantucket, 1959; W. M. Whitehill, Boston: A Topographical History, Cambridge, Mass., 1959; M. D. Ross, The Book of Boston, 2 vols., New York, 1960–64; J. P. Coolidge, Hingham Builds a Meetinghouse, New England Q., XXXIV, 1961, pp. 435–61; S. B. Warner, Streetcar Suburbs, Cambridge, Mass., 1962; R. W. Stanley, ed., Mr. Bulfinch's Boston, Boston, 1963; H. and J. Kirker, Bulfinch's Boston, New York, 1964; W. M. Whitehill, Boston: Portrait of a City, Barre, Mass., 1964; S. Chamberlain and H. N. Flynt, Historic Deerfield: Houses and Interiors, New York, 1965; J. E. Goody, New Architecture in Boston, Cambridge, Mass., 1965; Survey of Architectural History in Cambridge, I, Cambridge, Mass., 1965.

Rhode Island. The state was founded by religious exiles from Massachusetts; their first settlement was at Providence in 1636. A charter was granted by Charles II in 1663, when the province was known as Rhode Island and Providence Plantations. Rhode Island was admitted to the Union in 1790. Providence is the capital.

Bristol. Barrack, Bosworth, and Reynolds houses, all pre-Revolutionary. – Bristol County Courthouse, 1817, in Federal style; renovated in 1930s. – William G. Low House (I, PL. 85), by McKim, Mead & White, 1887, in "shingle style."

Coventry. Nathanael Greene Homestead, 1770.

East Greenwich. Kent County Courthouse, 1750; interior renovated. – James Mitchell Varnum House and Museum, 1773. – Friends' Meetinghouse, 1804. – Armory of the Independent Company of Kentish Guards, ca. 1842.

Johnston. Clemence-Irons House, ca. 1680, a stone-end, one-story house with loft; restored.

Kingston. Washington County Courthouse (now a library), 1775. – Helme House, 1802.

Lincoln. Eleazar Arnold House, 1687, a stone-end house with an unusual pilaster-top stone chimney; restored. – Friends' Meetinghouse, 1703. – "Hearthstone" (Smith Mansion), early 19th century.

Middletown. "Whitehall," a 17th-century farmhouse that Bishop George Berkeley purchased in 1729 and enlarged; restored. – Green End Fort, 1777.

Newport. Newport was a prosperous city in the colonial era, and over 350 pre-Revolutionary buildings still exist. After the Revolution commerce declined, but in the late 1830s the city was reborn as a summer resort and a large number of magnificent villas and mansions were erected.

Pre-Revolutionary buildings: Old Stone Mill, ca. 1673; the theory that it was built by the Norsemen in the 11th century has been discarded. – White Horse Tavern, 1673; restored. – Wanton-Lyman-Hazard House, 1675, one of the finest Jacobean houses in New England; restored. – Mawdsley-Gardner-Watson-Pitman House, ca. 1700, a two-story hip-roofed house. – Captain Peter Simon House, 1725, with a fine pedimented doorway. – Captain John Warren House, 1736, a two-story gambrel-roofed building. – Colony House (I, PL. 76), by Richard Munday, 1739–40, with a columned Great Hall and a paneled Council Chamber. – Dennis House (now St. John's Rectory), 1740. – Redwood Library, central wing by Peter Harrison, 1748, based on a design for a casino for Sir Charles Hotham by Inigo Jones; additions of 1858, 1875, and 1913; restored. Contains an important collection of American portraits. – Hunter House, 1748, one of the ten best examples of colonial residential architecture in America; restored. Furnished with 18th-century Newport pieces. – John Bannister House, 1751. – Vernon House (now Family Service Society building), ca. 1758, with 18th-century wall paintings in Chinese style. – Governor John Tillinghast House, 1760, a three-story gable-on-hip-roofed house; later enlarged. – Brick Market, by Peter Harrison, 1762, based on Somerset House by Inigo Jones; restored. – William Finch House, 1770, a two-story gambrel-roofed house.

Summer mansions: "Kingscote," by Richard Upjohn, 1839, Neo-Gothic. – Edward King House (now People's Library), by Upjohn, 1845–47, in Italian villa style. – "Malbone," by A. J. Davis, 1848–49, Neo-Gothic. – "Beechwood," by Andrew Downing and Calvert Vaux, 1851–52, in Italian villa style; rebuilt by Vaux in 1855 after a fire. – Willoughby Villa (now Ocean Vista Hotel), by Leopold Eidlitz, 1854, in Swiss chalet style. – Home of Richard Morris Hunt, 1870–71, a mixture of American colonial style and Viollet-le-Duc. – Cram House by Dudley Newton, 1871–72, in Queen Anne style. – Watts Sherman House (now Baptist Home of Rhode Island), by Henry Richardson and Stanford White, 1874; additions by Dudley Newton, 1875. – H. A. C. Taylor House, by McKim, Mead & White, 1885–86, the first colonial revival house. – Newport Casino, by McKim, Mead & White, 1880–81, in "shingle style." – Isaac Bell, Jr., House (I PL. 85, FIG. 258), by McKim, Mead & White, 1881–82, in "shingle style." – "Belcourt," by Richard Morris Hunt, 1882, French Renaissance. – "Ochre Court" (now part of Salve Regina College), by Hunt, 1888–91, French Renaissance. – "Marble House," by Hunt, 1888–92, Italian Renaissance. – "The Breakers," by Hunt, 1892–95, Italian Renaissance. – "The Elms," by Horace Trumbauer, 1901, inspired by the Château d'Asnières near Paris. – "The Waves," John Russell Pope's own home, 1927, in an English cottage style related to Lutyens.

Churches: Quaker Meetinghouse, 1699–1705; enlarged 1808, 1818. – Trinity Church (I, PL. 76), by Richard Munday, 1725–26; steeple 1741; enlarged 1762; tower and steeple rebuilt 1768. In this beautiful church Munday incorporated features of several of Wren's London churches. The three-tier wineglass pulpit is the only one of its kind in America. – Sabbatarian Meetinghouse (now part of the Newport Historical Society building), attributed to Munday, 1729. – Touro Synagogue (I, PL. 75), by Peter Harrison, 1759–63; splendid interior based largely on that of the Whitehall Banqueting House as shown in Kent's *Designs of Inigo Jones*. – St. Paul's Methodist Church, 1806, with interior detail by Benjamin Pitman. – St. George's School, chapel by Cram & Ferguson, 1928, a succinct statement of their brilliant Gothic.

Pawtucket. Pidge Tavern, ca. 1640. – Daggett House, 1685. – Old Slater Mill, 1793; restored. The cradle of the textile industry in America.

Providence. Many buildings remain from the 18th and the early 19th century in the city's historic East Side. In the downtown business and shopping district a program of urban renewal is in progress and a new civic center is being planned (PL. 178).

Secular buildings: Stephen Hopkins House, ca. 1743. – Old State House (now Sixth District Court), 1762. – "Shakespeare's Head," 1763, a square wooden house with a garden. – Brick School House, 1769. – Betsy Williams Cottage, 1773. – Joseph Brown House, by Joseph Brown, 1774. – Market House (now part of Rhode Island School of Design), 1774; third story added 1797; restored 1938–39. – John Brown House (now Rhode Island Historical Society headquarters), by Joseph Brown, 1786; with furniture by 18th-century Newport cabinetmakers and early American portraits. – Joseph Nightingale House (also known as John Carter Brown House), 1792. – Sullivan Dorr House, by John Holden Greene, ca. 1810; said to be modeled after Alexander Pope's villa at Twickenham, England; with wall paintings by Michele Felice Corné. – Edward Carrington House, 1810–12; contains rare Chinese ceramics, sculpture, ivories, and wallpaper. – Eliza Ward House, 1813; with French wallpaper. – Truman Beckwith House, by John Holden Greene, 1820. – The Arcade, by Russell Warren and James Bucklin, 1827–28, in Greek temple form with superb monolithic unfluted columns. – Providence Athenaeum, by William Strickland, 1836–38, a chaste Greek revival building; later changes. – State House, by McKim, Mead & White, 1895–1904, inspired by Bulfinch. – Brown University group: University Hall, by Joseph Brown, 1770–71; Hope College, 1822; Manning Hall, by James Bucklin, 1835, a fine Greek Doric temple; Rhode Island Hall, 1840; and Slater Hall, 1879.

Churches: First Baptist Meetinghouse, by Joseph Brown, 1775; the steeple is based on one of Gibbs's rejected designs for St. Martin-in-the-Fields; restored 1957–58. – Beneficent Congregational Church (known as "Round Top"), 1809; neo-Greek remodeling by James Bucklin, 1836. – St. John's Cathedral, by John Holden Greene, 1810,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

generally inspired by Bulfinch's New South Church in Boston; early use of Gothic details (perhaps from Langley); Renaissance chancel added by Cram & Ferguson in the 1920s. – First Congregational Church, by John Holden Greene, 1816. – Grace Church, by Richard Upjohn, 1846, Neo-Gothic.

Museums: Rhode Island School of Design, Museum of Art, with classical art, Far Eastern art, 18th-century English and American furniture, and 19th-century French painting. – Brown University, Annmary Brown Memorial, with paintings, incunabula, and manuscripts, and John Carter Brown Library, with pre-Columbian manuscripts, medieval miniatures, and Americana.

Saunderstown. Samuel Casey Farm, ca. 1750. – Gilbert Stuart Birthplace and Snuff Mill, 1751.

Wickford. Old Narragansett Church (formerly St. Paul's), built 1707 in Narragansett, moved to Wickford in 1800; English nonconformist style. – In nearby Cocumscussoc is Smith's Castle, ca. 1679.

BIBLIOG. N. M. Isham and A. F. Brown, Early Rhode Island Houses: An Historical and Architectural Study, Providence, 1895; N. M. Isham, Trinity Church in Newport, R.I.: A History of the Fabric, Boston, 1936; A. F. Downing, Early Homes of Rhode Island, Richmond, 1937; FWP, Rhode Island: A Guide to the Smallest State, Boston, 1937; H.-R. Hitchcock, Jr., Rhode Island Architecture, Providence, 1939; P. A. Means, Newport Tower, New York, 1942; A. F. Downing and V. J. Scully, Jr., The Architectural Heritage of Newport, R.I., 1640–1915, Cambridge, Mass., 1952; R. E. Carpenter, Jr., The Arts and Crafts of Newport, R.I., 1640–1820, Newport, 1954 (cat.); J. H. Cady, The Civic and Architectural Development of Providence, Providence, 1957; N. Sirkis, Newport Pleasures and Palaces, New York, 1963.

Connecticut. The Dutch erected a fort on the present site of Hartford in 1633, but the first permanent settlements were established by colonists from Massachusetts Bay in Wethersfield, Windsor, and Hartford in 1635. Connecticut was admitted to the Union in 1788. Hartford is the state capital, but from 1701 to 1875 it shared the honor with New Haven.

Branford. Swain-Harrison House, ca. 1680. – Old Academy, 1820, in late Georgian style.

East Haddam. "The Mowings," late 17th century. – "Dunstaffnage," 1738; remodeled 1790. – Nathan Hale Schoolhouse, 1773. – Goodspeed Opera House, 1876; restored.

Essex. Pratt House, mid-18th century; with a fine collection of American furniture and furnishings. – Lord House, late 18th century. – Hill Academy, 1831.

Fairfield. Sun Tavern, 1780. – Benson House, 1780; enlarged 1832. – Town Hall, 1794; restored and extended 1936. – Burr Mansion, 1790; altered 1840. – Old Academy, 1802–04.

Farmington. Stanley-Whitman House (now Farmington Museum), ca. 1660. – Congregational Church, 1771. – General Solomon Cowles House, 1782. – George Cowles House, 1804. – Hill-Stead Museum, with French impressionist paintings and Japanese prints.

Guilford. Henry Whitfield House, 1639; rebuilt in 1868 after a fire; restored 1930–39. A large stone house of the "bawn" type with 17th-century furnishings. – Hyland House, ca. 1660; restored 1916. – Thomas Griswold House, 1735.

Hartford. Old State House (now a museum), by Bulfinch, 1792–96, with a magnificent Senate, or Council, Chamber; later changes. – First Church of Christ (Congregational), 1805–07. – Christ Church Cathedral, by Ithiel Town, 1827–38, a distinguished Neo-Gothic structure; later additions, including roof pinnacles, 1902. – Wadsworth Atheneum, by Town & Davis, 1842–44, a crenelated brownstone building; Colt wing, by B. W. Morris, 1906–07; Morgan wing, by Morris, 1910; Avery wing, by Morris & O'Connor, 1932–34. – Trinity College group, by William Burges, 1873–76, Neo-Gothic. – State Capitol, by Richard Upjohn, 1878–82. – Constitution Plaza, a successful redevelopment of the central city area completed in the early 1960s. – Wadsworth Atheneum, with American and European painting from the 15th century to the present, early American furniture, bronzes, silver, ceramics, tapestries, pre-Columbian art, and Oriental art. – Connecticut Historical Society, with furniture, paintings, silver, and glassware by Connecticut artists. – In East Hartford is the Test Laboratory, Pratt & Whitney Aircraft Company, by Albert Kahn, ca. 1935; Kahn at his peak in industrial design. In Bloomfield is the Connecticut General Life Insurance Company building, by Skidmore, Owings & Merrill, 1955–57, with interior court gardens and a monumental sculpture group, *The Family*, by Isamu Noguchi.

Lebanon. War Office, 1720s. – Governor Trumbull House, ca. 1735. – Congregational Church, by John Trumbull, 1804–09.

Litchfield. Sheldon House, 1760. – Tapping Reeve House and Law School, 1773; restored 1930. – Congregational Church, 1829; restored 1929.

Middletown. Mansfield House, 1807. – Russell House (now part of Wesleyan University), by Town & Davis, 1828, in Greek revival style; wing added later. – Wesleyan University, Davison Art Center, located in Alsop House, 1838–40, a Greek revival building with unique exterior and interior paintings in oil on plaster; renovated 1952. The Art Center contains an outstanding collection of prints dating from the early 15th century to the present.

Mystic. Mystic Seaport consists of a group of buildings, some originally built here and the rest moved from neighboring towns, ships, and maritime exhibits, which give a picture of a typical New England seaport of the mid-19th century. In addition to the Buckingham House of 1768 with a kitchen ell dating from the 1690s, the Counting House of 1833, the Thomas Greenman House of 1842, and the Aloha Meetinghouse of 1851, there are ship chandleries, sail lofts, a school, a general store, a tavern, and an apothecary shop. The *Charles W. Morgan*, built in 1841, the last of the wooden whaling vessels, is permanently berthed here. The exhibits include ships' figureheads, scrimshaw, ship models, and marine paintings. A few miles from the port is the Denison Homestead, also known as Pequotsepsos Manor, erected in 1717.

New Britain. Art Museum of the New Britain Institute, containing American paintings and drawings from the 18th century to the present, with emphasis on works since 1900.

New Canaan. Silliman House, ca. 1770. – Edwin Hoyt House, by Hoyt, 1859; very early use of poured concrete. – New Canaan contains a large group of interesting contemporary houses, mainly influenced by the international style, of which the most important undoubtedly are Marcel Breuer's own homes, one erected in 1947 and the other in 1951, and Philip Johnson's own "glass house" (I, PL. 93), 1949–50.

New Haven. Morris House, 1680–85; wing added 1767. – Superb grouping of three churches in central green: First Church of Christ (Center Church), by Asher Benjamin and Ithiel Town, 1812–18; United Church, by David Hoadley and Ebenezer Johnson, 1813–15; and Trinity Episcopal Church, by Ithiel Town, 1814–15, very early Neo-Gothic, later changes. – Yale University: Connecticut Hall, 1752, later changes; Old Library (now Dwight Chapel), by Ithiel Town, 1842, Neo-Gothic inspired by King's College Chapel in Cambridge, England; Farnam Hall, by Russell Sturgis, 1869–70, Neo-Gothic; Harkness Memorial Quadrangle, by James Gamble Rogers, 1917–21, probably the finest "collegiate Gothic" complex in the United States; Sterling Memorial Library, rendered as a huge Gothic donjon by Rogers, 1931; and several important buildings of present sculpturally structured phase of architecture, including extension to Art Gallery, by Louis Kahn, 1952–54, Forestry Building, by Paul Rudolph, 1959–60, and Ingalls Hockey Rink (XIII, PL. 229), by Eero Saarinen, 1958. – About one-third of the city is undergoing an urban renewal program; leading architects, such as Paul Rudolph, Ludwig Mies van der Rohe, I. M. Pei, Skidmore, Owings & Merrill, and Eero Saarinen, have designed a community center, schools, housing developments, and shopping center. – Yale University Art Gallery, with early American painting, silver, and furniture, Italian Renaissance painting, Near and Far Eastern art, Greek and Roman vases, 20th-century painting and sculpture, pre-Columbian art, and African sculpture (X, PL. 220).

New London. Hempsted House, 1678; enlarged 1728. – Shaw Mansion, 1756. – Courthouse, 1784. – Deshon-Allyn House, 1828–29. – Lyman Allyn Museum, with Connecticut painting, furniture, and minor arts of the 18th and the early 19th century, Chinese art, drawings, modern sculpture, and modern French painting.

Norfolk. Church of Christ, by David Hoadley, 1813–14. – Academy, 1840.

Norwich. Leffingwell Inn, 1675; enlarged 1741, 1760; restored 1960. – Backus House, 1750. – Rockwell House, 1818.

Stamford. Barnum House, 1730. – First Presbyterian Church (IV, PL. 186), 1958.

Stonington. "Anguilla," 1660; rebuilt in 1707 after a fire. – "Stonecrop," 1750. – Old Lighthouse, 1843.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Suffield. Burbank-Phelps-Hetheway House, 1736. – Hastings Hill, 1737. – King House, 1764.

Wallingford. Nehemiah Royce House, 1672. – Samuel Parsons House, 1759.

Wethersfield. Old Warehouse, before 1692. – Buttolph-Williams House, 1692, an outstanding example of a "mansion house"; restored 1947. – Joseph Webb House, 1752, with an ell of 1678; restored 1916. – First Church of Christ (Congregational), 1761–64. – Silas Deane House, 1766; restored. – Isaac Stevens House, 1788–89; restored. – Old Academy (now a museum), 1801.

Windsor. Fyler House, 1640; enlarged 1773. – Ellsworth Homestead, 1740.

BIBLIOG. H. W. French, Art and Artists in Connecticut, Boston, New York, 1879; N. M. Isham and A. F. Brown, Early Connecticut Houses: An Historical and Architectural Study, Providence, 1900; C. M. Price, An Architectural Monograph on Historic Houses of Litchfield (White Pine Ser., V, 3), St. Paul, 1919; D. B. Lyman et al., An Atlas of Old New Haven or the Nine Square as Shown on Various Early Maps, New Haven, 1929; J. F. Kelly, Architectural Guide for Connecticut, New Haven, 1935; F. S. M. Crofut, Guide to the History and the Historic Sites of Connecticut, 2 vols., New Haven, 1937; FWP, Connecticut: A Guide to Its Roads, Lore and People, Boston, 1938; J. F. Kelly, The Henry Whitfield House, 1639: The Journal of the Restoration of the Old Stone House, Guilford, 1939; J. F. Kelly, Early Connecticut Meetinghouses, 2 vols., New York, 1948; A. N. B. Garvan, Architecture and Town Planning in Colonial Connecticut, New Haven, 1951; T. Sizer, The Lebanon Meetinghouse, Lebanon, Conn., JSAH, XIV, 2, 1955, pp. 8–11; E. Hatch, A Guide to Historic Sites in Connecticut, Middletown, Conn., 1963; J. F. Kelly, Connecticut's Old Houses, Stonington, Conn., 1963; J. F. Kelly, The Early Domestic Architecture of Connecticut, New York, 1963.

Middle Atlantic States (New York, New Jersey, Pennsylvania, Delaware, Maryland). Henry Hudson, an Englishman in the employ of the Dutch East India Company, discovered the Hudson River in 1609 and sailed up as far as Albany. New Amsterdam (the present New York City) was founded in 1625, and the following year the Dutch purchased Manhattan Island from the Indians. New Amsterdam had stepped-gable houses, formal gardens, blocks walled around, and even a canal. The old street patterns remain. The street running along the city wall is now called Wall Street; part of the area is still called the Bowery, from the Dutch word *bouwerie* (tarm); the wide space in front of the original fort is still called Bowling Green, and the great avenue leading away from it is still Broadway.

Though the streets, following the watercourses and the walls, reveal the primary purpose of the city as a late medieval fortified port, the ubiquitous formal gardens of the settlers clearly show their knowledge of the Italian Renaissance. In 1660 Jacques Cortelyou surveyed New Amsterdam (see FIG. 611, A), and in the same year he also surveyed the regular plan for the first village in New Jersey, across the Hudson River from New Amsterdam, named Bergen after a town in the Netherlands. Here Cortelyou laid out a square town, with two roads meeting in the central plot (reserved for public use), surrounded by stockades, and with fields and farms beyond the walls. The plan of Bergen was similar to that of New Haven and also to that of New Castle, Del., which Peter Stuyvesant is said to have planned after the Dutch took over New Castle from the Swedes. Other Dutch towns recall the cities of the mother country; for example, Albany, in the 1695 plan, looks like a segment of old Amsterdam, completely walled. Even in the relation of towns to each other the Dutch looked homeward: New Bruckelen and New Utrecht were placed in the same relation to each other and to New Amsterdam as the originals of their names in the Netherlands.

Maryland was settled by the English and became a refuge for Roman Catholics. Delaware and New Jersey were first settled by the Dutch, then the Swedes; as part of New Netherland, they were ceded to the English in 1664. The Quakers established themselves in New Jersey and Pennsylvania during the 1680s. The most visionary city plan created for America in the colonial period was that of Philadelphia. In 1682 William Penn and his surveyor, Thomas Holme, stretched out the framework of a great city on a superb site at the confluence of the Delaware and Schuylkill rivers, with one great central square for public purposes and four lesser residential squares (FIG. 619). Those whose households were of sufficient size would be granted a lot in the city as well as a larger lot in the "Northern Liberties" (where Penn envisioned English-style country-house living) and vast acres in the western farming lands. Though the plan proved so extensive that it took a century to fill it up, the city, half-grown into it in the mid-18th century, was already the second city in the British Empire, surpassed only by London itself.

The plan of Philadelphia, with its grid and its squares and its creation of so large a city framework, set a style. The only other plan that was subsequently as influential on other cities is the century-later one for Washington.

Although the plans for Philadelphia and Annapolis (PL. 136) were the great glories of the early settlements in the Middle Atlantic area, of equal interest are the plans for the smaller towns, which reflected a simpler approach: space was set aside for a market, a meetinghouse, and sometimes a courthouse, with streets placed for easy access, and more or less regular grids of lots laid off the streets within the patented bounds. This regularity at its best was of the Philadelphia variety, as in the central-square plan for Lancaster, Pa., and its improved copy for Reading, Pa.

The real revolution in city development in the Middle Atlantic section, and through it in the development of the whole United States as the eastern settlers streamed west, came with the highly ordered and generally very regular plans of the neoclassic age. It was the extremely geometric approach to design (most usually exemplified in the completely regular grid) that came to dominate American city planning in the neoclassic age and later.

The desire for order is seen in the leveling of the hills of Albany in 1794 and the application of a grid pattern to the old Dutch city; in the survey of a grid for Pittsburgh in 1803, replacing the more contained plan of 1764, resurveyed 1784; in the extension of New York City's Dutch pattern with a vast gridwork to the north in 1811; and even in so small a change as that in Reading, which in 1830 discarded names and substituted numbers for its Philadelphia-type grid of streets. A similar search for the geometric expression can be seen in Ramée's 1811 plan for Union College in Schenectady and in the many small cities laid out along the burgeoning Hudson and Mohawk valleys in New York, as Bannister (1942) has noted.

But the fading of the classical impulse in the late 1830s was inexorable, and there was a return to the naturalistic plan in Laurel Hill Cemetery, Philadelphia, of 1838, in the irregular site plans of the 1840s popularized by Downing, and in the spate of such designs in the 1850 and 1860s including Downing's plan for the Mall in Washington, Llewellyn Park, Orange, N.J., 1857, which was one of the earliest developments of a romantic suburb, Olmsted's Central Park in New York, and other work in Boston, Philadelphia, and Baltimore in the succeeding decades.

The transformation of the classical idea continued and the Paris Beaux-Arts approach was adopted. The attempt to join the central Philadelphia square to Fairmount Park by a Paris-style avenue was suggested as early as 1871. In 1907 Trumbauer, Zantzinger, and Cret proposed that the avenue should turn toward the park through the focus of an art gallery; they revised the scheme in 1908, and it was carried out in the 1920s, from Gréber's detailed design of 1917. McKim, Mead & White turned to the architecture and site planning of the Italian Renaissance for their development of Columbia University in New York City, and even Olmsted's rolling Riverside Drive in that city was dotted with classical monuments and columnar screens.

This is basically the mode that has continued in the cities up to now. It has led to the great American interest in the garden-city idea, which has had its most concrete continuing expression in the Middle Atlantic States. It was a force in shaping the romantic suburbs, such as Olmsted's Roland Park in Baltimore and Grosvenor Atterbury's Forest Hills Gardens in New York, as well as in the "complete society" concept of factory communities expressed by the Duplan Silk Company in Hazleton, Pa., early in the 20th century and the Bata shoe factory outside Baltimore of three decades later. The great experiments have been the model town of Radburn, N.J., designed by Clarence Stein and Henry Wright in the 1920s, and the Federal government's four greenbelt towns of the 1930s, of which the leading example is Greenbelt, Md. (PL. 164), by Hale Walker, town planner, and Reginald Wadsworth and Douglas Ellington, principal architects. Frank Lloyd Wright's expression of the movement in his Broadacre City project (PL. 147) was concretely realized in the Middle Atlantic area in his "Suntop" House at Ardmore, Pa., 1939.

A major theme in the period of the development of the modern cities has been the continual look backward. For example, in New Castle the Town Hall of 1823 was built in the 18th-century style, the public library of about 1890 was a kind of Adam-Art Nouveau version of the style, and the old Arsenal was given an 18th-century entrance and details in 1930. Similarly, in the Independence Hall area of Philadelphia its essentially English forms have been re-restored and reinterpreted, as in Strickland's 1828 restoration of a steeple in the manner of the 18th-century one that had burned down four decades before, the restoration of Carpenters' Hall in 1857, and the present restoration of the whole area, which involves not only the re-creation of certain long-built-over 18th-century streets but also the creation of a purely 20th-century Mall as a glorified setting for the main buildings, necessitating the destruction of many actual 18th-century buildings and a host of 19th-century ones, including the important Guarantee Safe Deposit and Trust Company by Frank Furness, Louis Sullivan's master.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

It is only in the changing sorts of cities of today that the past can no longer be stretched to the present. Skyscrapers are everywhere. Large governmental complexes and factories have been erected on the outskirts of the cities, and new residential areas have been constructed in the countryside. The centers, renewing, and the edges, accreting, have utilized the new forms in architecture.

BIBLIOG. R. F. Bailey, Pre-Revolutionary Dutch Houses and Families in Northern New Jersey and Southern New York, New York, 1936; T. C. Bannister, Early Town Planning in New York State, JSAH, III, 1–2, 1942; R. S. Allen, Covered Bridges of the Middle Atlantic States, Brattleboro, Vt., 1959; B. H. Macdonald, Historic Landmarks of Delaware and the Eastern Shore (ed. J. Eckman), 2d ed., Wilmington, 1963.

New York. The Dutch established the colony of New Netherland in 1613; it was conquered by the English in 1664 and renamed New York. During the first half of the 18th century the area was a battleground in the colonial wars between Great Britain and France. New York was one of the 13 original colonies admitted to the Union in 1788. Albany is the capital of the state.

Albany. A fortified trading post was erected by the Dutch in 1614 at Fort Nassau (later called Fort Orange and now Albany), and in 1624 the first colonists arrived. The city was a center for the fur trade with the Indians. Albany became the capital in 1797.

Secular buildings: Schuyler Mansion, 1762, a beautiful red-brick Georgian mansion; restored 1916, 1950; contains period furnishings. – "Cherry Hill," 1768, in Georgian style. – Ten Broeck Mansion, 1798, in Federal style with period furnishings. – Joseph Henry Memorial, by Philip Hooker, 1815. – State Capitol, begun by Thomas Fuller and Augustus Laver in 1869; continued by Henry Richardson and Leopold Eidlitz in 1875, who modified the original design; completed in 1899. – City Hall, by Richardson, 1880–81, in Romanesque style. – Court of Appeals, by Henry Rector, 1884, in Greek revival style. Richardson's courtroom, designed in 1881 and originally in the State Capitol, is now an addition to the Court of Appeals building.

Churches: First Church in Albany, by Philip Hooker, 1798, with a pulpit of 1656 carved in the Netherlands. – St. Peter's Episcopal Church, by Richard Upjohn, 1859, with a collection of Queen Anne silver. – All Saints' Cathedral, by Robert W. Gibson, 1884–88, in English Gothic style.

Museums: Albany Institute of History and Art, with American painting of the 18th–20th century, European painting, sculpture, silver, and furniture. – New York State Museum, with Iroquois art and six dioramas depicting Iroquois life.

Amsterdam. Guy Park Manor, attributed to Samuel Fuller, 1766; rebuilt after a fire in 1773; two wings added in 1858.

Bedford. Courthouse (now Town Hall), 1787. – John Jay House, 1800; restored 1965. On the grounds are a schoolhouse, barns, stables, and a coach house. – St. Matthew's Church, 1807–10.

Buffalo. St. Paul's Episcopal Cathedral, by Richard Upjohn, 1849–51; spire 1870; rebuilt by R. W. Gibson after fire of 1888. – State Hospital, by Henry Richardson, designed 1870 and erected 1872–77. – Guaranty (now Prudential) Building (I, PL. 87), one of the two or three greatest structures by Louis Sullivan, 1894–95. – Martin House, by Frank Lloyd Wright, 1904. – Kleinhans Music Hall, by Eliel Saarinen, 1938–40. – Albright-Knox Art Gallery, housed in two buildings, one of 1905 by Edward B. Green and the other of 1962 by Skidmore, Owings & Merrill. The Gallery contains 18th-century English painting, 19th-century French and American painting, contemporary American and European painting, and sculpture of all periods. – Buffalo Museum of Science, with Near and Far Eastern, pre-Columbian, African, and American Indian art.

Canajoharie. Van Alstyne House, 1749, a stone story-and-a-half house. – Canajoharie Art Gallery, with American painting and sculpture.

Constableville. Constable Hall, 1810–19; restored 1948–49. A stone house, two stories in the front with a columned recessed portico and three stories in the rear with a double-tiered gallery. Contains furniture dating from 1800 to 1830. On the grounds stands St. Paul's Church, 1837, modeled after St. Paul's Chapel in New York City.

Cooperstown. Farmers' Museum and Village Crossroads, 18 buildings showing rural village life from 1783 to the 1840s, and Fenimore House, with American painting and folk art of the 18th and 19th centuries. – Pomeroy Place, 1804. – Near Cooperstown is Hyde Hall, designed by Philip Hooker in 1811 and remodeled by him in 1833, in Greek revival style.

Corning. Corning Glass Center, designed by Harrison, Abramovitz & Abbe, completed 1951, including Corning Museum of Glass, with superb comprehensive collection of glass products from 1500 B.C. to the present.

Croton-on-Hudson. Van Cortlandt Manor, 1697; enlarged 1748–49; restored 1954–59. This is a stone and wood manor house, with a double porch and divided flight of exterior stairs; it contains family portraits and original furniture. On the grounds are a smokehouse and a ferry house with a separate kitchen.

East Hampton. "Home Sweet Home," ca. 1660 with later alterations, a fine example of a salt-box house. – Mulford House, 1680, a duplicate of "Home Sweet Home." – Clinton Academy, 1784. – Hook Windmill, 1806. – Guild Hall, with contemporary American painting.

Elmira. Arnot Art Gallery, housed in a Greek revival building of about 1830, contains 17th-century European painting. – Elmira College, with a collection of Chinese porcelains and French bronzes.

Fort Johnson. Fort Johnson, 1749, a baronial stone residence; contains period furniture and Indian relics.

Garrison-on-Hudson. "Boscobel," 1806–08, one of the finest examples of Adam-style architecture in America. The Adam moldings, mantels, and exterior ornamentation were commissioned by States Morris Dyckman, who built the house, in London, where he also purchased the silver, china, glassware, and the rare Moorefields carpet designed by Robert Adam.

Glens Falls. The Hyde Collection, with European painting, sculpture, and drawing from the 14th to 20th century.

Herkimer. Fort Herkimer Church, 1737; enlarged 1767; a blending of German and English styles.

Hudson. Many late-18th- and 19th-century residences, including Center House ("Old Turtle"), late 18th century, with a pediment carried on a curve of oval projections, and "The Hill," 1788–89 and 1801, a fine Regency house.

Hurley. A number of the Dutch stone houses of the original settlers still exist.

Irvington. "Sunnyside," the home of Washington Irving, originally a stone cottage built in the early 1700s and remodeled by Irving from 1835 to 1839; with many of Irving's own furnishings. – "Nevis," 1835, a fine example of the 19th-century architecture of the area. – Armour-Carmer House, 1860, an octagonal residence.

Ithaca. Cornell University, Andrew Dickson White Museum of Art, with 19th- and 20th-century American and European painting and sculpture, graphic arts, and Japanese and Chinese paintings and ceramics.

Johnstown. Johnson Hall, by Samuel Fuller, 1763, a baronial mansion; restored. Next to the Hall is a blockhouse erected in 1763. – Fulton (formerly Tyron) County Courthouse, also by Fuller, 1772. – Fulton County Jail, 1772. – St. John's Episcopal Church, 1836.

Kinderhook. House of History, designed and built by Barnabas Waterman in 1810 in Federal style.

Kingston. Senate House, 1676; rebuilt after fire during the Revolution. Next door is the Senate House Museum, containing American painting of the 18th and 19th centuries. – Bevier House, a stone house built by the Huguenots in the early 18th century. – Sudan House, ca. 1795, in Federal style. – Old First Dutch Church, 1852, in Greek revival style.

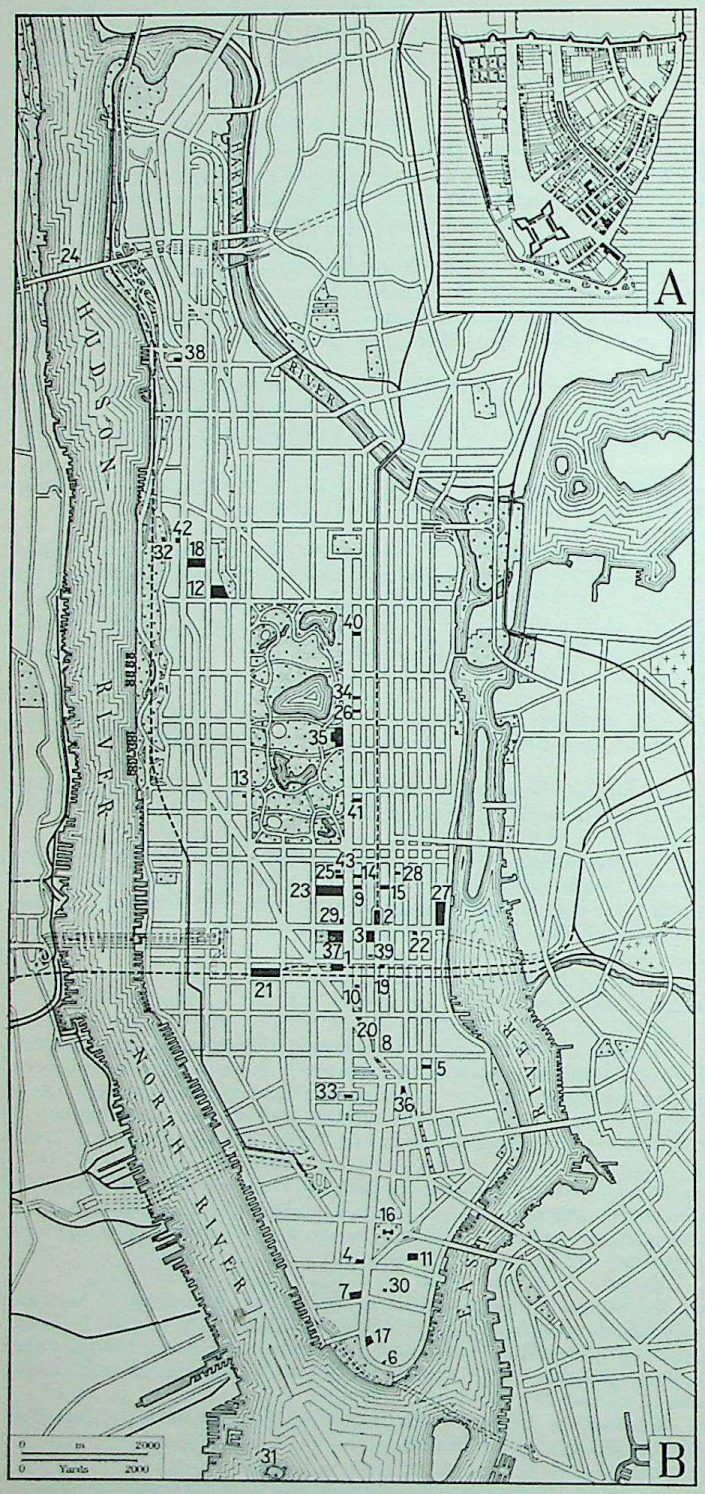
Lawrence. Rock Hall, 1767, an elegant Georgian mansion; east wing added 1881; with beautiful furniture.

Little Falls. General Herkimer House, attributed to Samuel Fuller, 1764. – Indian Castle Church, 1769, the only Indian mission church extant in New York.

Monroe. Museum Village of Smith's Clove, 37 buildings showing the life and crafts of a typical 19th-century New York village.

Newburgh. Washington's Headquarters (Jonathan Hasbrouck House), 1750–70, a Dutch stone house. – Knox Headquarters, 1754, a stone house with furniture of the Revolutionary period.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



New York City. (A) Plan of New Amsterdam in 1660, after the Castello plan based on the survey of Jacques Cortelyou. (B) Plan of Manhattan. Principal monuments: (1) Empire State Building; (2) Pan American Building; (3) Airlines Terminal Building; (4) St. Paul's Chapel; (5) St. Mark's-in-the-Bouwerie; (6) Mission of Our Lady of the Rosary; (7) Trinity Church; (8) Grace Church; (9) St. Patrick's Cathedral; (10) "Little Church Around the Corner"; (11) Tribune Building; (12) Cathedral of St. John the Divine; (13) Shearith Israel Synagogue; (14) St. Thomas's Church; (15) St. Bartholomew's Church; (16) City Hall; (17) Custom House; (18) Low Library at Columbia University; (19) Seventy-First Regiment Armory; (20) Flatiron Building; (21) Pennsylvania Station (destroyed); (22) Daily News Building; (23) Rockefeller Center; (24) George Washington Bridge; (25) Museum of Modern Art; (26) Solomon R. Guggenheim Museum; (27) United Nations Headquarters; (28) Lever House; (29) Manufacturers Trust Company, Fifth Ave. at 43d St.; (30) Chase Manhattan Bank, main office; (31) Statue of Liberty; (32) Grant's Tomb; (33) Washington Arch; (34) National Academy of Design; (35) Metropolitan Museum of Art; (36) Cooper Union Museum; (37) New York Public Library; (38) Hispanic Society of America; (39) Pierpont Morgan Library; (40) Museum of the City of New York; (41) Frick Collection; (42) Jewish Theological Seminary of America; (43) Museum of Primitive Art.

New Paltz. A number of the original Huguenot stone houses remain. In the environs is the Colonel Josiah Hasbrouck House (known as "Locust Lawn"), 1814.

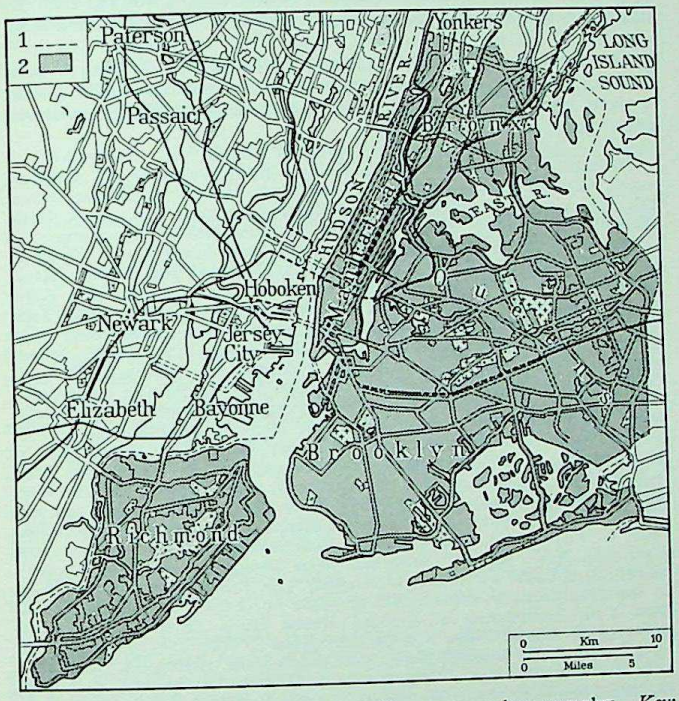
New York City. Officially designated the City of New York but popularly called New York City (PLS. 125, 137, 139), it comprises the five boroughs (FIG. 613) of Manhattan (FIG. 611, B), Bronx (settled 1641), Brooklyn (settled 1636), Queens (settled (1635), and Richmond (settled 1639). Each borough is described separately below.

Manhattan. Site of a trading post established by the Dutch in 1614, the first permanent settlement was made in 1625. Peter Minuit purchased the island from the Indians in 1626, when it was named New Amsterdam. It was captured by the English in 1664 and renamed New York in honor of the Duke of York.

Secular buildings: Fraunces Tavern, 1719, in Georgian style; completely reconstructed in 1907. – Jumel (or Morris-Jumel) Mansion, 1765, in Georgian style; restored in 1810, it contains French furniture of that period. – Dyckman House, ca. 1783; restored 1915. A Dutch farmhouse with a garden, smokehouse, and replica of a Revolutionary log hut. – Gracie Mansion (the mayor's residence), ca. 1799, in Federal style; enlarged ca. 1811; restored 1927; side wing 1966. – Clubhouse of the Colonial Dames of America (originally a stable), 1799, a simple stone building with balustraded porch. – "The Grange" (also called Hamilton Grange), by John McComb, 1801–02, in Federal style. – City Hall, by Joseph Mangin and McComb, 1803–12, in Federal style with French influences; restored; contains American 19th-century portraits. – Castle Clinton, a fort by McComb, 1808–11. – Old Merchant's House (Seabury Tredwell House), ca. 1830, attributed to Minard Lafever or John McComb, Federal variation of Georgian style. – Federal Hall (originally the Customs House and then the U.S. Sub-Treasury), exterior by Town & Davis, interior by William Ross and John Frazee, 1833–42, one of the most outstanding examples of Greek revival architecture in the United States. – First National City Bank on Wall St.: lower portion was originally the Third Merchants' Exchange, by Isaiah Rogers, 1836–42, in Greek revival style; upper portion was added by McKim, Mead & White, 1907–09, in the same style. – Colonnade Row (formerly La Grange Terrace), by A. J. Davis, 1832–36, in Greek revival style with a freestanding Corinthian colonnade. – Arsenal, by Martin Thompson, 1847–48; altered by Richard M. Hunt in 1862. – Laing Stores, by James Bogardus, 1848, one of the first cast-iron buildings. – Brooklyn Bridge (I, PL. 82), by John Roebling, 1869–83. – Tribune Building, by Richard M. Hunt, 1874, the first real skyscraper in New York; later addition of many more stories. – Jefferson Market Courthouse, by Withers & Vaux, 1876, Neo-Gothic. – Three structures by McKim, Mead & White expressing their Italian Renaissance phase: Villard Houses (I, PL. 85), 1883–85, Low Library at Columbia University, 1895–97, and Morgan Library, 1902–05. – Grand Central Terminal (I, PL. 88), by Reed & Stem and Warren & Witmore, 1903–13. – Seventy-First Regiment Armory, by Clinton & Russell, 1902–05, in Romanesque style. – Development of the second, or post-Sullivan, phase of the skyscraper: Flatiron Building, by Daniel Burnham, 1902; Singer Building and Tower, by Ernest Flagg, 1908, Italianate; and Woolworth Building (I, PL. 89), by Cass Gilbert, 1911–13, Neo-Gothic. – American Academy of Arts and Letters, two buildings, one by Cass Gilbert with an exquisite Italian Renaissance façade and the other by McKim, Mead & White, completed 1919. – The new skyscraper age: American Radiator Building, 1924, by Raymond Hood, in which Eliel Saarinen's Tribune Tower competition concepts were carried into practice; McGraw-Hill Building (I, PL. 89), 1928–31, by Hood, F. Godley, and J. A. Fouilhoux; Daily News Building, 1930–32, by Howells & Hood; and Empire State Building, by Shreve, Lamb & Harmon, 1930–32. – The great statement of the skyscraper city in the grouping of Rockefeller Center (I, PL. 95): original concept by Benjamin Wistar Morris, 1926; final design by Reinhard & Hofmeister, Corbett, Harrison & MacMurray, and Hood & Fouilhoux, 1931–40; additional buildings after World War II. In the Center are sculptures by Isamu Noguchi, Lee Lawrie (*Atlas*), and Paul Manship (*Prometheus*, I, PL. 130). – George Washington Bridge (I, PL. 393), by Othmar Ammann, chief engineer, and Cass Gilbert, consulting architect, 1931; second deck added 1961. – Museum of Modern Art (X, PL. 218, FIG. 395), by Philip L. Goodwin and Edward D. Stone, 1939; two additions by Philip Johnson, one completed in 1951 and the other in 1965. – Municipal Asphalt Plant, by Kahn & Jacobs, 1944, with a dramatically industrial exterior. – Solomon R. Guggenheim Museum (X, PL. 217, FIG. 414), one of Frank Lloyd Wright's major buildings, designed in 1943 and erected in 1956–59, which has a domed interior with galleries opening off a continuous spiral ramp. – United Nations Headquarters, by a committee of international architects headed by Wallace K. Harrison, with the final scheme principally by Le Corbusier and Oscar Niemeyer, 1947–52; includes the dramatic glass-sided tower of the Secretariat. – Lever House (I, PL. 95), by Skidmore,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Owings & Merrill, Gordon Bunschaft, chief designer, 1950–52, a glass tower rising beside a garden court. – Manufacturers Trust Company, Fifth Ave. at 43rd St., by the same firm and designer, 1954, a glass-walled bank, with a metal screen wall by the sculptor Harry Bertoia. – Seagram Building (I, PL. 95; X, FIG. 81), by Ludwig Mies van der Rohe and Philip Johnson, 1956–58. – Institute of International Education Building, by Harrison, Abramovitz & Harris, 1964; the conference rooms and furniture for them were designed by Alvar Aalto. – Chase Manhattan Bank, main office, by Skidmore, Owings & Merrill, 1961; plaza 1963. – Lincoln Center for the Performing Arts: Philharmonic Hall, by Max Abramovitz, 1962; New York State Theater, by Philip Johnson, 1964; Vivian Beaumont Theater, by Eero Saarinen, 1965; Metropolitan Opera House, by Wallace K. Harrison, 1966; Julliard Building, by Pietro Belluschi and Catalano & Westermann, 1967.



New York City, plan of the city including outer urban complex. *Key*: (1) New York City limits; (2) the five boroughs.

Churches: St. Paul's Chapel, by Thomas McBean, 1764–66, influenced by Gibbs's St. Martin-in-the-Fields in London; steeple 1793–94. – St. Mark's-in-the-Bouwerie, 1795–99; tower 1807; steeple 1829–35; porticoes 1836, 1854. – Mission of Our Lady of the Rosary (formerly Watson House), attributed to John McComb, east half 1794, west half 1806; interior completely remodeled. – Sea and Land Church, 1817, in Georgian style with Gothic touches; restored 1960. – St. Peter's (Roman Catholic) Church, attributed to Isaiah Rogers, 1836–40, Greek revival. – Trinity Church (I, PL. 82), by Richard Upjohn, 1839–46, outstanding example of Neo-Gothic. – Church of the Ascension, by Upjohn, 1840–41, Neo-Gothic. Interior, 1880–82, decorated by John La Farge, Augustus Saint-Gaudens, and Stanford White. – Mariners' Temple, attributed to Minard Lafever, 1843–44, Greek revival. – Grace Church, by James Renwick, 1843–46, Neo-Gothic. – St. Patrick's Cathedral, by Renwick, designed 1853 and built 1858–79, fine Neo-Gothic example; spires 1888; Lady Chapel, by Charles Matthews, 1901–06; baldachin and high altar, by Maginnis & Walsh, ca. 1945, with sculpture by John Angel. – Friends' Meetinghouse, by Charles Bunting, 1860, in Georgian style. – Church of the Transfiguration ("Little Church Around the Corner"), 1856, Neo-Gothic. – Central Synagogue, by Henry Fernbach, 1872, in Moorish revival style. – Cathedral of St. John the Divine, original Romanesque plan by Heins & LaFarge, 1891; foundations, arches, and buttresses, 1892–1911; design entirely restudied in English and French Gothic by Cram & Ferguson in 1911 and again in 1919–21; nave completed in 1920s and 1930s; towers and transepts still unfinished. – Shearith Israel Synagogue, by Arnold Brunner, 1897, a turn to Greco-Roman style following publications of excavations of synagogue remains in Galilee. – St. Thomas's Church, by Cram, Goodhue & Ferguson, 1913, Neo-Gothic. – St. Bartholomew's Church, by B. G. Goodhue, with Mayers, Murray & Phillips, completed 1930, in Byzantine style; portico by McKim, Mead & White, ca. 1902, in Romanesque style.

Monuments: Statue of Liberty, by Frédéric Bartholdi, on a base by Richard M. Hunt, 1886. – Grant's Tomb, by John H. Duncan, 1892–97. – Washington Arch, by McKim, Mead & White, 1895, with sculpture by Harmon A. McNeil and A. Stirling Calder.

Museums: Metropolitan Museum of Art, the greatest art museum in the country, with over 1,000,000 works from all areas and periods. The American Wing houses a series of original rooms from early residences, each furnished with objects of its period; American portraits of the 18th and the early 19th century are also displayed. There are two semiautonomous museum units: The Cloisters, with medieval European architecture, sculpture, stained glass, metalwork, and tapestries, and the Costume Institute, with costumes and textiles. – Frick Collection, with painting, sculpture, graphic arts, and minor arts of the 14th to 19th century. – Pierpont Morgan Library, with medieval and Renaissance manuscripts, early printed books, bookbindings, paintings, sculpture, and graphic arts. – Museum of Modern Art, with a superb collection of European and American art of the late 19th and the 20th century in all media. – Whitney Museum of American Art, with American painting, sculpture, and graphic arts of the 20th century. – Solomon R. Guggenheim Museum, with an important collection of 20th-century painting, mainly European and American. – Gallery of Modern Art, with 20th-century art. – Cooper Union Museum, with European and American textiles, ceramics, metalwork, glass, and designs and drawings. – New York Public Library, with an important print collection. – Hispanic Society of America, with Spanish and Portuguese painting, sculpture, and minor arts. – Museum of the City of New York, with paintings, prints, folk art, silver, and costumes of New York. – New-York Historical Society, with American portraits (particularly from New York) and Audubon prints. – Museum of the American Indian, with Indian art from North, Central, and South America. – Riverside Museum, with Tibetan painting and art objects and contemporary American art. – Jewish Museum, with Jewish ceremonial art from all parts of the world. – Scalamandre Museum of Textiles, with textiles, mainly Western, from the 17th century to the present. – Museum of Primitive Art, with art of Africa, Oceania, pre-Columbian America, and prehistoric Europe and Asia.

Bronx. Van Cortlandt Mansion, 1748, a Dutch Georgian residence. – Poe Cottage, ca. 1812. – Bartow-Pell Mansion, by R. O. Bolton, 1836–42, in Greek revival style; beautiful sunken garden.

Brooklyn. Pieter Claesen Wyckoff House, ca. 1641, a Dutch farmhouse. – Lefferts Homestead, 1777, in late Dutch style. – Erasmus Hall High School, attributed to Pierre Charles L'Enfant, 1786, in Federal style. – Flatbush Dutch Reformed Church, by Thomas Fardon, 1793–98, in Georgian style. – Borough Hall, attributed to Gamaliel King or V. G. Griffin, 1836–49; cupola by C. W. and A. A. Stoughton, ca. 1900. – Holy Trinity Church, by Minard Lafever, 1844–47, in Flamboyant style. – Litchfield Mansion, by A. J. Davis, 1853–56. – Brooklyn Museum, with pre-Columbian, American Indian, African, and Near and Far Eastern art, Greek and Roman art, American period rooms, and American and European painting, sculpture, and minor arts.

Queens. Bowne House, 1661. – Old Quaker (Friends') Meetinghouse, ca. 1694. – King Mansion, ca. 1750; restored after fire of 1964. – Bodine Castle, attributed to A. J. Davis, 1840, Neo-Gothic.

Richmond (Staten Island). Britton Cottage, 1677. – Stillwell-Perrine House, ca. 1679. – Conference House (Billopp House), ca. 1680. – Richmondtown Restoration: The village of Richmond is being restored to show the evolution of an American village during the 17th, 18th, and 19th centuries; upon completion it will include more than 30 buildings. The following buildings have been restored: Voorlezer's House, 1695; Treasure House, 1700; Lake-Tyson House, 1740; Third County Courthouse, 1837; offices of the surrogate and county clerk (now the Staten Island Historical Society headquarters), 1848; and St. Andrew's Church, by William Mersereau, 1872. – Sailors' Snug Harbor, by Martin Thompson, 1831–33, in Greek revival style. – Verrazano-Narrows Bridge, by Othmar Ammann, 1964. – Staten Island Institute of Arts and Sciences, with regional paintings and European and American graphic arts. – Jacques Marchais Center of Tibetan Arts, with Far Eastern art.

Ogdensburg. Remington Art Memorial, with paintings, water colors, and bronzes by Frederic Remington (1861–1909).

Old Chatham. Shaker Museum, housed in seven buildings, with displays of furniture, textiles, and minor arts made by the Shakers.

Oswego. Fort Ontario, a British military fort, erected in 1759; rebuilt 1839–42; remodeled 1863–72. – Bates-Richardson Mansion, 1850, with fine Victorian furnishings.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Oyster Bay. Raynham Hall, original part before 1738, when it was enlarged; Victorian wing added ca. 1851; restored 1953; with colonial and Victorian furniture. – Sagamore Hill, 1884, the summer home of Theodore Roosevelt; furnished as it was when he lived here.

Port Chester. Bush Homestead, ca. 1770, in Georgian style. – Kneses Tifereth Israel Synagogue (I, PL. 92), by Philip Johnson, 1955–56.

Poughkeepsie. Clinton House, ca. 1765; later altered and enlarged. – Hudson River State Hospital, by Withers & Vaux, 1866–72, Neo-Gothic. – Vassar College: Main Hall, by James Renwick, 1861–65, in Second Empire style, and Dwight Perry, Jr., Cooperative House, by Marcel Breuer, 1949–51. – Vassar College Art Gallery, with European and American painting, sculpture, and graphic arts from the 15th century to the present and Far Eastern ceramics and jades.

Rensselaer. Fort Crailo, ca. 1704, a Dutch fortified house; rear wing added 1762 in Georgian style; remodeled 1790, 1800; restored.

Rochester. Stone-Tolan House, 1789–92. – St. Luke's Episcopal Church, 1824. – Campbell-Whittlesey House, 1835–36, in Greek revival style; restored; contains a fine collection of stenciled Empire furniture. – Jonathan Child House, by Hugh Hastings, 1838, in Greek revival style; restored. – "Woodside," 1838–40, a Greek revival mansion, with regional paintings and furniture. – First Unitarian Church, by Louis Kahn, 1962. – Midtown Plaza, by Victor Gruen & Associates, 1962. – Rochester Memorial Art Gallery, with American and European painting from the 15th century to the present, Far Eastern art, ancient and medieval sculpture, and primitive art. – George Eastman House, a museum of photography; also contains American and European painting. In the garden is the Eastman Birthplace, 1846–61, moved from Waterville and restored.

Sag Harbor. Old Custom House, 1789. – Whalers' Presbyterian Church, by Minard Lafever, ca. 1840. Egyptian form in wood. – Suffolk County Whaling Museum, by Lafever, 1845, in Greek revival style; contains scrimshaw, toys, figureheads, and whaling implements.

St. Johnsville. Fort Klock, 1750, a fortified farmhouse and trading post. – Palatine Church, 1770, a gambrel-roofed stone Lutheran church.

Schenectady. St. George's Episcopal Church, by Samuel Fuller, 1759–69, in Georgian style with hipped roof. – Union College, laid out by J. J. Ramée in 1811 on a classical revival plan; only two of his buildings remain, the more notable being South College, erected in 1820. Ramée's domed library scheme was replaced by the Nott Memorial Library, designed by Edward T. Potter, 1858–76, in Neo-Gothic style. – Dutch Reformed Church, also by Potter, 1862, in Neo-Gothic style. – In what is called the stockade area of the city are a large number of residences dating prior to 1825.

Setauket. Thompson House, early 18th century, a salt-box house. – Caroline Church of Brookhaven, 1729. – Presbyterian Church, 1811.

Southampton. "The Hollyhocks" (Halsey Homestead), 1648, a salt-box house; 18th-century additions; with furnishings of the 17th and 18th centuries and period gardens. – Parrish Art Museum, with American painting of the 19th and the early 20th century, Roman sculpture, and Italian Renaissance painting.

Stone Arabia. Reformed Church, 1788. – Lutheran Church, 1792.

Syracuse. Syracuse University, Lowe Art Center, with American painting, modern sculpture, and Japanese and Korean ceramics. – Everson Museum of Art, with ceramics, especially contemporary and Oriental, and American painting.

Tarrytown. "Lyndhurst," the Jay Gould mansion, by A. J. Davis, 1838, Neo-Gothic; enlarged in 1864 from Davis's plans; with original furnishings. – In North Tarrytown are the Old Dutch Church of Sleepy Hollow, ca. 1699, and Philipse Castle, 1683, a Dutch stone manor house with a wooden wing erected in 1785.

Troy. Rensselaer County Historical Society, located in a beautiful sandstone Federal house designed by Philip Hooker and completed in 1827; fine furniture of the 1830s and 1840s. – Troy Public Library, with Hudson River School paintings and Renaissance engravings.

Utica. Utica State Hospital, ca. 1837–43, in Greek revival style with a monumental four-story Doric portico. – "Fountain Elms," by William J. Woollett, Jr., 1850, in Italian villa style; restored; now a museum of 19th-century Americana. – City Hall, by Richard Upjohn, 1852–53, in his Italian villa mode. – Dowling Hospital (formerly Munn House), by A. J. Davis, 1850, in Italian villa style. – Grace Episcopal Church, by Upjohn, 1856–60, Neo-Gothic; entrance tower, by his son Richard M. Upjohn, added 1870. – Munson-Williams-Proctor Institute, in a noteworthy building designed by Philip Johnson in 1960; contains modern sculpture, American painting of the 18th–20th century, and European and American prints.

White Plains. Washington's Headquarters (Miller House), ca. 1738. – In North White Plains is Hammond House, ca. 1719.

Yonkers. Philipse Manor Hall, stone wing ca. 1682, brick wing ca. 1745, with rococo decoration of ca. 1760; contains portraits of the presidents of the United States as well as other paintings and furniture. – Sherwood House, ca. 1750, a colonial farmhouse; restored.

Youngstown. Old Fort Niagara, including the "Castle," built 1726 by Gaspard de Léry in the style of a French manor house; restored 1934. In the Castle are a superb chapel, officers' quarters, and a great council chamber.

BIBLIOG. L. G. Sellstedt, Art in Buffalo, Buffalo, 1910; A. W. Brunner and C. D. Lay, Studies for Albany, New York, 1914; I. N. Phelps Stokes, The Iconography of Manhattan Island, 1498–1909, 6 vols., New York, 1915–28 (repr. 1967); F. P. Whiting, An Architectural Monograph on Cooperstown (White Pine Ser., IX, 3), St. Paul, 1923; H. D. Eberlein, Manor Houses and Historic Homes of Long Island and Staten Island, Philadelphia, 1928; H. W. Reynolds, Dutch Houses in the Hudson Valley before 1776, New York, 1929; E. W. Root, Philip Hooker, New York, 1929; H. W. Reynolds, Dutchess County Doorways, New York, 1931; FWP, Rochester and Monroe County, Rochester, 1937; FWP, Albany Guide, Albany, 1938; FWP, New York Panorama, New York, 1938; I. N. Phelps Stokes, New York Past and Present: Its History and Landmarks, 1524–1939, New York, 1939; FWP, New York: A Guide to the Empire State, New York, 1940; T. C. Bannister, Early Town Planning in New York State, JSAH, III, 1–2, 1942, pp. 36–42; H. D. Eberlein and C. van D. Hubbard, Historic Homes of the Hudson Valley, New York, 1942; A. Tully, Era of Elegance, New York, 1942; J. J. Vrooman, Forts and Firesides of the Mohawk Country, New York, Philadelphia, 1943 (2d ed., Johnstown, N.Y., 1951); C. F. Schmidt, Cobblestone Architecture, Rochester, 1944; C. F. Schmidt, Greek Revival Architecture in the Rochester Area, Scottsville, N.Y., 1946; W. Weisman, Who Designed Rockefeller Center?, JSAH, X, 1, 1951, pp. 11–22; L. Arnaud, The Tall Building in New York in the 20th Century, JSAH, XI, 2, 1952, pp. 15–18; A. Burnham, The New York Architecture of Richard Morris Hunt, JSAH, XI, 2, 1952, pp. 9–14; T. Hamlin, The Rise of Eclecticism in New York, JSAH, XI, 2, 1952, pp. 3–8; H. Jackson, New York Architecture: 1650–1952, New York 1952; J. A. Kouwenhoven, The Columbia Historical Portrait of New York, Garden City, N.Y., 1953; W. Weisman, New York and the Problem of the First Skyscraper, JSAH, XII, 1, 1953, pp. 13–21; R. M. Rounds, Octagon Buildings in New York State, Cooperstown, N.Y., 1954; L. Mumford, From the Ground Up, New York, 1956; G. Peterich, Cobblestone Architecture of Upstate New York, JSAH, XV, 2, 1956, pp. 12–18; Municipal Art Society of New York, Index of Architecturally Historic Structures in New York City, New York, 1957; The Corning Glass Center, Corning, 1958; A. and C. F. Schmidt, Architecture and Architects of Rochester, N.Y., Rochester, 1959; The Solomon R. Guggenheim Museum: Architect, Frank Lloyd Wright, New York, 1960; C. Lancaster, Old Brooklyn Heights, Rutland, Vt., 1961; A. Burnham, New York Landmarks, Middletown, Conn., 1963; M. E. Dilliard, An Album of New Netherland, New York, 1963; S. L. Faison, Art Tours and Detours in New York State, New York, 1964; A. L. Huxtable, The Architecture of New York, I, Garden City, N.Y., 1964; C. A. Lewis, Historical Long Island, Westhampton Beach, N.Y., 1964; P. Seitlin, New York: People and Places, New York, 1964.

New Jersey. First settled by the Dutch and then the Swedes, the territory was ceded to the English in 1664. In 1676 the province was divided into East and West Jersey; in 1702 they were united. One of the 13 original colonies, New Jersey was admitted to the Union in 1787, and Trenton became the capital in 1790.

Burlington. Bishop Doane's House, by John Notman, 1836, in Italian villa mode. – St. Mary's Church, by Richard Upjohn, 1846–54.

Hackensack. Abraham Ackerman House, 1704, fine example of Dutch colonial stone architecture. – Terhuen House, ca. 1709, Dutch colonial. – Nearby, in River Edge, is the Jacobus Demarest House, before 1720, Dutch colonial.

Holmdel. Hendrickson House, ca. 1715, with period furnishings.

Middletown. Marlpit Hall, 1684, a Dutch colonial farmhouse enlarged in 1725, with period furnishings.

Morristown. Ford Mansion, 1772–74, Washington's headquarters during the winter of 1779–80.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Newark. Trinity Cathedral, 1742–43; rebuilt 1809–10; portico and steeple added later. – County Courthouse, by Cass Gilbert (1859–1934), with Egyptian details. – Newark Museum, with painting and sculpture (principally American), Oriental art, and minor arts.

New Brunswick. Ross Hall, ca. 1729 (razed). – Lowe House, ca. 1741. – Field House, ca. 1743. – Buccleuch Mansion, mid-18th century.

Perth Amboy. Governor's Palace (now a hotel), 1764.

Princeton. "Morven," central section ca. 1701; west wing possibly earlier; east wing mid-18th century; later restorations and changes; very early use of Palladian concepts in America. Garden of 1767 based on Alexander Pope's garden at Twickenham, England. – Princeton University, Nassau Hall, by William Shippen and Robert Smith, 1754–56; cupola and other alterations by John Notman, 1855. – Princeton Theological Seminary, Alexander Hall, by John McComb, 1815–17. – Princeton University, Graduate College (I, PL. 88), by Cram & Ferguson, completed 1913; Neo-Gothic. – Princeton University, Art Museum, with American and European painting, prints and drawings, Chinese painting, and ceramics.

Ridgefield. Old Dutch Reformed Church (now English Neighborhood Church), 1793.

Swedesboro. Trinity Church, 1733, in Swedish style; rebuilt 1786.

Tennent. Old Tennent Church, 1751.

Trenton. Trent House, 1719, a brick mansion in Queen Anne style; restored 1934–36; with early American furniture. – Friends' Meetinghouse, 1739; later enlarged. – St. Michael's Protestant Episcopal Church, 1747–48; rebuilt 1819; later enlarged and remodeled – Old Barracks, 1758–59, a beautiful U-shaped stone building; restored 1917; contains early American furniture, silver, paintings, china, and costumes. – State House, originally built 1792–94; restored by John Notman in 1848; after a fire in 1885 the front portion was replaced in 1889 by Lewis H. Broome in French Renaissance style; interior additions in 1891, 1904. – Old Masonic Lodge Building, 1793. – First Presbyterian Church, 1841.

West Orange. Entrance lodge, 1857, and cottage, ca. 1860, in early romantic suburb of Llewellyn Park, both by A. J. Davis.

BIBLIOG. L. L. Flockhart, Art and Artists in New Jersey, Somerville, N.J., 1938; FWP, New Jersey: A Guide to Its Present and Past, New York, 1939; V. L. Collins, Princeton Past and Present, Princeton, 1945; A. H. Bill et al., A House Called Morven: Its Role in American History, 1701–1954, Princeton, 1954; L. de Lagerberg, New Jersey Architecture: Colonial and Federal, Springfield, Mass., 1956; W. H. Gerdts, Jr., Painting and Sculpture in New Jersey, Princeton, 1964; A. Gowans, Architecture in New Jersey, Princeton, 1964.

Pennsylvania. The first settlement was made in 1643 by Swedish colonists at Tinicum Island near Chester. William Penn received the grant of Pennsylvania in 1681, and the colony was settled by the Quakers and then by the Mennonites, the Moravians, and the Scotch-Irish. One of the original 13 colonies, the state was admitted to the Union in 1787. Harrisburg has been the capital since 1812.

Allentown. Trout Hall, 1770; restored. – Allentown Art Museum, with Italian Renaissance, Flemish, Dutch, and German painting. – In the environs are the Troxell House (Trojan Farm), 1744; the Troxell-Steckel House, 1755–56, a fine example of German medieval architecture; and the George Taylor House, 1768, with handsome woodwork.

Ambridge. Old Economy, consisting of the 17 remaining buildings of the Harmony Society, 1824–32, including the 45-room Great House of the leader, the gambrel-roofed Feast Hall, the Grotto in the gardens, and shops and dwellings.

Bear Run. "Falling Water" (FIG. 862; I, PL. 91), by Frank Lloyd Wright, 1936, a cubistic treatment of cantilevered balconies over a waterfall.

Bethlehem. Buildings of the original Moravian settlement, including the Gemein Haus (Community House), 1742–43, a large log structure; Sisters' House (now a museum), 1744, with wings added 1752 and 1773; Bell House, 1746, with additions of 1748 and 1749; Brethren's House (now a museum), 1748, a large, plain stone structure renovated in 1814 and restored 1959–61; Old Chapel, 1751; Widows' House, 1768, with addition of 1794; and Central Moravian Church, by John Cunius, 1806. – Many fine Victorian mansions, including the Robert H. Sayre House, 1857, in Neo-Gothic style, later altered; Packer Hall (now Lehigh University Center), by Edward T. Potter, 1866, in Neo-Gothic style; the George H. Meyers and Francis Weiss houses, 1870s, in Italian villa style; and the Charles M. Dodson House, 1874, with fine stained-glass windows. – Cathedral Church of the Nativity, by Edward T. Potter, 1863; enlarged by C. M. Burns 1884–87; tower added 1899. – Lehigh University Art Galleries, with contemporary American and French painting, prints, Chinese porcelain, and glassware.

Brownsville. St. Peter's Church, ca. 1850, a small masterpiece of Neo-Gothic stonework.

Carlisle. Hessian Guardhouse (now a museum), 1777. – Dickinson College, "Old West," by Benjamin Latrobe, 1802–03.

Chester. Courthouse, 1724, very English in style. – Nearby, in Upland, is the Caleb Pusey Home, 1683; restored 1963.

Doylestown. Mercer Museum, a unique reinforced-concrete structure built by Dr. Henry C. Mercer between 1913 and 1916, contains an important collection of tools and machines of the days before steam power.

Elkins Park. Beth Sholom Synagogue, by Frank Lloyd Wright, 1956.

Ephrata. Ephrata Cloister, consisting of the surviving buildings of a Seventh-Day German Baptist community erected between 1735 and 1749: the Saron (Sisters' House), Saal (Chapel), Almonry, founder's log cabin, and three cottages. The buildings are in the medieval style reminiscent of the German architecture of the community's motherland. A later building, the Academy, was erected in 1837.

Erie. Perry Memorial House, 1809. – Old Custom House (now Erie County Historical Society), by William Kelly, 1839, in Greek revival style. – St. Luke's Evangelical Lutheran Church, 1844, Egypto-Greek.

Gettysburg. Gettysburg College, "Old Dorm," by John C. Trautwine, 1835–38, in Greek revival style.

Harrisburg. State House, by Joseph M. Huston, 1898–1906, inspired by the U.S. Capitol; remodeled.

Horsham. "Graeme Park," 1721–22, a stone country house in north European style; interior, remodeled ca. 1765, has beautiful Georgian woodwork.

Lancaster. Trinity Lutheran Church, 1729. – St. James's Episcopal Church, 1754. – "Rock Ford," 1793–94, a brick Georgian mansion. – Old City Hall, 1795, a fine example of colonial architecture. – "Wheatland," 1828, home of President Buchanan, with furniture, china, and silver belonging to him. – Franklin and Marshall College, 1854–55, one of the few remaining examples of early "collegiate Gothic." – Near Lancaster is the Pennsylvania Farm Museum of Landis Valley, consisting of over 10 buildings housing objects illustrating rural Pennsylvania farm and folk life.

Lewisburg. Bucknell University, College Building, by Thomas U. Walter, 1848–59, in Greek revival style.

Merion. Barnes Foundation, with impressionist painting, Pennsylvania furniture, and medieval hardware. – Buten Museum of Wedgwood, with Wedgwood ceramics.

Millbach. Georg Müller House, 1752, an excellent example of a German Renaissance farmhouse; interiors are in Philadelphia Museum of Art.

New Kensington. Aluminum City Housing, community plan and individual structures by Walter Gropius and Marcel Breuer, 1941; excellent use of terraced site with unified structural design.

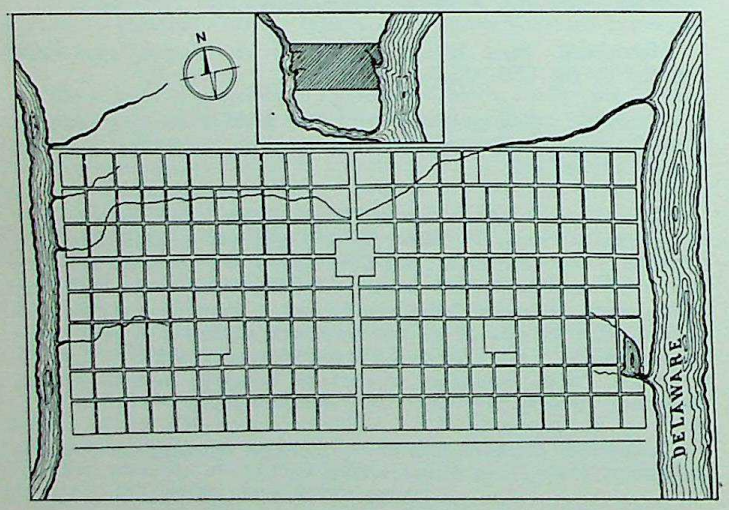
Paoli. "Waynesborough," 1724 and 1740, a fine colonial stone house. – In the environs are St. Peter's Church, in Great Valley, 1744, and Diamond Rock School, in Chester Valley, 1818, a well-preserved octagonal structure.

Philadelphia. In the 18th century the city was the largest one in the American colonies and the second largest city in the British Empire, surpassed only by London. Philadelphia was the capital of the United States from 1790 to 1800. An extensive urban renewal

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

program has been under way since the 1950s (PLS. 151, 177). Germantown, originally a separate township, was consolidated with Philadelphia in 1854; it has many fine colonial houses (see below).

Secular buildings: Letitia Street House (in Fairmount Park), 1703–15, plan based on Swedish type. – "Cedar Grove" (in Fairmount Park), ca. 1721. – Group of buildings in Independence Square: Independence Hall (originally the State House), by Andrew Hamilton, 1732–45, tower and steeple 1750–51, steeple rebuilt by William Strickland in 1828, one of the most beautiful Georgian public buildings in the country; Philosophical Hall, 1785–89; Congress Hall, 1787–89, altered by L'Enfant in 1800; and City Hall, 1789–91. – Pennsylvania Hospital: east wing, by Samuel Rhoads, 1755–56; matching west wing, designed by Rhoads, 1798; central pavilion, 1794–1805, on a revised, Adamesque scheme. – "Woodford" (in Fairmount Park; I, PL. 77), 1756, a late Georgian house. – "Mount Pleasant" (in Fairmount Park), 1761–62, a small Georgian house with hipped roof topped by a balustraded roof deck. – Powel House, 1768; interiors are in Metropolitan Museum of Art and Philadelphia Museum of Art. – Carpenters' Hall, by Robert Smith, 1768–70. – Dilworth-Todd-Moylan House, ca. 1775. – "The Woodlands," 1787–89, very Adamesque plan, with Tuscan portico; stone Anglo-Palladian stable. – First Bank of the United States (also called the Girard Bank), by Samuel Blodgett, 1793–98, modeled on the Royal Exchange in Dublin. – Head house of the Old Second Street Market, ca. 1803. – Fairmount Waterworks, probably by Robert Mills, with Frederick Graff as engineer, 1819–20. – Second Bank of the United States (now offices), by William Strickland, 1819–24, modeled on the Parthenon. – Eastern State Penitentiary, by John Haviland, 1823–35, planned on the radial cellular system. – Pennsylvania Institution for the Deaf and Dumb (now Philadelphia Museum School of Art), by Haviland, 1824–25. – Old Franklin Institute (now Atwater Kent Museum), by Haviland, 1825–27. – Naval Asylum (now U.S. Naval Home), by Strickland, 1826–33, on the order of the Temple on the Ilissos in Athens. – Merchants' Exchange (I, PL. 80), by Strickland, 1832–34; the lantern is modeled on the choragic monument of Lysikrates in Athens. – Girard College, Founders' Hall, by Thomas U. Walter, 1833–47, a great temple with interior domes. – Preston Retreat (Preston Maternity Hospital), by Walter, 1837–40; enlarged 1909. – Philadelphia Athenaeum, by John Notman, 1845–47, in the Italian Renaissance mode of Sir Charles Barry. – American Academy



Philadephia, plan of the city in 1682, after the published version of the original made by William Penn's surveyor, Thomas Holme. Inset, the geographical position of the plan.

of Music, by Napoleon LeBrun and Gustavus Runge, 1857, based on the Teatro alla Scala in Milan. – Group of buildings at the University of Pennsylvania: College Hall, by Thomas W. Richards, 1871–72, "collegiate Gothic" in the manner of Viollet-le-Duc; University Museum, by Wilson Eyre, Jr., Frank Miles Ray & Bro., and Cope & Stewardson, west court 1893–99, rotunda 1912, middle section 1926, massive Italian scheme; Little Quad, by Cope & Stewardson, begun 1895, leading use of relatively correct English "collegiate Gothic"; Richards Medical Research Building, by Louis Kahn, completed 1960. – Pennsylvania Academy of Fine Arts, by Frank Furness, 1872–76. – Provident Life and Trust Building (I, PL. 82), also by Furness, 1879, fine Neo-Gothic. – City Hall, by John McArthur, Jr., 1874–1901, somewhat inspired by the French Renaissance. – Ridgway Library (Library Company of Philadelphia), by Addison Hutton, ca. 1876, well-detailed temple. – Girard Trust Building, by McKim, Mead & White, 1908. – Philadelphia Museum of Art, by Horace Trumbauer, C. L. Borie, and C. C. Zantzinger, 1919–27, a great Greek temple. – Rodin Museum, by Paul Cret and Jacques Gréber, 1920s, in the French classical manner. – Naval Hospital, 1931–35, as architecturally distinguished as any government building between the wars. – Philadelphia Savings Fund Society Building (I, PL. 89), by Howe & Lescaze, 1932, one of the great modern skyscrapers. – Penn Center, a complex including offices, hotels, and apartments, completed 1964.

Churches: Gloria Dei (Old Swedes) Church, 1698–1700; wings 1705; tower ca. 1733; later alterations. – Christ Church, by Dr. John Kearsley, 1727–44; tower and spire, probably by John Harrison, 1752–55; spire reconstructed by Robert Smith 1771. – St. Peter's Protestant Episcopal Church, by Robert Smith, 1758–61; tower in Gothic style added by William Strickland in the early 19th century. – St. Mary's Roman Catholic Church, 1763. – Arch St. Meetinghouse, by Owen Biddle, 1803–05, extended 1810–11, the largest Quaker meetinghouse in the world. – St. Stephen's Church, by Strickland, 1822–23; Neo-Gothic. – St. Andrew's (now St. George's) Church, by John Haviland, 1822–23, details from Temple of Dionysos at Teos near İzmir in Turkey. – Third Presbyterian Church, 1837. – Cathedral of SS. Peter and Paul, Palladian plans by Napoleon Le-Brun from original scheme of Fathers Mariano Maller and John B. Torratore, built 1846–64; final supervision by John Notman. – St. Mark's Church, by Notman, 1848–51, based on plans by R. C. Carpenter; later Lady Chapel. – Keneseth Israel Synagogue, by Louis C. Hickman and Oscar Frotcher, 1892, a great medieval campanile thrusting out of an Italian Renaissance church. – Henry S. Frank Memorial Synagogue, by Arnold Brunner, 1901, inspired by the excavated synagogue at Kfar Birim (cf. VIII, PL. 334).

Germantown: "Wyck," first unit ca. 1690, second unit ca. 1720, later connected; remodeled by Strickland in 1824. – Stenton Mansion, 1728, in early Georgian style. – "Grumblethorpe," 1744, a Georgian stone house. – Green Tree Inn (Pastorius House), 1748, a typical example of the Pennsylvania style. – Public School of Germantown (Germantown Academy), 1761. – "Cliveden" (Chew Mansion), 1763–64, a notable late Georgian residence. – Johnson House, 1765–68, a Georgian stone residence. – Morris House, 1772–73, with period furnishings.

Museums: Philadelphia Museum of Art, with Romanesque and Gothic architectural ensembles, European and American period rooms, European and American painting and sculpture from the 13th century to the present, Oriental art, prints and drawings, ceramics, glass, textiles, and tapestries. – Rodin Museum (X, PL. 216), administered by the Philadelphia Museum of Art, with sculpture and drawings by Auguste Rodin. – Pennsylvania Academy of the Fine Arts, with American paintings and sculpture. – University of Pennsylvania, University Museum, with ethnological and archaeological collections from the Americas, the ancient world, Near and Far East, Africa, and Oceania.

Pittsburgh. Allegheny County Courthouse and Jail (I, PL. 83), by Henry Richardson, 1884–88, in Romanesque style, one of Richardson's masterpieces. – East Liberty Presbyterian Church, by Cram & Ferguson, 1931–35, boldly Neo-Gothic. – Frank House (VII, PL. 82), by Walter Gropius, 1939. – Alcoa Building, by Harrison & Abramovitz, 1952. – Civic Auditorium, completed 1961, with the world's largest retractable dome. – Carnegie Institute, Department of Fine Arts, with American and European painting, prints, drawings, sculpture, and minor arts.

Pottstown. "Pottsgrove," 1752, an imposing stone country house, with period furnishings. – Nearby, in Baumstown, is the Daniel Boone Homestead, ca. 1750, with a two-story stone house, a bank barn, and a blacksmith shop.

Prospect Park. Morton Homestead, a hewn-log construction of Swedish type, consisting of two units, the original portion of 1654 and the second portion of 1698, connected ca. 1806.

Reading. Trinity Lutheran Church, 1793, in Georgian style. – Berks County Jail, by John Haviland, 1846, in Tudor style. – Reading Museum and Art Gallery, with early American and Hudson River School painting, Pennsylvania folk art, and American Indian relics. – Near Reading, at Womelsdorf, is the Conrad Weiser Home, 1729, enlarged in 1751, and stone springhouse.

Somerfield. Great Crossing Bridge, built by Kinkead, Beck & Evans, 1818, the greatest of the remaining early-19th-century bridges.

Trappe. Augustus Lutheran Church, conceived by Henry Muhlenberg and built 1743–45; interior renovated 1795. Brumbaugh (1933) states that this is "the most distinctively Germanic church in Pennsylvania."

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Washington Crossing. Thompson-Neely House, 1702; additions of 1757, 1788. – Old Grist Mill, 1740. – Old Ferry Inn, 1757; later enlarged.

West Chester. David Townsend House, first section built ca. 1790; second section 1830; third section 1849. – First Presbyterian Church, by Thomas U. Walter, 1832–34, apparently inspired by J. F. Chalgrin's St-Philippe-du-Roule in Paris; remodeled 1862. – National Bank of Chester County and Trust Company, by Walter, 1835–37, with details from James Stuart and Nicholas Revett's *Antiquities of Athens*. – Chester County Prison, by Walter, 1836–40, in the manner of C. N. Ledoux. – Chester County Courthouse, by Walter, 1846–47, a cast-iron structure that was sheathed with stone in 1859; later additions. – Nearby, in Dilworthtown, is the Brinton House, 1704; restored 1954.

York. Plough Tavern, 1740s, medieval Germanic half-timber construction; restored. – Gates House, ca. 1751–54; restored. – Quaker Meetinghouse, 1766.

Bibliog. W. H. Egle, Draughts of the Proprietary Manors in the Province of Pennsylvania . . ., Harrisburg, 1895; H. M. M. Richards et al., Report of the Commission to Locate the Site of the Frontier Forts of Pennsylvania, 2 vols., Harrisburg, 1896; F. Cousins and P. M. Riley, The Colonial Architecture of Philadelphia, Boston, 1920; J. Jackson, Early Philadelphia Architects and Engineers, Philadelphia, 1923; A. M. Archambault, ed., A Guide Book of Art, Architecture and Historic Interests in Pennsylvania, Philadelphia, 1924; J. Hergesheimer, From an Old House, New York, 1926; L. and J. Bush-Brown, Portraits of Philadelphia Gardens, Philadelphia, 1929; E. Raymond, Early Domestic Architecture of Pennsylvania, New York, 1931; P. B. Wallace, Colonial Houses, Philadelphia: Pre-Revolutionary Period, New York, 1931; G. E. Brumbaugh, Colonial Architecture of the Pennsylvania Germans, Proc. Pa. German Soc., XLI, 2, 1933, pp. 1–60; A New House by Frank Lloyd Wright on Bear Run, Pa., New York, 1938; FWP, Pennsylvania: A Guide to the Keystone State, New York, 1940; T. F. Hamlin, Some Greek Revival Architects of Philadelphia, Pa. Mag. of H. and Biog., LXV, 1941, pp. 121–45; G. A. Howland, Reconstructional Problems Associated with the Moravian Buildings in Bethlehem, Tr. Moravian H. Soc., XIII, 1944, pp. 175–280; Historic Philadelphia from the Founding until the Early 19th Century, Tr. Am. Philosophical Soc., N.S., XLIII, 1953, pp. 1–333; T. B. White, ed., Philadelphia Architecture in the 19th Century, Philadelphia, 1953; H. E. Dickson, 100 Pennsylvania Buildings, State College, Pa., 1954; G. C. Lindsay, Athens on High Street: The Architectural Works of Thomas U. Walter in West Chester, Pa. (thesis), Newark, Del., 1955 (unpub.); H. M. Tinkcom, M. B. Tinkcom, and G. M. Simon, Historic Germantown from the Founding to the Early Part of the 19th Century: A Survey of the German Township, Philadelphia, 1955; G. L. Hersey, Thomas U. Walter and the University at Lewisburg, JSAH, XVI, 1957, pp. 20–24; G. M. Simon, Some Account of the Singular Beginnings of Philadelphia, Philadelphia, 1957; J. D. van Trump, The Romanesque Revival in Pittsburgh, JSAH, XVI, 3, 1957, pp. 22–29; G. B. Tatum, Penn's Great Town: 250 Years of Philadelphia Architecture Illustrated in Prints and Drawings, Philadelphia, 1961; G. S. Leste, Historic Heart of Lancaster, Lancaster, 1963; A. Bendiner, Bendiner's Philadelphia, New York, 1964; F. S. Klein, Old Lancaster, Lancaster, 1964; S. Lorant, Pittsburgh, Garden City, N.Y., 1964; J. J. Stoudt, Early Pennsylvania Arts and Crafts, New York, 1964.

Delaware. The Dutch made the earliest settlements in 1631, but the first permanent settlement was made by the Swedes in 1638 at Fort Christina (present-day Wilmington). The colony was captured by the Dutch in 1655 and by the English in 1664. Delaware, one of the 13 original colonies, was admitted to the Union in 1787. Dover became the capital in 1777.

Dagsboro Hundred. Prince George's Chapel, ca. 1717; enlarged ca. 1750; with a barrel vault and 17th-century details in unpainted wood.

Dover. The House on the Green, 1728, one of the beautiful brick houses that border the town green. – Old State House, 1787–92; later additions and remodeling. – Old Presbyterian Church (now a museum), 1790; restored. – Near Dover is the John Dickinson Mansion, 1740, in Georgian style; wings added 1752 and 1754; remodeled after a fire in 1804; restored 1956.

Downs Chapel. "Aspendale," 1771, notable example of an early brick country house.

Middletown. St. Anne's Episcopal Church, 1768, with excellent interior woodwork and a great triple-decker pulpit.

New Castle. Plan and many structures preserved from 17th, 18th, and early 19th centuries. – Courthouse (formerly the State House), originally built ca. 1676; main building 1708; wings 1767; later changes. – Immanuel Church, 1703–06; reworked to present aspect by William Strickland 1820–22; later changes. – Presbyterian Church, 1707; later changes. – George Read II House, 1791–1801, in Federal style. – Old Academy, 1798–1811. – Town Hall, 1823.

Odessa. David Wilson Mansion (now a museum), rear wing ca. 1747; main section, 1769, in Georgian style; restored. – Corbit-Sharp House (now a museum), 1772–74, a fine example of Delaware Valley brick architecture. – Near Odessa is the Old Drawyers' Church, 1773.

Wilmington. Holy Trinity (Old Swedes) Church, 1698–99; porches 1750–51; tower 1802; restored 1899. – First Presbyterian Church (now Colonial Dames House), 1740. – Old Brandywine Academy, 1796. – Old Town Hall (now Delaware Historical Society), by Peter Bauduy, 1798. – Old Bank of Delaware (now Delaware Academy of Medicine), 1816; later changes. – Wilmington Public Library, by Alfred M. Githens and Edward L. Tilton, 1923. – Wilmington Society of the Fine Arts, Delaware Art Center, with Pre-Raphaelite painting, American painting, and drawings. – Hagley Museum, housed in a stone textile mill of 1814, with exhibits of the industrial history of the United States. On the Museum grounds are over 20 stone mill buildings from the early 19th century and the Du Pont family residence, which was erected in 1803.

Winterthur. Henry Francis du Pont Winterthur Museum, located in the founder's ancestral home of 1839 and enlarged in 1927 and 1956, with 125 period rooms dating from 1640 to 1840 and containing American furniture, metalwork, ceramics, glassware, textiles, and paintings as well as Oriental export porcelain made for American use and English china.

Bibliog. G. F. Bennett, Early Architecture of Delaware, Wilmington, 1932; FWP, New Castle on the Delaware, New Castle, 1936; B. M. Wootten, New Castle, Delaware: 1651–1939, Boston, 1939; M. T. Clemons, Wilmington: Wide is the City, Wilmington, 1947; FWP, Delaware: A Guide to the First State (ed. J. Eckmann), 2d ed., New York, 1955; H. D. Eberlein and C. van D. Hubbard, Historic Houses and Buildings of Delaware, Dover, 1962.

Maryland. The first settlement was made in Saint Marys City in 1634, which was the capital of the colony until 1694, when Annapolis became the capital. Maryland was one of the 13 original colonies, and was admitted to the Union in 1788.

Annapolis. Settled in 1649, the city was originally called Providence, then Anne Arundel Town. Annapolis has many homes in the Georgian style dating from the early Colonial and Federal periods. Characteristic of these residences are the brick chimneys, which were required by law. Noteworthy are: Shaw House, 1720, with a unique Scottish stairway of 1745; Brice House, ca. 1740, with later additions; Peggy Stewart House, 1760–72; Chase-Lloyd House, by William Buckland, 1769–74, an elegant three-story structure; and Hammond-Harwood House (now a museum), by Buckland, 1773–74, a fine Georgian mansion. – McDowell Hall (now the administration building of St. John's College), begun by Simon Duff in 1744; completed in 1784. – State House, possibly by Joseph H. Sharpe, 1772–80; dome and cupola replaced 1785–93; later restorations and annex; the woodwork in the Old Senate Chamber is attributed to William Buckland. Next door is the Council Chamber, ca. 1694–95.

Anne Arundel County. "Tulip Hill," 1756, a Georgian mansion, with Chinese ceramics and sculpture. – "Whitehall," ca. 1764–65, with a giant portico in temple form, perhaps inspired by Thomas Jefferson's first design for Monticello; wings added ca. 1793.

Baltimore. Secular buildings: "Homewood," perhaps by William Thornton, 1801–03, small country house in Adam style with superb detailing. – University of Maryland, College of Medicine, by Robert C. Long, Sr., 1812, brilliant use of the Roman Pantheon scheme in which a great domed room formed the anatomical theater. – House at 107 West Monument St. (X, pl. 274), early 19th century. – McKim Free School, by William Howard and William Small, 1822, after the Theseion in Athens. – Ross Winans House, 1882, by McKim, Mead & White, inspired by the Italian Romanesque. – Assembly Building, Glenn L. Martin Company, designed by Albert Kahn, 1937. – One Charles Center, by Mies van der Rohe, 1961–64, an office tower in Charles Center.

Churches: German Evangelical Reformed Church ("Otterbein Church"), 1784; apse added later. – Cathedral of the Assumption (I, pl. 81), by Benjamin Latrobe, 1805–21, one of the finest neoclassic churches; towers 1832; portico (closely related to the Erechtheion in Athens) added by John H. B. Latrobe, 1863; eastern extensions 1879 and 1890. – Chapel of St. Mary's Seminary, by Maximilian Godefroy, 1806–07, in Neo-Gothic style. – Unitarian Church, by Godefroy, 1817–18, showing influences of C. N. Ledoux; interior remodeled in 1916. – St. Alphonsus' Church, by Robert C. Long, Jr., 1842, imaginative brick Neo-Gothic. – Franklin Street Presbyterian Church, also by Long, 1844, a fine Tudor-style building. – Grace and St. Peter's Church, by John R. Niernsée, 1850–52, fine English Neo-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Gothic. – St. Paul's Church, by Richard Upjohn, 1852–56, an Italianate design. – Greenmount Cemetery Mortuary Chapel, by Niernsée and John C. Nelson, 1856, Neo-Gothic. – First Methodist Church (now Lovely Lane Methodist Church), by McKim, Mead & White, 1882–86, massive stonework inspired by Italian Romanesque. – Episcopal Cathedral of the Incarnation, monumental Neo-Gothic scheme by Bertram G. Goodhue, 1920s, of which only the Synod (now the Cathedral) has been built. – Cathedral of Mary Our Queen, designed by Eugene F. Kennedy, Jr., of Maginnis & Walsh, 1957–60, a huge "modern Gothic" structure. – Church of the Redeemer, by Pietro Belluschi, 1958–60, a barnlike addition to a 19th-century country church.

Museums: Walters Art Gallery, with Byzantine and medieval manuscripts, ivories, and enamels, Near Eastern art, Egyptian and classical antiquities, ceramics, and European painting. – Baltimore Museum of Art, with American and European painting and sculpture from the Renaissance to the present, prints, silver, and period rooms. – Peale Museum, housed in a building of 1813, with paintings by the Peale family and local artists and contemporary paintings. – Maryland Historical Society, housed in the Enoch Pratt residence of 1847, with American portraits, furniture, silver, and costumes.

California. St. Andrew's Episcopal Church, by Richard Boulton, 1767, with a handsome Palladian façade.

Dorchester County. Trinity Church on Church Creek, built before 1690, a typical example of the brick "Tidewater" church.

Monkton. Breezewood Foundation, with collection of Siamese sculpture, principally religious.

Prince Georges County. "Montpelier," 1751, in Georgian style; wings added ca. 1770.

Saint Marys County. "Cremona," 1819, a large brick mansion with a noteworthy hanging double stairway.

Talbot County. "Troth's Fortune," late 17th century, a small manor house with an engaged staircase tower on the rear façade. – "Boston Cliff," early 18th century, a small manor house with 18th-century English and American furniture.

Wye. Wye House, 18th century, with an orangery dating from this period.

BIBLIOG. S. Earle, The Chesapeake Bay Country, Baltimore, 1923; H. C. Forman, Early Manor and Plantation Houses of Maryland, Easton, Md., Haverford, Pa., 1934; D. Swann, Colonial and Historic Homes of Maryland, 2 vols., Baltimore, 1939; FWP, Maryland: A Guide to the Old Line State, New York, 1940; D. Davis, Annapolis Houses 1706–75, New York, 1947; R. H. Howland and E. P. Spencer, The Architecture of Baltimore: A Pictorial History (ed. W. H. Hunter, Jr.,) Baltimore, 1953; M. L. Radoff, Buildings of the State of Maryland at Annapolis, Annapolis, 1954; H. C. Forman, Tidewater Maryland Architecture and Gardens, New York, 1956; W. H. Hunter, Jr., Robert Cary Long, Jr., and the Battle of Styles, JSAH, XVI, 1, 1957, pp. 28–30; W. H. Hunter, Jr., and C. H. Elam, A Century of Baltimore Architecture, Baltimore, 1957; M. L. Radoff, The County Courthouses and Records of Maryland, I: The Courthouses, Annapolis, Md., 1960; R. L. Alexander, William F. Small: "Architect of the City," JSAH, XX, 1961, pp. 63–77; H. P. Hopkins, Colonial Houses of Annapolis, Md., and Their Architectural Details, Baltimore, 1963.

South Eastern States (Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi). In this area, settled by the Spaniards, English, and French, the towns were often small and the law courts, churches, lading places, and mills were located there. The economy was based on the great plantations. Each plantation had much the aspect of a village, with many buildings, extended families, and servant population.

Even in the most famous of the ideal schemes for settling the area, Sir Robert Montgomery's 1717 plan for the margraviate of Azilia, Ga., based largely on the Locke-inspired Fundamental Constitutions of Carolina, the emphasis was entirely on division into individual farms and estates, and the city so sketchily indicated in the plan was primarily the site of the governmental palace. Although Montgomery's plan reflected the Vitruvian concern for protection against unhealthy air, the central city was provided with streets of apparently equal breadth in both the principal and secondary compass directions, which was not in accord with Vitruvian principles. Montgomery's plan combined an internal nine-square grid (somewhat like that of New Haven) with external radials. The Franco-Italian inspiration of the plan, very clear in the land patterns themselves, was further emphasized by the statue-topped façade indicated for the palace of the margrave. Montgomery's plan, like other Utopian schemes for colonization, did not materialize.

The typical method in which the area gradually acquired some urban aspects, especially along the rivers, is most neatly illustrated by developments along the Mississippi. The Spanish Fort Ferdinand was taken over by the French and became Fort Des Ecores (present-day Memphis, Tenn.). The plan of about 1790 shows that near the port, along the waterway, a town had gradually developed with extensive formal gardens on one side and the fort's own garden and orchard on the others; farther downstream were a hospital and its gardens, a habitation with its outbuildings and gardens, and the site of a projected additional fort. These elements were built over after the 1819 planning of Memphis, but the grid plan of the city recalls somewhat this random placement of formal gardens along the river, with four random-placed open squares for parks, and a large public promenade along the river itself. (The random placement of squares was typical of river-town planning.) Although this type of development was common in the late 18th century, it was already apparent in, for instance, the 1725 map of the Natchez, Miss., area and the 1733 map of the county of Savannah, Ga.

The centers of these settlements were the forts. Some of the residences were also fortified, as in New England, for example, "Mulberry" near Charleston, S.C., of 1714, erected on the fortlike plan of a central block with four strong towers attached at the corners. In fact, Mulberry was one of the three frontier forts in the Indian war of 1715. The finest early American fort plan was probably that of the English Fort Loudoun, Tenn., on the Tennessee River; in the 1757 plan of Fort Loudoun a highly sophisticated use of an advantageous site is evident.

Forts also existed in conjunction with well-established cities by the early 18th century. An extensive grid for the city of Mobile, Ala., was laid out around Fort Louis in 1711. The grid plan of English Charleston, S.C., laid out in 1680, existed within fortified walls in 1715, interestingly very close in pattern to the plan created by the French for New Orleans, La., in 1718.

When relatively large urban settlements were attempted, they were always carefully laid out. The simplest of layouts was that of the regular grid with dimensions based on the length of the surveyor's rod (16½ feet) and chain (66 feet), and this was the dominant approach throughout the period of settlement and growth. Richmond, Va., was laid out essentially on a grid plan in 1737. The grid was used for Alexandria, Va., in 1749, and the same scheme was continued in 1798. Egmont Town on Amelia Island, Fla., was laid out in 1767 as a grid with streets one chain wide, lots one chain by two, and one open square for public purposes, along the river. As the settlers went west they carried the grid with them, and George Rogers Clark planned Louisville, Ky., in 1779 as a grid along the river. Many of the towns on the Mississippi were planned in the same way. Even the Spanish were unable to resist the grid plan, replotting irregular Fernandina, Fla., in 1811 with a regular grid, moving houses to conform to it, and creating a square fronting against the fort on the little peninsula.

Although the surveyor's grid was the dominant form, at least in the number of cities for which it was used, there were notable experiments in urban forms in the South Eastern States, as there were in other parts of the country. Perhaps richest in terms of baroque variety was Williamsburg, the inland capital of Virginia, which, because it was not a port, was laid out in 1699 to display the public buildings to best advantage: at one end of the main street was the handsome edifice of the College of William and Mary and at the other end the Capitol, and the streets radiated out from them to either side to form frames for these settings. In the center of this main street was Market Square, the porticoed Courthouse, the Magazine, and (originally) the Gaol. South of Market Square stood Tazewell Hall, probably the most sumptuous of the private homes. Westward, toward the College, the towered church appeared across the expanse of the widest avenue in the town, the Palace Green, whose northern end was closed by the most magnificent structure in the town, the Governor's House, or "Palace." The whole town was then related to this plan.

Another equally interesting, though in some ways less individual, plan reflecting the care in setting public spaces and structures was that contrived for Savannah, the largest city and chief port of Oglethorpe's colony of Georgia, settled beginning in 1733. The river city was fortified (as it was in the buffer area near the French and Spanish) and was laid out with the use of a repeating pattern of grid-pattern blocks with central squares. The individual unit of the plan was not unusual, but its regular repetition was, and it created a fine framework that was repeated as the city developed; today there are 24 such squares. Governor Oglethorpe liked this plan so well that it was prescribed for Ebenezer and New Ebenezer, both settled in the 1730s. The concept of repeating squares was carried out in a somewhat different general plan at Brunswick, Ga., as late as 1837.

Salem (now part of Winston-Salem), N.C., was laid out in 1765 for the Moravians in a plan combining elements of the Philadelphia

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and Savannah approaches. Middleton Place Gardens outside Charleston, S.C., the oldest landscaped gardens in America, was laid out in a very French manner in 1764–74. Boonesboro, Ky., reflected the German influence from western Pennsylvania in its linear town lots.

The plantation areas of the coastal south were influenced by English and north European fashions, which set the style of life. Thus there was a stronger baroque architectural expression here than in the northern colonies. The rather Danish character (jerkin-head roof, painted stucco exterior, and very plastic paneling and ornament) of St. James's Church, Goose Greek, S.C., of 1708, derives from the fact that it was erected by a group of settlers who had come from Barbados. The north European baroque flavor is seen in the Prince George Winyah Church in Georgetown, S.C., of 1742, and is reflected in the marvelous Brick House of about 1725 at Edisto Island, S.C. Perhaps it is this same influence that accounts for the widespread use of the great gambrel roofs in Princess Anne County, Va., and in Richmond into the 1790s. In isolated instances this bolder manner continued well beyond the introduction of the romantic classic styles, as in St. John's Lutheran Church in Pomaria, S.C., 1809, the Presbyterian Church at Edisto Island, 1831, and the Danish Palladian framework of the Mobile, Ala., City Hall, 1857–58 (originally built as the Market and Armory), which Thomas James spattered with 19th-century Italianate details.

Baroque influences are also apparent in the architecture, particularly the British style. Beginning with the Cupola House of about 1715 in Edenton, N.C., with its overhang, heavy chimneys, and distinctly Jacobean cupola and gable, the south reflected, often in a retarded or provincial way, the English manner. The most Anglo-Palladian of American residences was the Miles Brewton House in Charleston, S.C., built between 1765 and 1769; Ezra Waite of London was the carver and joiner and perhaps the architect. The William Gibbes House of about 1772 in Charleston reflects a similar English influence in the Gothic basement. One of the Hawks family of architects from England designed the first Gothic structure in North Carolina, St. Matthew's Church in Hillsboro, 1815. The finest houses of the great period of Savannah's wealth were designed in a superb Regency manner by the English architect William Jay, who worked in the area from 1817 to 1824. This style was also brilliantly used in public buildings throughout the south by Robert Mills. As late as 1876 the Regency style was used for the First African Baptist Church in Richmond, Va.

Sometimes the English influence came from New England, which sent prefabricated house frames, the design for Davenport House in Savannah, 1815, the workmen for Brumby House in Athens, Ga., 1818, and later the inspiration for the romantic folly of "Longwood" near Natchez, Miss., begun in 1860 and never completed. Georgia's commercial relations with New England must partly explain the copying of Old College at the University of Georgia in Athens from Yale University's Connecticut Hall.

During the first half of the 19th century an extremely wealthy class of planters built extravagant houses that made a regional style of the Greek revival, with elaborate gardens of Continental rather than English inspiration. The Greek revival style was taken up again after the Civil War and is still being used today.

In Florida in the early 20th century Spanish architecture was influential. Addison Mizner and others developed a type of Mediterranean Renaissance in Coral Gables and Palm Beach, and there was even a phase of "Moorish" architecture with fantastic Alhambrian shapes in poured concrete.

Though the South Eastern States have not in general been innovators in the recent development of architecture and the arts in the United States, there have been several notable exceptions. Frank Lloyd Wright's largest single-site grouping, Florida Southern College in Lakeland, Fla., was begun in 1938. The State Fair Arena in Raleigh, N.C., was built between 1951 and 1953 by Matthew Nowicki and William H. Dietrick. Dulles International Airport (XIII, PL. 229), located in Chantilly, Va., was designed in 1958–62 by Eero Saarinen (q.v.).

BIBLIOG. E. R. Denmark, Architecture of the Old South, Atlanta, 1926; L. Mumford, The South in Architecture, New York, 1941; H. C. Forman, The Architecture of the Old South: The Medieval Style, 1585–1850, Cambridge, Mass., 1948; F. R. Stevenson and C. Feiss, Charleston and Savannah, JSAH, X, 4, 1951, pp. 3–9; E. Waugh, The South Builds, Chapel Hill, N.C., 1960; D. W. Hollis, Look to the Rock: 100 Ante-bellum Presbyterian Churches of the South, Richmond, 1961.

Virginia. The first permanent English settlement in America was established at Jamestown in 1607. In 1779 Richmond became the capital city. One of the original 13 colonies, Virginia was admitted to the Union in 1788, seceded in 1861, and was readmitted in 1870.

Alexandria. Christ Church, by James Wren, 1767–73; tower and steeple 1818; later changes. – First Presbyterian Church, 1773–74; later changes. – Stabler-Leadbetter Apothecary Shop, 1792.

Arlington. Custis-Lee Mansion (also known as Arlington House), by James Hadfield, 1802–37, with great portico modeled on the temple at Paestum, Italy.

Berryville. "Berry Hill," ca. 1840, modeled on the Parthenon, flanked by two buildings of temple form.

Burrowsville. In the environs are "Brandon," ca. 1765, a five-part plantation house with beautiful gardens; Willow Hill, 1840, a plantation house with fine lace ironwork; and Brandon Church, 1856.

Charles City. Near here are several notable James River plantations. "Belle Air," ca. 1670, with a fine Jacobean staircase. – "Berkeley," 1726, with terraced boxwood gardens. – "Shirley," ca. 1769, with two-story, pedimented, colonnaded porticoes on the north and south sides. – "Westover," ca. 1730–34, one of the most distinguished Georgian houses in the United States; the wrought-iron entrance gate is outstanding. – "Sherwood Forest," 1780; enlarged by President Tyler in 1842.

Charlottesville. Michie Tavern, 1735. – Courthouse, 1803. – University of Virginia (I, PL. 80), original plan and buildings by Thomas Jefferson, 1818–26; rotunda restored by McKim, Mead & White 1896–98. – Nearby is "Monticello," by Jefferson (q.v.), built in 1769–84 on an Anglo-Palladian scheme; remodeled by Jefferson in the French manner in 1796–1809. – Near Monticello is "Ash Lawn," built by Jefferson in 1798 for President Monroe.

Fairfax. Fairfax County Courthouse, 1800, a late example of the English town-hall type.

Fredericksburg. Many pre-Revolutionary buildings, including "Kenmore," 1752, with exquisite plasterwork ceilings and overmantels, the Rising Sun Tavern, Mary Washington House, and Hugh Mercer Apothecary Shop.

Hanover. Hanover County Courthouse, ca. 1734, an arcaded building.

Hopewell. Appomattox Manor, main part of house dates from 1763; dairy kitchen and smokehouse were built in 1700. – Nearby is Merchant's Hope Church, 1657.

Jamestown. Excavated foundations of 17th-century settlement, including the church tower of 1699, behind which is Memorial Church, by Ralph A. Cram, 1907.

King William. King William County Courthouse, ca. 1734; flanking buildings 1885.

Lancaster. Nearby is Christ Church, 1732, whose superb proportions and architectural details make it the finest church of the colonial period in Virginia.

Lexington. Washington and Lee University, Washington Hall, by John Jordan, ca. 1830. – Virginia Military Institute, by A. J. Davis, 1848–60, in Neo-Gothic style; burned in 1864, it was rebuilt by Davis in 1870–73; rebuilt by B. G. Goodhue in 1914.

Lynchburg. Miller-Claytor House, 1791; restored 1935. – Quaker Meetinghouse, 1798; restored. – Old Courthouse, 1855, in Greek revival style. – Nearby is "Poplar Forest," designed by Thomas Jefferson, 1806–22.

Mount Vernon. The home of George Washington, "Mount Vernon," an early house of unknown date, enlarged on Palladian scheme by Washington 1757–58 and 1773–79; two-story portico added by Washington in 1784–87. – "Woodlawn," by William Thornton, 1802–05, a beautiful five-part mansion. – Pope-Leighey House, by Frank Lloyd Wright, 1940, a Usonian structure with furniture by Wright. – Nearby are Gunston Hall, 1755–58, with interiors by William Buckland, of which the Chinese Chippendale and Palladian rooms are outstanding, and Pohick Church, 1771–72.

Norfolk. St. Paul's Church, 1739. – Myers House, 1792, a brick mansion of the early Federal period. – Old Courthouse (now General Douglas MacArthur Memorial), 1847, in Greek revival style. – Custom House, by Ammi B. Young, 1859, a massive temple form. – Near Norfolk is the Adam Thoroughgood House, ca. 1636–40, a small brick farmhouse, one of the earliest in the country.

Palmyra. Fluvanna County Courthouse, probably by John H. Cocke, 1829–31.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Powhatan. Powhatan County Courthouse, 1849–50, modified from an Asher Benjamin design.

Reston. A "new town," with the master plan by Whittlesey & Conklin, begun 1963 (PL. 164), to be completed in 1980.

Richmond. Poe Museum, ca. 1685–88, the oldest house in the city. – St. John's Church, ca. 1740; addition 1772; steeple early 19th century; later changes. – "Wilton," 1783, a mansion in Queen Anne style. – Masonic Hall, 1785–87. – State Capitol (I, PL. 78), by Thomas Jefferson, assisted by C. L. Clérisseau, 1785–96, modeled on the Maison Carrée (XIII, PL. 245) at Nîmes, France; wings added 1904–06. J. A. Houdon's (q.v.) life-size statue of Washington, 1785, stands in the rotunda. – John Marshall House, 1790. – Wickham-Valentine House (now part of Valentine Museum), by Robert Mills, 1812. – Monumental Church, by Mills, 1812–14, an octagonal structure; tower and details never completed. – White House of the Confederacy (now Confederate Museum), by Mills, 1816–18. – St. Paul's Church, by Thomas S. Stewart, 1843–45, modeled on St. Luke's in Philadelphia. – Medical College of Virginia, "Egyptian Building," by Stewart, 1845. – First African Baptist Church, 1876, a late example of pure Regency design. – Broad Street Railway Station, by John Russell Pope, 1917, in classical style. – Virginia Museum of Fine Arts, with American and European painting, sculpture, and minor arts. – Near Richmond is "Mount Airy" (I, PL. 77), by John Ariss, 1758–62, very Palladian, with façades from James Gibbs's *Book of Architecture* and William Adam's *Vitruvius Scoticus*.

Smithfield. Old Brick Church (I, PL. 74), also known as St. Luke's and as Newport Parish Church, 1682 (modern scholarship rejects the date of 1632), in Gothic style with traceried windows; later changes; restored 1890s.

Stratford. Stratford Hall, ca. 1725–30, in early Georgian style with unique massing in a simplified Vanbrugh manner.

Surry. Near here are Bacon's Castle (I, PL. 74), ca. 1655, in Jacobean style, with decorative end gables and clustered chimneys, and Warren House, 1652.

Talleysville. Nearby is St. Peter's Church, 1701; later changes, including addition of massive tower; one of the few English baroque structures in America.

Williamsburg. This was the capital of the Virginia colony from 1699 to 1779. The city has been restored to its original appearance by Colonial Williamsburg, Inc. There are over 450 preserved, restored, and reconstructed public buildings, residences, churches, taverns, and craft shops, as well as beautiful gardens. The most important buildings are listed here. – College of William and Mary, Wren Building, probably based on a design by Sir Christopher Wren, built on a U-shaped plan with a central block and two wings, one housing the chapel and the other the dining hall. The main block and the dining hall were erected between 1695 and 1702; burned in 1705, they were rebuilt in 1709–16; the chapel wing was added 1729–32. Damaged by fires, the building was rebuilt in 1859 and 1862–69 and restored in 1928–31. Brafferton Hall, 1723, and the President's House, 1732, are part of the College. – The Capitol, 1701–05, an H-shaped building with two apsidal-ended wings; rebuilt in 1751–53 after a fire; burned in 1832; rebuilt in 1928–34. The Council Chamber is magnificently paneled. – Governor's Palace, perhaps designed by Wren, 1706–20, a handsome Georgian mansion; ballroom wing, by Richard Taliaferro, added ca. 1749–51, with a beautiful ballroom and supper room. Burned in 1781, it was reconstructed 1931–34. Formal garden in geometric pattern with boxwood hedges. – Bruton Parish Church, built by James Morris after a plan by the governor, Alexander Spotswood, 1712–17; additions of 1752 and 1755; steeple added 1769; restored. – Powder Magazine, 1714, a fine octagonal brick structure. – Brush-Everard House, 1717. – Raleigh Tavern, ca. 1740; burned 1859; reconstructed. – George Wythe House, by Richard Taliaferro, 1755. – Old Courthouse (houses archaeological exhibit), 1770. – James Semple House, attributed to Thomas Jefferson, ca. 1780. – Abby Aldrich Rockefeller Folk Art Collection, with American painting, sculpture, and minor arts of the late 18th and early 19th centuries. – Near Williamsburg are Warburton House (I, PL. 74), ca. 1680, and Carter's Grove, probably designed by Taliaferro, 1750–53, a plantation house in early Georgian style, with superb interior woodwork by Richard Bayliss and a masterly entrance hall.

Yorktown. Thomas Sessions House (also known as Shield House), ca. 1693. – Old Custom House, 1706; restored 1929–30. – Nelson House (part of York Hall), ca. 1740. – Moore House, before 1768; restored.

BIBLIOG. P. Wilstock, Mount Vernon, Garden City, N. Y., 1916; S. H. Yonge, The Site of Old "James Towne": 1607–98, Richmond, 1926; H. H. Dodge, Mount Vernon, Philadelphia, London, 1932; T. T. Waterman and J. A. Barrows, Domestic Colonial Architecture of Tidewater Virginia, New York, 1932; E. M. Armes, Stratford Hall, Richmond, 1936; H. C. Forman, Jamestown and St. Mary's: Buried Cities of Romance, Baltimore, 1938; M. Rhodes, Landmarks of Richmond: Places to Know and See in the Nation's Most Historic City, Richmond, 1938; FWP, Virginia: A Guide to the Old Dominion, New York, 1940; FWP, Jefferson's Albemarle, Charlottesville, 1941; M. W. Scott, Houses of Old Richmond, Richmond, 1941; R. B. Truett, Lee Mansion, Arlington, Va., New York, 1943; G. C. Mason, Colonial Churches of Tidewater Virginia, Richmond, 1945; D. Davis, S. P. Dorsey, and R. C. Hall, Alexandria Houses, 1750–1830, New York, 1946; A. L. Kocher and H. Dearstyne, Colonial Williamsburg, Williamsburg, 1949; G. M. Moore, Seaport in Virginia: George Washington's Alexandria, Richmond, 1949; J. Donovan, John Jordan: Virginia Architect, JSAH, IX, 3, 1950, pp. 17–19; M. W. Scott, Old Richmond Neighborhoods, Richmond, 1950; M. Nelligan, The Building of Arlington House, JSAH, X, 2, 1951, pp. 11–15; P. Rouse, Jr., The City That Turned Back Time: Colonial Williamsburg's First 25 Years, Williamsburg, 1952; G. W. Johnson, Mount Vernon, New York, 1953; C. E. Hatch, Jamestown, Virginia: The Townsite and Its Story, Washington, D.C., 1957; W. S. Robinson, Jr., Mother Earth: Land Grants in Virginia, 1607–99, Williamsburg, 1957; M. Whiffen, Some Virginian House Plans Reconsidered, JSAH, XVI, 2, 1957, pp. 17–19; J. L. Cotter, Archaeological Excavations at Jamestown Colonial National Historical Park and Jamestown National Historic Site, Va., Washington, D.C., 1958; M. Rawlings, Historical Guide to Old Charlottesville, Charlottesville, 1958; M. Whiffen, The Public Buildings of Williamsburg (Williamsburg Arch. S., I), Williamsburg, 1958; M. Whiffen, The Early County Courthouses of Virginia, JSAH, XVIII, 1, 1959, pp. 2–10; Colonial Williamsburg, Inc., Official Guidebook, 4th ed., Williamsburg, 1960; W. B. O'Neal, Jefferson's Buildings at the University of Virginia, I: The Rotunda, Charlottesville, 1960; M. Whiffen, The 18th Century Houses of Williamsburg (Williamsburg Arch. S., II), Williamsburg, 1960; W. T. Stevens, Virginia House Tour, Charlottesville, 1962; J. S. Rawlings, Virginia's Colonial Churches, Richmond, 1963.

West Virginia. A part of Virginia until the Civil War, West Virginia separated from it in 1861 and was admitted to the Union as a state in 1863. Charleston is the capital city.

Charleston. State Capitol, by Cass Gilbert, completed 1932, in his classical style.

Huntington. Huntington Galleries, with paintings, silver, rugs, tapestries, and prints.

Lewisburg. Old Stone Presbyterian Church, 1796. – Greenbrier County Courthouse, 1837; enlarged 1935.

Moundsville. Grave Creek Mound, an Indian cone-shaped burial mound of the Adena phase, 70 feet high and 320 feet in diameter. The Mound Museum houses an archaeological collection.

Wheeling. First Presbyterian Church, 1831, in classic revival style; multistoried tower and Ionic portico. – First Baptist Church (formerly Old St. Matthew's Church), 1837, in classic revival style. – Oglebay Mansion (now a museum), 1835, a beautiful Greek revival building.

BIBLIOG. J. W. Wayland, Historic Homes of Northern Virginia and the Eastern Panhandle of West Virginia, Staunton, Va., 1937; FWP, West Virginia: A Guide to the Mountain State, New York, 1941; C. J. Milton, Landmarks of Old Wheeling and Surrounding Country: A Record of Post-colonial Wheeling, Wheeling, 1943.

North Carolina. The first permanent settlement was established in 1660 at Albermarle. One of the original 13 colonies, North Carolina was admitted to the Union in 1788, seceded in 1861, and was readmitted in 1868. Raleigh is the capital of the state.

Asheville. Zebulon B. Vance Birthplace, 1790s, a log dwelling with six farm outbuildings. – All Souls' Episcopal Church, by Richard M. Hunt, 1893. – Nearby is Biltmore House, also by Hunt, 1895, in French château style; extensive formal gardens by Frederick Law Olmsted; inside are a Gothic banquet hall and a tapestry gallery.

Bath. St. Thomas's Church, 1734–40; restored. – Buzzard Hotel, ca. 1740. – Palmer-Marsh House, ca. 1744; restored. – Bonner House, ca. 1825.

Carthage. The House in the Horseshoe, ca. 1770, with fine woodwork and handsome carved mantel and cornices.

Chapel Hill. University of North Carolina: "Old East" (a dormitory), 1793–95; Old Library (now Playmakers' Theater), attributed to A. J. Davis, 1850; William Hays Ackland Memorial Art Center, with painting, sculpture, furniture, and minor arts. – Chapel of the Cross, by Francis Hawks, 1842–46, Neo-Tudor.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Charlotte. Mint Museum of Art, by William Strickland, 1836, in Greek revival style; destroyed by fire in 1844; rebuilt on same plan in 1936; contains European and American painting and sculpture from the Renaissance to the present.

Cherokee. Oconalaftee Indian Village, a reconstruction of a Cherokee village of the period 1750 to 1800. Cherokee crafts and activities are demonstrated.

Edenton. Sycamore Plantation, 1660. – Cupola House, ca. 1715, in Jacobean style. – St. Paul's Episcopal Church, 1736. – Edmund Hatch House, ca. 1745. – James Iredell House, ca. 1760. – Chowan County Courthouse, probably by Gilbert Leigh, 1767; considered the finest Georgian courthouse in the south. – Barker House, ca. 1782; restored. – Hayes Plantation, ca. 1789. – Beverly Hall, 1810. – Pembroke Hall, ca. 1840.

Fayetteville. Old Market House (now public library), 1838, in Regency style with Gothic arches.

Greensboro. University of North Carolina, Weatherspoon Art Gallery, with modern European and American painting, sculpture, prints, and textiles.

Halifax. Constitution House, 1758; restored. – "Dutch Colonial" House, ca. 1760; restored. – Colonial Jail, 1764. – Davie Home and Eagle Tavern, pre-Revolutionary buildings.

Hertford. Perquimans County Courthouse, ca. 1731, in Georgian style; additions in 1818.

Hillsboro. St. Matthew's Church, 1815, in Neo-Gothic style. – Orange County Courthouse, by John Berry, 1845, with classical details from Asher Benjamin and Minard Lefever.

New Bern. Haslen-West House, 1761. – Tryon Palace, by John Hawks, 1767–70, in English Palladian style; burned 1798; rebuilt 1957–59. Formal gardens in 18th-century manner. The Palace contains one of the best public collections of English 18th-century furniture in the United States. – John Wright Stanly Home (now public library), also by Hawks, 1780. – Taylor-Ward House, 1792. – Smallwood-Ward House, 1812, in Georgian style. – Richardson House, 1828. – Hollister-Swan House, 1840.

Oldtown. Bethabara Moravian Church, by Frederick W. Marshall, 1788, in Germanic country classicism.

Raleigh. Wakefield House, ca. 1770; restored. – State Capitol, by Ithiel Town and A. J. Davis, 1833–40, in Greek revival style. – Christ Church, by Richard Upjohn, 1848, in English Gothic style, with a detached tower. – State Fair Arena, by Matthew Nowicki and William H. Deitrick, 1951–53, one of the most important modern buildings in the country. – Legislative Building, by Edward D. Stone, completed in 1963, a modern adaptation of the Greek classical style. – North Carolina Museum of Art, with European painting from the early Renaissance to the baroque, American painting, tapestries, bronzes, and minor arts.

Wilmington. Cornwallis House, 1771; restored. – St. John's Art Gallery (originally Masonic Lodge), 1801. – St. James's Episcopal Church, by Thomas U. Walter, 1839, in Neo-Gothic style; vestry contains an *Ecce Homo* taken from a captured Spanish ship in 1748. – Near Wilmington is Orton Plantation, 1725; Greek Doric façade, 1840; set in the midst of beautiful gardens.

Winston-Salem. Old Salem, a Moravian congregation town founded in 1766, was a planned community; 45 of the original buildings still stand, of which 21 have been restored. Noteworthy buildings include the Brothers' House, 1766–69, a half-timbered structure, enlarged in 1786 and later altered; Miksch Tobacco Shop, 1771; Anna Catharina House, 1772; Salem Tavern, 1784; Boys' School, 1794, now housing the Wachovia Museum; Christoph Vogler House, 1797; Home Moravian Church, by Frederick W. Marshall, 1798–1800; and the John Vogler House, 1819. – Belo House, 1849, in Greek revival style, with a two-story colonnade.

Bibliog. FWP, North Carolina: A Guide to the Old North State, Chapel Hill, N.C., 1939; Garden Club of North Carolina, New Bern: Cradle of North Carolina, Raleigh, 1941; F. B. Johnston and T. T. Waterman, The Early Architecture of North Carolina, Chapel Hill, N.C., 1941; M. B. Owen, Old Salem, N.C., Winston-Salem, 1941; FWP, Raleigh: Capital of North Carolina, Raleigh, 1942; J. C. Harrington, Fort Raleigh, 1585, JSAH, XIII, 4, 1954, pp. 27–28; J. K. Rouse, Some Interesting Colonial Churches in North Carolina, Kannapolis, N.C., 1961; J. V. Allcott, Colonial Homes in North Carolina, Raleigh, 1963.

South Carolina. The first permanent settlement was established at Beaufort in 1711 by the English. In 1786 Columbia became the capital city. One of the original 13 colonies, South Carolina was admitted to the Union in 1788, was the first state to secede, in 1860, and was readmitted in 1868.

Beaufort. Hepworth House, 1717. – St. Helena's Episcopal Church, 1724. – Edmund Rhett House (also known as Secession House), 1743, in modified Greek revival style; later changes. – Lafayette Building (Verdier Home), 1795. – Fraser House, 1804. – John Joyner Smith House, ca. 1813, in Greek revival style. – "Marshlands," 1814, in late Adam style. – "Tidewater," 1830s; addition of 1892. – Baptist Church, ca. 1844, in Greek revival style. – Means House, early 1850s, with unusual semicircular entrance steps and portico. – Outside Beaufort is Retreat Plantation, ca. 1740; porch probably added later.

Charleston. Charleston, founded in 1670 by English settlers, is perhaps the most beautiful city in the United States. The city was a great port of the south in the 18th and the early 19th century and preserves much of its 18th-century character.

Secular buildings: George Everleigh House, ca. 1738. – Colonel Othniel Beal House, ca. 1740. – James Hartly House, ca. 1755, in Georgian style. – Thomas Legare House, ca. 1760; Regency piazza added in 1816. – Miles Brewton House, probably by Ezra Waite, 1765–69; brick mansion with superb Palladian pediment and two-story portico. – Old Exchange Building, 1767–71, in Anglo-Palladian style. – Young-Johnson House, ca. 1770. – William Gibbes House, ca. 1772, in Georgian style; redecorated ca. 1800 in Adam style. – John Stuart House, ca. 1772, in Georgian style; woodwork of two principal rooms in Minneapolis Museum of Fine Art. – County Courthouse, by William Drayton, 1788–1800; extension 1941. – Timothy Ford House, ca. 1800, in Adam style. – City Hall (originally a branch of the First Bank of the United States), 1801–02. – South Carolina Society Hall, by Gabriel Manigault, 1804; Greek revival portico by Frederick Wesner added in 1825. – Nathaniel Russell House, 1807–09, one of the best examples of Adam *décor* in the country, with a beautiful flying staircase. – Ashley Hall (now a girls' school), ca. 1816, an outstanding example of a Regency villa. – William Mason Smith House, perhaps by Robert Mills, ca. 1822, in Regency style. – Fireproof Building, by Mills, 1822–27, Mills's most Anglo-Roman building. – College of Charleston, Revolutionary barracks remodeled by William Strickland, 1828; wings, portico, and gate by E. B. White, 1850. – Robert William Roper House, ca. 1838, in Greek revival style. – Market Hall, by E. B. White, 1841, in temple form. – Bennett's Rice Mill, 1844 and later, a mill rendered as a Renaissance palace. – U.S. Custom House, by E. B. White, 1849–79, in Greek revival style. – Farmers' and Exchange Bank, by Francis D. Lee, 1853–54, in Moorish revival style. – The Ansonborough district contains more than 100 ante-bellum structures of architectural importance now undergoing restoration.

Churches: St. Michael's Church (I, PL. 75), attributed by some to Peter Harrison, 1751–53, with a monumental portico and a great tower and steeple. – Unitarian Church, 1772–84; remodeled by Francis D. Lee, 1852–54; with fan-tracery vaulting and pendant copied from Chapel of Henry VII at Westminster, England. – French Huguenot Church, 1797; remodeled in Neo-Gothic style by E. B. White, 1845. – Second Presbyterian Church, by James and John Gordon, 1809–ca. 1816, in Georgian style. – St. John's Lutheran Church, possibly by Frederick Wesner, 1815–18; steeple added by Charles Fraser in 1859. – First Baptist Church, by Robert Mills, 1819–22, with full temple portico. – St. Stephen's Chapel, probably by H. and E. Horlbeck, 1835–36. – St. Philip's Church, by Joseph Hyde, 1835–38; interior columns copied from St. Martin-in-the-Fields in London; steeple added by E. B. White, 1848–50. – St. Mary's Church, 1838–39, in Greek revival style. – Beth Elohim Synagogue, by Cyrus L. Warner, 1841, Greek Doric. – Centenary Methodist Episcopal Church, by E. B. White, 1842, in Greek temple style. – Grace Protestant Episcopal Church, also by White, 1847–48. – Trinity Methodist Church, by E. C. Jones, 1848–50.

Museums: Charleston Museum, with local furniture, costumes, minor arts, and Indian relics. – Carolina Art Association, Gibbes Art Gallery, with painting, sculpture, and prints by South Carolina artists.

Near Charleston are some fine plantation houses: "Medway," 1686 with later additions; "Middleburg," 1699; "Mulberry," 1715, a baroque country house with formal gardens; Drayton Hall, 1738, in Palladian style; Middleton Place Gardens, landscaped between 1764 and 1774; and "Seabrook," 1810, in Adam style.

Christ Church Parish. Christ Church, 1724–27; rebuilt 1782; spire 1835–38.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Columbia. Hampton-Preston House, perhaps by Robert Mills, ca. 1818. – De Bruhl-Marshall House, probably by Mills, 1820. – South Carolina State Hospital, original building by Mills, ca. 1825. – Ainsley Hall Mansion, by Mills, 1823; restored. – Robertson House, attributed to Mills, ca. 1832. – Crawford-Clarkson House, 1838, with Greek revival details. – South Caroliniana Library, 1840, in Greek revival style. – Trinity Episcopal Church, 1846; transepts 1861–62; generally inspired by York Minster, England. – State House, by John R. Niernsée, begun 1854; work resumed in 1885; dome and porches added by Frank P. Milburn in 1900; building completed by Charles C. Wilson in 1905. – University of South Carolina, Undergraduate Library, by Lyles, Bissett, Carlisle, & Wolff, Edward D. Stone, associated architect, completed 1958. – Columbia Museum of Art, with Italian Renaissance painting, contemporary American art, and minor arts.

Georgetown. Masonic Temple, 1735. – Prince George Winyah Church, 1742, in north European baroque style. – Market Building, 1842. – Near Georgetown are Hampton Plantation, 1735, enlarged 1757, giant portico and pediment added 1791; Hopseewee Plantation, before 1748; St. James's Church (also known as Wambaw Church), 1768, with curved-brick Tuscan columns; "The Wedge," 1818, a plantation house; and Brookgreen Gardens, an outdoor museum with American sculpture of the 19th and 20th centuries.

Goose Creek. St. James's Church, 1708, built by planters from Barbados in their ornamented stucco style.

Greenville. Bob Jones University Collection of Sacred Art, with religious art of the 13th–18th century.

Pompion Hill. Pompion Hill Chapel, 1763, a small brick structure with jerkin-head roof and charming interior.

Sumter. "Milford," 1840, in Greek revival style; restored. – Nearby is the Church of the Holy Cross, 1850.

BIBLIOG. A. R. H. and D. E. H. Smith, The Dwelling Houses of Charleston, S.C., Philadelphia, 1917; A. Simons and S. Lapham, Charleston, New York, 1927; B. Wootten and S. G. Stoney, Charleston: Azaleas and Old Brick, Boston, 1937; W. O. Stevens, Charleston: Historic City of Gardens, New York, 1939; A. Deas, The Early Ironwork of Charleston, Columbia, 1941; FWP, South Carolina: A Guide to the Palmetto State, New York, 1941; J. K. Simons and M. B. Meriwether, A Guide to Columbia: South Carolina's Capital City, 2d ed., Columbia, 1943; B. St. J. Ravenel, Architects of Charleston, Charleston, 1945; A. W. Rutledge, Artists in the Life of Charleston, Tr. Am. Philosophical Soc., XXXIX, 1949, pp. 101–260; C. T. Julien, Ninety Six, Columbia, 1950; C. T. Julien, Pee Dee Panorama, Columbia, 1951; S. G. Stoney, Plantations of the Carolina Low Country (ed. A. Simons and S. Lapham, Jr.), Charleston, 1955; S. and N. Chamberlain, Southern Interiors of Charleston, S.C., New York, 1956; S. G. Stoney, This Is Charleston: A Survey of the Architectural Heritage of a Unique American City, 2d ed., Charleston, 1960; B. and K. F. Marsh, Plantation Heritage in Upcountry South Carolina, Asheville, N.C., 1962.

Georgia. The first permanent settlement was made by the English at Savannah in 1733. The last of the 13 original colonies to be founded, Georgia was admitted to the Union in 1788, seceded in 1861, and was readmitted in 1870. Atlanta became the capital in 1887.

Athens. University of Georgia: Chapel, 1831, and President's House, 1854–55, both in Greek revival style; Georgia Museum of Art, with American painting. – Henry Grady House, 1845, in Greek revival style.

Atlanta. State Capitol, by Edbrooke & Burnham, 1885–89, in Italian Renaissance manner. – Henry Grady High School, Football Stadium, by Richard L. Aeck and Associates, 1948. – Georgia Institute of Technology, Coliseum, also by Aeck and Associates, 1956. – Peachtree Center, a complex of office buildings, hotels, and trade mart designed by John C. Portman for the downtown area in the 1960s. Regency Hyatt House, a hotel by Portman completed in 1967, is built around a great skylit courtyard. – Atlanta Art Association Galleries, with Italian Renaissance painting and sculpture, contemporary graphic arts, Oriental art, and American art. On the grounds is Thornton House, ca. 1780, moved from Union Point, Ga.

Augusta. Mackay House, ca. 1760, with fine interior features; restored. – Richmond County Courthouse, ca. 1811, with influences of French classicism. – Nicholas Ware Mansion, 1818. – St. Paul's Church, by John Land, 1819, in Roman style.

Cartersville. The Etowah Mounds date from the Mississippi phase of the Woodland stage (see NORTH AMERICAN CULTURES). The largest of the seven pyramids, Mound A, is 53 feet high and occupies several acres. On the south side of the mound is a clay ramp stepped with logs, which led to the top, on which a temple or residence for the chief or priest stood. The museum houses archaeological exhibits, which demonstrate the high artistic level reached by the Etowah Indians.

Columbus. Columbus Museum of Arts and Crafts, with European and American painting from the 16th century to the present, prints, and Indian relics.

Greensboro. Jail, ca. 1837, superb small crenelated stone keep.

Macon. Many beautiful Greek revival mansions, including: Solomon-Smith-Martin House, ca. 1823; Washington-Watson House, 1826, with later additions and remodeling; "The Cedars," 1830s, remodeled 1840; Ralph Small House, ca. 1835; "Overlook" (now Stratford Academy), 1836–40; Munro-Goolsby House, 1841; Leroy Napier House, 1842; Nisbet-Huguenin-Proudfit-Birdsey House, 1843–44; W. Rock Rogers House, 1840s; Raines-Miller-Carmichael House, late 1840s; and Judge Asa Holt House, 1853. – Just outside Macon is the Ocmulgee National Monument, preserving the remains of six successive occupations by different Indian groups dating from approximately 8000 B.C. to A.D. 1717.

Milledgeville. Former buildings of state government when the city was the capital of the state (1804–68), including: Old State Capitol (now Academic Building of Georgia Military College), 1804, and Old Executive Mansion (now President's House, Georgia State College for Women), 1838.

Sapelo Island. South End House, 1810–12, fine example of Greek revival architecture.

Savannah. Herb House, 1734. – Pirates' House, ca. 1754. – Pink House, 1789, in Georgian style; north wing added 1812. – Davenport House (now a museum), 1815, fine example of late Georgian style; restored. – Owens-Thomas House, by William Jay, 1816–19, one of the most beautiful Regency houses in America. – Independent Presbyterian Church, by John H. Greene, 1817–19; burned in 1889, it was rebuilt after Greene's designs. – Scarbrough House, by Jay, 1818. – Juliette Low Gordon Birthplace, 1818–21, in Regency style. – Chatham County Courthouse, by Jay, ca. 1820, a Doric temple form. – Sorrel-Weed House, 1837–40, in Greek revival style. – Christ Episcopal Church, by James H. Couper, 1838, an Ionic temple form. – Stoddard-Hull Barrow House, 1844–48, in Greek revival style. – Green-Meldrim House, 1850–61, Neo-Gothic. – St. John's Episcopal Church, 1852–53, Neo-Gothic. – Cathedral of St. John the Baptist, 1873, fine example of Neo-Gothic architecture. – Telfair Academy of Arts and Sciences, with American painting and American and English minor arts.

Spring Place. Vann House, 1804, built by a Scotch-Cherokee chieftain, in modified Georgian style.

Toccoa. Jarrett Manor (also called "Traveler's Rest"), 1784, a frontier fort and stagecoach inn.

Washington. Robert Toombs House, 1794, with a fine Doric colonnade. – Berry-Hay-Pope House, 1818, in Greek revival style; later alterations. – Fickeleen-Lyndon-Johnson House, ca. 1825; remodeled 1851; restored. – Presbyterian Church, 1825, in the style of the colonial churches of New England. – Barnett-Slaton House (now a museum), ca. 1835–36; later additions; restored. – MacEdwards House, 1850–60, in Greek revival style. – Mary Willis Library, 1889, characteristic late Victorian structure; stained-glass window by Louis C. Tiffany.

BIBLIOG. C. C. Jones, Jr., Antiquities of the Southern Indians, Particularly of the Georgia Tribes, New York, 1873; C. C. Jones, Jr., The Dead Towns of Georgia, Savannah, 1878; W. K. Moorehead, Etowah Papers, New Haven, Conn., 1932; E. M. Coulter, ed., Georgia's Disputed Ruins, Chapel Hill, N.C., 1937; FWP, Savannah, Savannah, 1937; FWP, Georgia: A Guide to Its Towns and Countryside, Athens, Ga., 1940; FWP, Atlanta: A City of the Modern South, New York, 1942; C. Murphy, Savannah, Columbia, 1947; W. C. Davis, The Columns of Athens: Georgia's Classic City, Athens, Ga., 1951; A. R. Kelly, Etowah, Archaeology, VII, 1954, pp. 22–27; M. F. Perkerson, White Columns in Georgia, New York, 1952; A. R. Kelly and L. H. Larson, Explorations at Etowah, Archaeology, X, 1957, pp. 39–48; F. D. Nichols and F. B. Johnston, The Early Architecture of Georgia, Chapel Hill, N.C., 1957; T. C. Bannister, Oglethorpe's Sources for the Savannah Plan, JSAH, XX, 1961, pp. 47–62; K. F. and B. Marsh, Athens: Georgia's Columned City, Asheville, N.C., 1964.

Florida. Florida was discovered by Juan Ponce de León in 1513. Saint Augustine, founded in 1565 by the Spaniards, is the oldest

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

permanent white settlement in the United States. The province was ceded to England in 1763 and retroceded to Spain in 1783; it was purchased by the United States in 1819. Admitted to the Union in 1845, Florida seceded in 1861 and was readmitted in 1868. Tallahassee is the capital.

Coral Gables. The city was planned as one unit in "Spanish" style in the 1920s; architecturally the most interesting buildings are the Congregational Church and the Bank of Coral Gables, both by Kiehnel & Elliott. – University of Miami, Joe and Emily Lowe Art Gallery, with European masterworks from the 14th to the 18th century and American Indian artifacts.

Ellenton. Gamble Mansion, 1845–50, in Greek revival style; restored 1950s.

Jacksonville. Cummer Gallery of Art, with American and European painting and French and English 18th-century furniture.

Lakeland. Florida Southern College, entire plan and all buildings by Frank Lloyd Wright, begun 1938.

Miami. Dade County Art Museum, housed in "Vizcaya," designed by J. B. Hoffman and Paul Chalfin, 1912–16, a Venetian Renaissance palace; contains European architectural elements, European interiors of the 16th–18th century, tapestries, and furniture; formal gardens with fountains and statuary. – Miami Museum of Modern Art, with contemporary painting, sculpture, and graphics and Oriental art. – In Miami Beach is the Bass Museum of Arts, with European masterworks, sculpture from the 14th century on, and tapestries. – In North Miami Beach is the Episcopal Monastery Church of St. Bernard of Clairvaux, the cloister portion of a Cistercian monastery built in 1141 in Sacramenia, Spain, a fine example of early Gothic architecture.

Saint Augustine. Castillo de San Marcos, 1672–96, enlarged 1738–39, one of the finest Spanish monuments in the country and the best surviving example of the type of fortress developed in Europe in the late medieval period. – 32 houses remain from the period 1703 to 1821; most have a loggia or a porch opening onto a side yard with the main entrance through the loggia, balconies facing on the street, high fences, and flat or pitched roofs. Noteworthy are: "Oldest House," Llambias House, Rodriguez-Avero-Sanchez House, Fatio House, "Old Spanish Treasury," Prince Murat House, Sanchez House, Fornells House, Paredes House, and the Old Spanish Inn with furnishings from the early 18th century brought from Spain. – Cathedral of St. Augustine, by Mariano de la Rocque, 1793–97; burned 1887; restored and transept, tower, and belfry added. – Ponce de Leon Hotel, by Carrère & Hastings, 1885–88. – Flagler Memorial Church, 1889–90, in Venetian Renaissance style. – U.S. Post Office and Custom House, 1937, built to conform to a drawing of the Royal Governor's Palace of 1764, embodying a part of the building of 1690. – South of Saint Augustine stands Fort Matanzas, 1741–42, medieval-fortress type with a keep.

Sarasota. House on Siesta Key (I, PL. 92), by Paul Rudolph, 1952. – Sarasota High School, by Rudolph, 1957–58. – John and Mable Ringling Museum of Art, housed in a villa in the Italian style designed by John H. Phillips, 1927–30, with European painting from the 16th to the 18th century (especially baroque), Cypriote and Indian sculpture, and medieval minor arts. On the Museum grounds are the theater from Asolo, Italy, 1798, remodeled 1857; the Ringling Residence, "Ca d'Zan," by Dwight J. Baum, 1925–26, in the style of a Venetian Gothic palace; and the Ringling Circus Museum.

Tallahassee. State Capitol, 1838–42; north and south wings and dome, by Frank P. Milburn, 1902; east and west wings and main porticoes, by H. J. Keutho, 1923; north wing extended by M. L. Elliott in 1936–37. – Florida State University, Art Gallery, with 17th-century European painting.

West Palm Beach. Norton Gallery and School of Art, with Chinese jades and sculpture and American and European painting and sculpture

BIBLIOG. FWP, Florida: A Guide to the Southernmost State, New York, 1939; A. Manucy, The Houses of St. Augustine, 1565–1821, St. Augustine, 1962.

Kentucky. Originally a part of Virginia, Kentucky became an independent state in 1792. The first permanent settlement was established by the English at Harrodsburg in 1775. Frankfort became the capital in 1792.

Bardstown. "My Old Kentucky Home," 1795–1818. – St. Joseph's Proto-Cathedral, by John Rogers, begun 1816, showing Baltimore influence in the handsome façade with niches, Ionic portico, and baroque towers.

Danville. McDowell House and Apothecary Shop, ca. 1795; restored; contains apothecary equipment of the late 18th and the early 19th century.

Frankfort. Liberty Hall, ca. 1796, in Georgian style with a fine Palladian window; restored. – Old Governor's Mansion, 1798. – Old State House (now Kentucky Historical Society building), by Gideon Shryock, 1827–30, in Greek revival style. – Orlando Brown House, 1835. – State Capitol, by Frank Andrews, completed 1910.

Lexington. "Ashland," 1811, the home of Henry Clay. – University of Kentucky, University Art Gallery, with paintings, prints, and drawings.

Louisville. Jefferson County Courthouse, by Gideon Shryock, 1835–60, in Greek revival style. – Bank of Louisville (now Louisville Credit Men's Association), by Shryock, 1837, in Greek revival style. – City Hall, by John Andrewartha, 1870–73, in French Second Empire style. – J. B. Speed Art Museum, with Kentucky art, European minor arts, and American Indian objects. – University of Louisville, Allen R. Hite Art Institute, with paintings, sculpture, prints, and drawings. – Near Louisville are "Locust Grove," ca. 1790, in Georgian style, restored 1961, and "Farmington," by Thomas Jefferson, 1810, a simple brick building with Doric-columned portico and two magnificent octagonal rooms.

BIBLIOG. R. Newcomb, Old Kentucky Architecture, New York, 1940; A. J. Andrews, Gideon Shryock, Kentucky Architect, and Greek Revival Architecture in Kentucky, Filson Club H. Q., XVIII, 1944, pp. 67–77; R. Newcomb, Architecture in Old Kentucky, Urbana, Ill., 1953; FWP, Kentucky: A Guide to the Bluegrass State, 2d ed., New York, 1954; C. Lancaster, Ante Bellum Suburban Villas and Rural Residences of Fayette County, Kentucky, and Some Outstanding Homes of Lexington, Lexington, Ky., 1955; C. Lancaster, Ante-Bellum Houses of the Bluegrass, Lexington, Ky., 1961.

Tennessee. The first permanent settlement was established in 1771 near Rogersville. Tennessee was admitted to the Union in 1796, seceded in 1861, and was readmitted in 1866. Nashville became the capital in 1843.

Fontana Dam. Fontana Dam and Power House, by Roland Wank, 1942–45, probably the most architecturally significant of the many interesting structures by the Tennessee Valley Authority.

Gallatin. Near here is "Cragfont," ca. 1802, in Georgian style; restored.

Knoxville. Governor William Blount Mansion, 1792; restored 1920s. – City Hall (formerly Tennessee School for the Deaf), 1848, in simplified classical style. – Bleak House (now Confederate Memorial Hall), an ante-bellum mansion with terraced gardens; restored 1960. – Near Knoxville is Ramsey House (also known as Swan Pond), 1797, a simple marble house; restored 1950s.

Maryville. Maryville College, Fine Arts Center, by Schweiker & Elting, 1950, with contemporary prints. – Nearby is Cades Cove, a pioneer village of the early 19th century.

Memphis. Brooks Memorial Art Gallery, with European and American painting, prints, textiles, and glassware.

Nashville. St. Mary's Church, 1845–47, by William Strickland, in Greek revival style. – State Capitol, by Strickland, 1845–55, Greek revival, with the tower modeled after the choragic monument of Lysikrates in Athens; restored 1953. – First Presbyterian Church, by Strickland, 1848–51, in Egyptian style. – The Parthenon, an exact reproduction of the Athenian Parthenon as restored, containing American paintings. – Near Nashville are "Traveler's Rest," 1792, later additions; "Oaklands," early 1800s, later additions; "Belmont" (now Acklen Hall of Belmont College), by Strickland, 1850; "Belle Meade," by Strickland, ca. 1853, in Greek revival style, with Victorian furnishings; and "The Hermitage," Andrew Jackson's home, 1819, wings added 1831, rebuilt after fire in 1835, when the great Corinthian portico was added, with original furnishings. On The Hermitage grounds are log cabins of ca. 1804, the Presbyterian Church of 1823, and a smokehouse of 1831.

Natchez. First Presbyterian Church, 1829, in the style of New England church classicism.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Sewanee. University of the South, Art Gallery, with paintings and graphic arts.

BIBLIOG. R. S. Brandau, ed., History of Homes and Gardens of Tennessee, Nashville, 1936 (repr. 1964); FWP, Tennessee: A Guide to the State, New York, 1939; G. A. Cochran and F. B. Hoffman, Grandeur in Tennessee: Classical Revival Architecture in a Pioneer State, New York, 1946; A. E. Gilchrist, William Strickland: Architect and Engineer, 1788–1854, Philadelphia, 1950.

Alabama. The first permanent settlement was made by the French at Mobile in 1711. Alabama was admitted to the Union in 1819, seceded in 1861, and was readmitted in 1868. Montgomery has been the capital since 1847.

Birmingham. Birmingham Museum of Art, with European and American painting, graphic arts, silver, classical, Near Eastern, and Oriental antiquities, and American Indian and pre-Columbian art.

Demopolis. "Gaineswood," purportedly from designs of the owner, N. B. Whitfield, 1842–60, one of the most architecturally imaginative of the southern Greek revival mansions.

Mobile. Many fine Greek revival structures, including Bragg House, before 1827, remodeled in the 1850s; City Hospital, completed 1830, with a magnificent three-storied portico; "Oakleigh" (headquarters of Historic Mobile Preservation Society), 1833, with a unique curving outside staircase; Christ Church, 1835–40; Barton Academy, by James Gallier, 1836, with an Ionic porch and a double-domed, double-colonnaded cupola; and Palmetto Hall, 1846.

Montgomery. State Capitol, by Stephen D. Button, 1847; rebuilt after fire on revised scheme by Button, 1851–52; wings added later. – St. John's Church, by Wills, Dudley & Humbage, consecrated 1855, in Neo-Gothic style. – Alabama Agricultural Center, by Sherlock, Smith & Adams, ca. 1950. – Montgomery Museum of Fine Arts, with American painting, graphic arts, and Indian artifacts.

Moundville. At the Mound State Monument is a group of domiciliary mounds built by the Indians from about 1200 to about 1400. Mound B, the largest one, is 58½ feet high and covers almost 2 acres. The Archaeological Museum displays the art of the Moundville Indians and 57 burial groups.

Tuscaloosa. University of Alabama: Gorgas House (originally college dining hall), 1830, and President's House, a fine ante-bellum mansion.

Tuskegee. Tuskegee Institute, George Washington Carver Museum, with African art and sculpture and painting by American Negro artists.

BIBLIOG. FWP, Alabama: A Guide to the Deep South, New York, 1941; The Tintagil Club, Official Guide to Montgomery, Montgomery, 1948; R. C. Hammond, Ante-Bellum Mansions of Alabama, New York, 1951; W. H. Davidson, Pine Log and Greek Revival, Alexander City, Ala., 1964.

Mississippi. Biloxi, settled by the French in 1699, was the first permanent settlement. Mississippi was admitted to the Union in 1817, seceded in 1861, and was readmitted in 1870. Jackson has been the capital since 1822.

Jackson. Old Capitol (now State Historical Museum), by William Nichols, 1833–39, in Greek revival style; restored 1959–61. – Governor's Mansion, completed 1841, Greek revival. – State Capitol, by Theodore C. Link, 1901–03.

Natchez. There are 30 ante-bellum houses in and around Natchez. Typical of the French colonial style, with an open colonnaded veranda running around the house on both floors, are Connelly's Tavern, ca. 1796–99, restored, and a later example, "Dunleith," 1847. "D'Evereux," 1840, and Stanton Hall, 1851, are beautiful Greek revival mansions. "Longwood," by Samuel Sloan, begun in 1860 and never finished, is in pseudo-Oriental style.

Pascagoula. De la Point Fort, 1718, a fort erected by the Spaniards.

Vicksburg. "McRaven," frontier cottage of 1797 altered to plantation house in 1836; addition 1849. – Planters Hall, 1832; restored. – Cedar Grove, 1840–58; restored. – Old Courthouse (now a museum), 1858.

BIBLIOG. C. V. Sutton, ed., History of Art in Mississippi, Gulfport, Miss., 1929; G. W. Newell and C. C. Compton, Natchez and the Pilgrimage, Kingsport, Tenn., 1935; FWP, Mississippi: A Guide to the Magnolia State, New York, 1938; J. W. Cooper, Natchez: A Treasure of Antebellum Homes, Philadelphia, 1957; R. G. Pishel, Natchez: Museum City of the Old South, 2d ed., Tulsa, Okla., 1959; I. S. Tyree, Natchez Ante-bellum Homes, Natchez, 1964.

South Central States (Arkansas, Louisiana, Oklahoma, Texas). The earliest settlements in the area were in Texas, where Spanish Franciscans founded missions in the 17th century. The oldest extant building is at Ysleta, near El Paso, founded in 1681; the finest mission, San José y San Miguel de Aguayo, begun in 1720, is located in San Antonio. Very small-scale Spanish settlements were developed in the mission areas, the most important being San Antonio, which combined the three Spanish-colonial functions of town, presidio, and mission.

The region was dominated by the French. Outposts for exploitation were established following La Salle's reports of the Louisiana country (as he named it in honor of Louis XIV), including Mobile, Ala., Biloxi, Miss., Natchitoches, La., and New Orleans, La., all founded by the Lemoyne brothers, Pierre (Sieur d'Iberville) and Jean Baptiste (Sieur de Bienville). Permanent settlement on a truly urban scale was first made when Bienville founded New Orleans in 1718; the city was named for Philippe II, duc d'Orléans, when he was regent for Louis XV. The engineers Le Blond de la Tour and Adrien de Pauger laid the city out in 1721. The city framework they created was, like that of Philadelphia in the same period, far vaster than was required by immediate building and served to control the growth and form of the city for nearly a century (FIG. 637). The fortifications shown in the plan were never built.

When Louisiana was purchased by the United States from Napoleon in 1803 the entire Mississippi valley was quickly settled and New Orleans became a great trading center and port. The architecture of the plantation houses in Louisiana was generally of three types: French colonial; Greek revival; or "Plantation Greek," a combination of French colonial and Greek revival styles.

Although American settlers were in Texas when it was part of Mexico and during its brief independence, it was only after its union with the United States in 1845 that the flow of agricultural settlers commenced. The influence of the eastern states can be seen in such plans as that of 1846 for Rusk, Tex., with a central square in a grid plan. This reliance on the past is suggested in the various planning devices in the area around Fort Brown, Tex., established 1846, which by 1875 included a Renaissance star fort, a simple grid pattern town (Brownsville, founded 1848), a French-influenced plan of avenues radiating from a central point (the army post), and a romantically "natural" plan of roads on an island (set aside for a cemetery) in a lagoon.

The decline of the plantation system and of river transportation slowed and changed New Orleans' growth, but after World War II the city began a new economic advance. Were it not for the development of great cattle ranches and the discovery of oil Texas too might have been affected by the decline of the plantation system. Since World War II Texas and Louisiana have turned to the leading architects for their new buildings. Texas has been an innovator in city planning. Victor Gruen's plan to resuscitate and beautify the downtown area of Fort Worth is so basic and so attractive that it has been studied with the greatest interest by many other cities, suffering from the same problem of a decaying core.

Arkansas. The first permanent white settlement was at Arkansas Post in 1686. The area was claimed by France and then by Spain. In 1803 it was included in the Louisiana Purchase, and subsequently became part of the Louisiana and Missouri territories. The Arkansas territory was formed in 1819, and Arkansas was admitted to the Union in 1836. The state seceded in 1861 and was readmitted in 1868. Little Rock is the capital.

Fayetteville. University of Arkansas' Arts Center, by Edward D. Stone, Haralson & Mott, associated architects, completed 1951.

Little Rock. Arkansas Territorial Capitol Restoration, a group of 13 buildings dating from Arkansas' pre-statehood era, restored 1939–41; includes three residences and the Territorial Capitol, 1820, remodeled 1834, with period furnishings. – Old State House (now a history museum), by Gideon Shryock, 1833–40, fine example of Greek revival architecture; enlarged 1885; restored. – State Capitol, by George R. Mann and Cass Gilbert, 1900–15.

BIBLIOG. FWP, Arkansas: A Guide to the State, New York, 1941.

Louisiana. This area was claimed by France in 1682. The first permanent settlement was at New Orleans in 1718. Louisiana was ceded to Spain in 1763, and was returned to France in 1800. In 1803 it was part of the Louisiana Purchase. The state was admitted to the Union in 1812, seceded in 1861, and was readmitted in 1868. Baton Rouge is the capital.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Baton Rouge. "Magnolia Mound" (also known as Murat House), late 18th century, in French colonial style. – Prescott-Dougherty House, ca. 1840. – "Goodwood," 1856, a fine plantation house. – Old State Capitol, by W. A. Feret, 1879, in Neo-Gothic style; the interior vault of iron and stained glass was apparently inspired by J. B. Bunning's Coal Exchange of 1846–49 in London. – State Capitol, by Weiss, Dreyfous & Seiforth, completed 1932. – Louisiana State University Art Museum, with period rooms of the 17th, 18th, and 19th centuries.

Burnside. Houmas House, 1840, in Plantation Greek style, with a hexagonal guest house on either side of the main house.

Darrow. Nearby is "Ashland-Belle Hélène," attributed to James Gallier, Jr., 1841, an unusual mansion in Plantation Greek style; restored.

Derry. In the environs is "Melrose," 1833, a fine example of the French colonial style. Behind the residence is "African House," a square building with a shingled hip roof with an extensive overhang to shelter wagons.

Destrehan. "Ormond," 1780s, in French colonial style; wings added later; restored.

Edgard. Nearby is Evergreen Plantation House, ca. 1840, in Plantation Greek style; the curving exterior stair leading to the second-floor portico is noteworthy.

Hahnville. Keller House (also known as "Home Place"), ca. 1801, in French colonial style, with furniture, curtains, and wallpaper imported from France.

Jeanerette. Albania Plantation House, 1842, in Plantation Greek style, with a beautiful spiral staircase in the central hall.

Napoleonville. "Madewood," 1840–48, well-preserved Greek revival plantation home with connecting wings in the same style.

New Iberia. "The Shadows" (also known as "Shadows-on-the-Teche"), 1830–34, one of the most beautiful houses in Plantation Greek style; restored 1920s, 1961.

New Orleans. The Vieux Carré, also called the French Quarter, was the center of the original city (FIG. 637); Jackson Square was the *place d'armes*. Characteristic of the architecture in this quarter are iron balconies, fan windows, spiral staircases, and courtyards. In the Garden District, planned in the 1820s, are some fine old mansions and gardens.

Secular buildings: "Madame John's Legacy," ca. 1729, one of the oldest houses in French colonial style. – Old Ursuline Convent (now presbytery of St. Mary's Italian Church), by De Batz and Broutin, 1730–34; rebuilt by them in 1748–52 in Louis XV style; later alterations. – Lafitte's Blacksmith Shop, 1772–91. – Miro House, 1784, built by the Spanish governor. – The Cabildo (now part of Louisiana State Museum), 1755, first two stories probably based on the Casas Reales of 1791 in Antequera, Mexico; third story, with a mansard roof, added in the 1850s. – French Market, 1812; later additions. – The Presbytery (now part of Louisiana State Museum), completed 1817, is almost identical to the Cabildo. – Old Louisiana State Bank (now a store), by Benjamin Latrobe, begun 1819; completed after his death by Benjamin Fox in 1821. – Warrington House, ca. 1832, with magnificent murals. – Old U.S. Mint (now a federal prison), by William Strickland, 1836–38, in neoclassic style. – Louisiana State Arsenal (now Battle Abbey), by James H. Dakin, 1839. – U.S. Custom House, by A. T. Wood, 1847, with beautiful marble staircase and marble hall. – Pontala Buildings, by James Gallier, Sr., 1849–51, two buildings flanking Jackson Square that were America's first apartments. – City Hall, also by Gallier, 1845–50, an Ionic temple form.

Churches: Basilica of St. Louis, King of France, 1789–94, remodeled by J. N. B. de Pouilly, 1851. – Church of Our Lady of Guadalupe (formerly Church of St. Anthony of Padua), by Claude Garlie and Joseph Guillot, 1826–27, in classical style; later changes. – St. Mary's Italian Church, 1846. – Church of St. John the Baptist, by Albert Diettel, 1869–72, bold forms and Italianate details in brick.

Museums: Isaac Delgado Museum of Art, with Italian Renaissance masterworks, European and American painting and sculpture of the 19th and 20th centuries, and ancient and Oriental art. – Tulane University, Middle American Research Institute, with sculpture, ceramics, and manuscripts from Mexico and Central America.

Norwood. Nearby is "Richland," 1820, a sumptuous home with beautiful Greek revival portico and notable interior unsupported staircase.

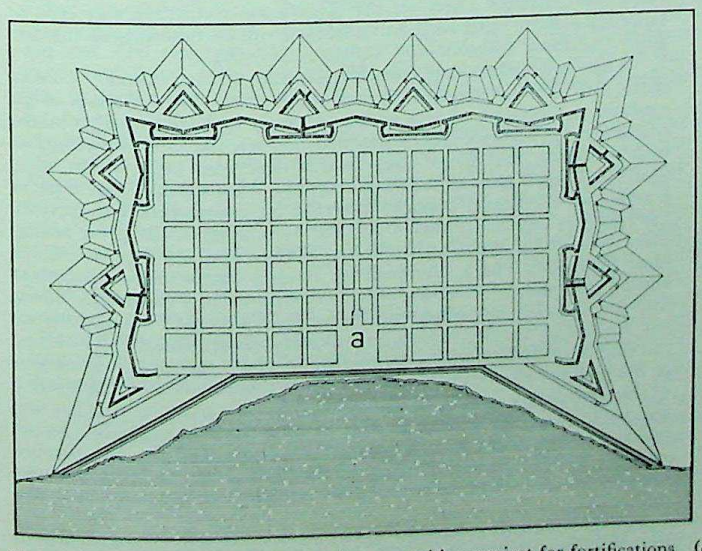
Reserve. Voisin Plantation House, ca. 1785, in French colonial style, with original furniture. – In the environs is "San Francisco," ca. 1850, a plantation house in "Steamboat Gothic" style.

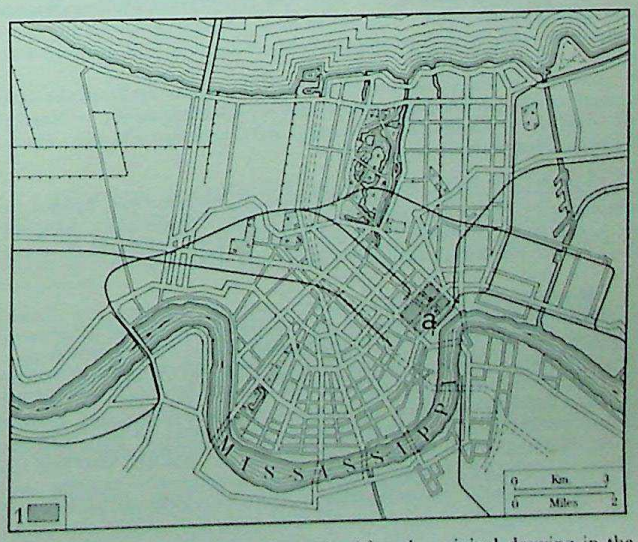
Saint Francisville. Near the town is "Rosedown," 1835, a mixture of the Louisiana, Georgian, and classical styles; the formal gardens were copied from those at Versailles and contain marble statues of gods and goddesses.

Vacherie. "Oak Alley" (I, PL. 81), 1836–37, a magnificent Plantation Greek mansion.

White Castle. "Nottoway," 1857, the largest extant plantation home in the state; noteworthy are the White Ballroom and the ornate cast-iron filigree work.

BIBLIOG. G. E. King, New Orleans: The Place and the People, New York, London, 1904; W. P. Spratling, Old Plantation Architecture in Louisiana, Arch. Forum, XLIV, 1926, pp. 217–24, 301–06; W. P. Spratling and N. Scott, Old Plantation Houses in Louisiana, New York, 1927; N. C. Curtis, New Orleans: Its Old Houses, Shops and Public Buildings, Philadelphia, London, 1933; FWP, New Orleans City Guide, Boston, 1938; I. W. Ricciuti, New Orleans and Its Environs: The Domestic Architecture, 1727–1870, New York, 1938; D. L. Cohn, New Orleans and Its Living Past, Boston, 1941; FWP, Louisiana: A Guide to the State, New York, 1941; J. F. Smith, White Pillars, New York, 1941; S. C. Arthur, Old New Orleans, New Orleans, 1944; C. J. Laughlin, Ghosts along the Mississippi: An Essay in the Poetic Interpretation of Louisiana's Plantation Architecture, New York, 1948; S. M. Lynn, New Orleans, New York, 1949; B. H. Latrobe, Impressions Re-





New Orleans. *Left*: Plan of the city in 1729 with a project for fortifications. (*a*) *Place d'armes* (now Jackson Square). After the original drawing in the British Museum, Add. 15,331. *Right*: Plan of the modern city. *Key*: (1) Area covered by the original city plan. (*a*) *Place d'armes*.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

specting New Orleans: Diary and Sketches, 1818–20 (ed. S. Wilson, Jr.), New York, 1951; M. Péret, L'architecture en Louisiane au XIXe siècle, Athénée louisianais: Comptes rendus, 1952, no. 11, pp. 5-24; Louisiana State Museum, Louisiana Purchase, New Orleans, 1953 (cat.); S. Wilson, Jr., A Guide to the Architecture of New Orleans: 1699–1959, New York, 1959; L. V. Huber and S. Wilson, Jr., Baroness Pontalba's Buildings, New Orleans, 1964; L. V. Huber and S. Wilson, Jr., The Basilica on Jackson Square and Predecessors, New Orleans, 1965; W. D. Overdyke, Louisiana Plantation Homes, New York, 1965.

Oklahoma. Oklahoma was part of the Louisiana Purchase in 1803. The area was settled by the Indians and known as the Indian Territory. Part of the land was opened to white settlement in 1889, and in 1890 was organized into the Oklahoma Territory. The Indian and Oklahoma territories were merged in 1906 and the state of Oklahoma was admitted to the Union the following year. Oklahoma City became the capital in 1910.

Bartlesville. Price Tower (PL. 437, FIG. 868), by Frank Lloyd Wright, 1953–55, based on his 1929 scheme for a skyscraper church for New York City.

Oklahoma City. State Capitol, by S. A. Layton and S. Wemyss-Smith, 1914–17. – Oklahoma Art Center, with contemporary American art.

Tulsa. Boston Avenue Methodist Church, by Adah Robinson, 1925–29, with details inspired by Goodhue, Eliel Saarinen, and Wright. – Richard Lloyd Jones House, by Wright, 1929, showing the most direct influence of the Bauhaus in Wright's work. – Philbrook Art Center, with Italian Renaissance painting and sculpture, American Indian painting and sculpture, and painting of the 18th and 19th centuries. – Thomas Gilcrease Institute of American History and Art, with American art from colonial times to the present (particularly sculpture by Frederic Remington) and Indian artifacts from Middle and North America.

BIBLIOG. F. L. Wright, The Story of the Tower: The Tree That Escaped the Crowded Forest, New York, 1956; FWP, Oklahoma: A Guide to the Sooner State, 2d ed., Norman, Okla., 1957.

Texas. Texas was explored by the Spaniards beginning in 1519, and missions were established during the 17th century. Texas was under Spanish domination until it became a province of Mexico in 1821. In 1836 the Republic of Texas was established, which was annexed by the United States in 1845, in which year it was admitted to the Union and Austin became the capital. Texas seceded in 1861 and was readmitted in 1870.

Austin. French Legation (now a museum), 1840, with period furnishings; restored. – Governor's Mansion, 1853, in Greek revival style. – State Capitol, by E. E. Myers, 1882–88. – Texas Memorial Museum, by John F. Staub, with Paul Cret as consulting architect, ca. 1937.

Dallas. Temple Emanu-El, by Eric Mendelsohn, 1951, a massive molded tower rising from a horizontal grouping not unlike his Einstein Tower in Potsdam (V, PL. 104, FIG. 236). – Dallas Theater Center, by Frank Lloyd Wright, completed 1960. – Dallas Museum of Fine Arts, with American painting of the 19th and 20th centuries, Renaissance and contemporary prints, and minor arts. – Dallas Museum for Contemporary Arts, with modern painting, sculpture, and graphic arts.

El Paso. El Paso Museum of Art, with European art from the 15th century to the present, minor arts, and pre-Columbian art. – Nearby are missions at Ysleta, 1681, Socorro, 1682, and San Elizario, whose Presidio Chapel dates from 1777.

Fort Worth. Amon Carter Museum of Western Art, housed in a building by Philip Johnson, 1961. – Kimbell Art Museum, designed by Louis Kahn. – Fort Worth Art Center, with American painting of the 19th and 20th centuries, prints, and drawings.

Houston. Rice Institute: Administration Building, by Cram, Goodhue & Ferguson, 1909–12, in the Byzantine mode; Chemistry Laboratories, by William W. Watkin, with Cram, Goodhue & Ferguson, 1924–25. – Jesse H. Jones Concert Hall, by the firm of Caudill Rowlett Scott, completed 1966; in the interior is *Gemini II*, by the sculptor Richard Lippold. – Museum of Fine Arts of Houston, housed in two buildings, one an Italian Renaissance edifice of 1924, and the other, Cullinan Hall, by Mies van der Rohe, 1958 (X, FIG. 83); the Museum contains Italian and Spanish Renaissance painting and sculpture, Indian art of the Southwest, pre-Columbian art, and ancient art. In the garden is a 50-ton abstract sculpture, *Abesti Gogora V*, by Eduardo Chillida, 1966. – Contemporary Arts Museum, with modern painting and sculpture.

San Antonio. San Fernando Cathedral, 1734–49; later changes. – "The Alamo" (the church of the mission of San Antonio de los Álamos), 1744–57; restored. – Palace of the Governor, 1749, with a fine carved and paneled entrance door; restored 1931. – "La Villita," seven houses of the 18th and 19th centuries reconstructed in the 1930s as a museum of early Texas life. – Marion Koogler McNay Art Institute, with 20th-century French painting, American painting, New Mexican arts and crafts, and medieval art. – In the environs are four missions: San José y San Miguel de Aguayo, 1720–31, is the finest surviving example of Spanish colonial architecture; it was restored in 1933. The Churrigueresque main portal and baptistery window of the church are by the Mexican sculptor Pedro Huizar. Nuestra Señora de la Purísima Concepción de Acuña, San Francisco de la Espada, and San Juan Capistrano were all built in 1731.

Sequin. Juan Sequin Post Office (now a museum), 1838; restored. – Magnolia Hotel, 1840, with concrete walls; later additions.

BIBLIOG. F. B. Fisk, A History of Texas Artists and Sculptors, Abilene, Tex., 1928; E. F. O'Brien, Art and Artists of Texas, Dallas, 1935; C. M. Brooks, Jr., Texas Missions: Their Romance and Architecture, Dallas, 1936; F. C. Chabot, San Antonio and Its Beginnings, San Antonio, 1936; J. H. and J. R. Toulouse, Pioneer Posts of Texas, San Antonio, 1936; J. Ilg, San José: Queen of the Missions, San Antonio, 1938; FWP, Old Villita, San Antonio, 1939; FWP, Texas: A Guide to the Lone Star State, New York, 1940; FWP, San Antonio: A History and Guide, San Antonio, 1941; C. B. Aniol, San Antonio: City of Missions, New York, 1942; E. A. Connally, Architecture at the End of the South: Central Texas, JSAH, XI, 4, 1952, pp. 8–12; E. A. P. Evans, The East Texas House, JSAH, XI, 4, 1952, pp. 1–7; D. King, Ghost Towns of Texas, San Antonio, 1953; D. K. Bracken and M. W. Redway, Early Texas Homes, Dallas, 1956; W. M. Jones, Texas History Carved in Stone, Houston, 1958.

East Central States (Ohio, Indiana, Illinois, Michigan, Wisconsin). This land was first explored by the French, to whom it belonged until 1763, when it was ceded to Great Britain. The area was known as the Old Northwest until 1783, at which time it became part of the United States. Congress gave the area the name of Northwest Territory in 1787. Here Congress awarded land to soldiers of the Revolution for whom there was no other pay.

The typical settlements of the area during the French period were fortified trading posts and religious missions. One such mission was at Cahokia, Ill., settled in 1699. In a drawing of the town about 1735 the highly organized disposition of the buildings within and without the enclosure (presumably a palisade) compares with the baroque Spanish missions of California and the South Western States, though the Spanish examples presented rather different street aspects owing to their use of the arcade to connect all elements and surround the plazas. The settlements of this period were generally small units, often contiguous, but occasionally they developed into real towns. Kaskaskia, Ill., was founded in 1703; a plan of about 1765 shows the typical separation of the fort and mission into distinct units and also shows the way in which this town, like others, grew beyond the mission area. The land division indicates that the Jesuits did not have an ordered plan. Although the topography dictated the odd shape of the southern edge of the town, the essentially medieval character of the plan is inescapable.

During the English period of control a series of well-designed forts was erected. Later on the Americans continued this type of building activity with such handsomely planned examples as the first Fort Dearborn (present-day Chicago) in 1803.

A few town plans date from the late 18th century, notably Cincinnati's Philadelphia-inspired plan of about 1790. The influence of the national capital and of the neoclassic style was felt throughout the whole area. The most spectacular plan was the one for rebuilding Detroit following the fire of 1805, which destroyed most of the town that the French had established in 1701. This scheme provided for a series of equilateral triangles bisected by perpendicular lines, with the triangles radiating from a circular open space. The great central place was called the Grand Circus. Unlike the block plan used in most American cities, the plan of Detroit had streets of different widths (like that of Washington). The area around the Grand Circus was constructed, but otherwise the original plan was not carried out for the rest of the city. However, the plan was an interesting attempt, ranking with Jefferson's experiments, to make the radial principles of the plan for Washington (which L'Enfant tailored to the topography of the site) into a system as endlessly applicable as the grid. That this approach was not forgotten in the ensuing years is suggested by its use in another of the lakeside ports, Cleveland. The city was planned in 1796, but the area in the loop of the river shown in the figure was not platted until 1833; the radial plan was used in this part of the city (FIG. 642).

Other interesting experiments in the area, usually of a simple geometrical type appropriate to the severe classicism of the age, and most often centering on a courthouse square or circle, included the following:

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Chardon, Ohio, 1808; Circleville, Ohio, 1810, which borrowed the circular form from the Indian mounds in the area (the town was replatted from 1838 to 1856); Tallmadge, Ohio, 1807, with the classical form of courthouse-centered town with bisecting and quartering radial avenues; and Knoxville, Ill., with a circular courthouse plot in a rectangular place with streets leading from the centers of the short sides and from the ends of the long. Among the grander plans of the area was, most notably, that for Indianapolis, laid out in 1821 by Christopher Harrison of Baltimore and Alexander Ralston, who had assisted L'Enfant in laying out Washington. They planned a mile-square city with a grid street system having a circular central place and four square places on quartering radials leading from the center to each corner. Madison, Wis., planned in 1836, is a combination of diagonal streets and a grid pattern. Cairo, Ill., was planned in 1838–39, somewhat in the London manner, by the architect William Strickland and the English engineer Richard Taylor, but their plan was not carried out.

The neoclassic style was not the only source of the area's plans. The linear plan of two-lot grids along the road at New Salem, Ill., 1829–39, is rather Germanic. The first town in Ohio, Schoennbrun, was laid out by the Moravians in 1771 (it was abandoned in 1777 and has recently been reconstructed on the original foundations). New Harmony, Ind., was founded by George Rapp, the leader of the Harmonites, in 1814. The Oberlin colony, in Ohio, another Utopian experiment, reflected New England origins in its plan of 1832–33 with relatively small home lots along the few streets of the nuclear village.

In the late 19th century many company towns were built by industrialists. One of the best of these was Pullman, now part of Chicago. Pullman was planned along romantic-classic lines by Solon S. Beman in 1879; the architecture was in Queen Anne style. Still remaining are the workers' houses, and the Florence Hotel, erected between 1879 and 1884.

Chicago was discovered by the French in 1673, and soon a trading post was established there. But it was only with the development of the whole area in the early 19th century that the city began to grow. The city's first plan was the simplest kind of unimaginative grid, rigidly laid out along the water by James Thompson in 1830, without any public space. (For a plan of the city in 1834 see PL. 136). But in a city whose population increased from 30,000 in 1850 to 300,000 in 1870 no plan would have sufficed, and even if the great fire of 1871 had not done away with the slapped-up wooden city its complete replanning would eventually have been necessary. Even after the fire there was no unified attempt to plan the city, the best efforts being such small-scale designs as the interesting Aldine Square of 1874, with row houses arranged around a romantically irregular park.

Although the World's Columbian Exposition, held in Chicago in 1893 (V, PL. 190, FIG. 287), changed the architectural taste of Americans and was influential in future town planning, its most concrete result was the monumental undertaking of the plan of Chicago by Daniel H. Burnham in 1909. Lewis Mumford has referred to the whole plan as "municipal cosmetic," and it was of course planned from the standpoint of beauty — indeed, the design of the main park is reminiscent of nothing so much as a Louis Sullivan architectural ornament. But the plan was far more than mere cosmetic; it dealt in a major way with three of the greatest problems of the modern city: transportation, recreation, and slums. Burnham's plan for Chicago's street system was most advanced, providing different types of streets and road systems ranging from local to regional. The entire plan was never realized, but elements of it were — such as Grant and Burnham parks and Lake Shore and Wacker drives — and the spirit of the project led to later proposals, most notably Eliel Saarinen's project for the lake front of 1923.

Unified urban planning in Chicago has resulted in such influential schemes as the plan by Ludwig Mies van der Rohe for the Illinois Institute of Technology. This plan, first made by Mies in 1939 and in part carried out in buildings designed by him (X, PL. 59, FIG. 82), was altered by the firm of Skidmore, Owings & Merrill, now the supervisory architects and engineers. The plan shows Mies's own highly developed organization, but the direct influence of the Bauhaus plan by Walter Gropius (cf. VII, PL. 81, FIG. 176) is not to be discounted, especially in the grouping of buildings close to the main arteries. The plan has had great influence in other designs for institutions of study and research, most notably in Eero Saarinen's General Motors Technical Center in Warren, Mich. (I, PL. 94; IV, PL. 198), 1951–55.

BIBLIOG. Architecture of the Old Northwest Territory, Chicago, 1950; R. M. Lillibridge, Pullman: Town Development in the Era of Eclecticism, JSAH, XII, 3, 1953, pp. 17–22; J. W. Reps, Urban Redevelopment in the 19th Century: The Squaring of Circleville, JSAH, XIV, 4, 1955, pp. 23–26; J. W. Reps, Great Expectations and Hard Times: The Planning of Cairo, Illinois, JSAH, XVI, 4, 1957, pp. 14–21.

Ohio. Ohio was included in the Northwest Territory in 1787. The first permanent settlement was at Marietta in 1788. The Western Reserve was ceded to Ohio in 1800, and Ohio was admitted to the Union in 1803. Columbus became the capital in 1812.

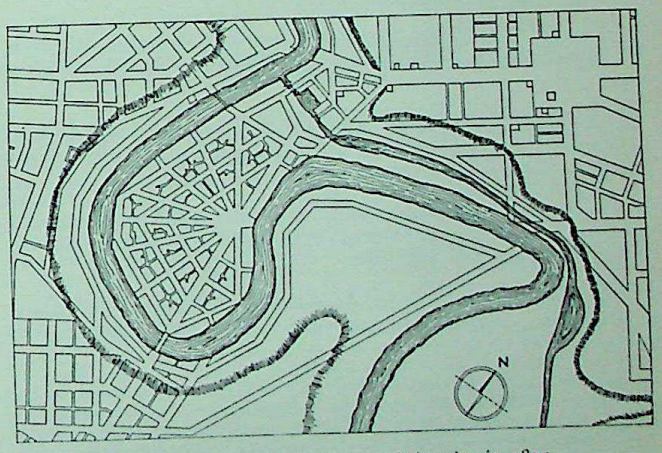
Akron. Akron Art Institute, with American art of the 19th–20th century, European painting of the 15th–18th century, and Oriental art.

Canton. Canton Art Institute, with European and American painting from the Renaissance to the present.

Chillicothe. "Adena," by Benjamin Latrobe, 1806–07, a fine brick mansion in Georgian style; restored.

Cincinnati. St. Peter in Chains, by Henry Walter, 1841–45. – St. Michael's Church, 1847, perhaps related to Godefroy's work in Baltimore. – Isaac M. Wise Temple, by James K. Wilson, 1863–65, in Moorish revival style. – Waterworks Entrance Arch, ca. 1840. – Rookwood Pottery, late 19th century, in Queen Anne style. – Union Terminal, by Alfred Fellheimer and Steward Wagner, completed 1933. – Terrace Hilton Hotel, by Skidmore, Owings & Merrill, 1950, with murals by Joan Miró and Saul Steinberg. – Cincinnati Art Museum, with ancient, Near Eastern, Middle Eastern, and Far Eastern painting, sculpture, and minor arts, European and American 19th- and 20th-century painting, sculpture, and minor arts, primitive art, and musical instruments. – Hebrew Union College, Jewish Institute of Religion, The Jewish Museum, with Jewish ceremonial objects and ancient and modern painting, sculpture, and graphics by Jewish artists. – Taft Museum, located in an outstanding house in Federal style built in 1820, with period furnishings; the Museum contains European painting of the 16th–19th century, Chinese porcelains, French Renaissance enamels, and jewelry.

Cleveland. Dunham Tavern (now a museum), 1830. – Stone House (now a museum), 1838. – Rockefeller Building, by Knox & Elliot, 1903–05; enlarged 1910. – Interesting use of great dome as central feature of a synagogue, in "modern Byzantine" Temple by C. R. Greco, 1924, and a gunite dome on typically futuristic wedge-shaped base by Eric Mendelsohn, 1948–50. – Cleveland Museum of Art, with classical and Oriental art, European and American painting from the Renaissance to the present, Gothic (X, PL. 222) and Renaissance minor arts, and African and Oceanic objects.



Cleveland, plan of the center of the city in 1835.

Columbus. State Capitol, 1839–61, in Greek revival style with Doric columns; Judiciary Annex erected 1899–1901. – Columbus Gallery of Fine Arts, with European painting of the 16th–19th century, early modern European and American painting, sculpture, prints, and minor arts.

Dayton. Air Force Museum (at Wright-Patterson Air Force Base), by Kevin Roche, completed 1964, a soaring wedge-shaped shed. – Dayton Art Institute, with European and American painting and sculpture and classical, Oriental, pre-Columbian, and primitive art.

Gallipolis. Our House (formerly Cushing Tavern), 1819, in Federal style; restored 1933–36.

Gambier. Kenyon College: Old Kenyon, attributed to Bulfinch, 1827, in Gothic style, very rare for him; and Ascension Hall, by the Irish architect William Tinsley, 1857–ca. 1865, in "collegiate Gothic" style.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Lebanon. "Golden Lamb," 1803, a stagecoach inn. – "Glendower," ca. 1840, a fine mansion in Greek revival style with furnishings of the pioneer families of the community. – Nearby is Fort Ancient, an Indian earthwork above the Little Miami River. Built by the Hopewell Indians, who inhabited Ohio between 300 B.C. and A.D. 600, the earthen wall, in places more than 20 feet high, extends for 3½ miles and encloses an area of 100 acres. Within this area are several burial mounds, as well as the sites of two Indian villages built between 1200 and 1630. Archaeological exhibits are displayed at the Fort Ancient Museum.

Lima. Ohio Steel Foundry Company, Roll Shop, by Albert Kahn, Inc., 1939.

Locust Grove. Nearby is Serpent Mound, a so-called "effigy mound"; it is the largest and finest serpent mound in the country. Some authorities attribute the mound to the Adena Indians and believe it was built between 900 and 1300. Serpent Mound is 1,335 feet long; partly within the open jaws of the serpent is an egg-shaped mound 30 feet by 86 feet.

Marietta. Campus Martius Museum, with exhibits portraying life in the frontier communities. One wing of the Museum consists of the Rufus Putnam House, 1788, a fortified log dwelling. To the rear is the old Land Office, 1788, a one-room log structure.

Mount Pleasant. Quaker Meetinghouse, 1814, a large brick structure, with an interesting hanging partition in the gallery.

Oberlin. Oberlin College, Allen Memorial Art Museum, with paintings, sculpture, and minor arts.

Sidney. Hotel Wagner, 1830s, a stagecoach inn. – People's Savings and Loan Association Bank, by Louis Sullivan, 1917–18, a little building with large ornaments.

Somerset. Courthouse, 1829, square hip-roofed type of 17th century, with cupola, a remarkable case of retarded style.

Tallmadge. Congregational Church, 1822–25, in the manner of the New England churches.

Toledo. Toledo Museum of Art, with ancient and medieval art, European and American painting, and an extensive collection of glassware.

Wooster. The College of Wooster, Josephine Long Wishart Museum of Art, with American and European prints and Oriental paintings, bronzes, and ceramics.

Youngstown. Lanternam Mill, 1845. – Butler Museum of American Art, with American art from 1750 to the present and American Indian paintings and drawings.

Zanesville. Art Institute of Zanesville, with European and American painting, sculpture, prints, and Oriental, pre-Columbian, and primitive works.

BIBLIOG. E. G. Squier and E. H. Davis, Ancient Monuments of the Mississippi Valley (Smithsonian Inst. Contributions to Knowledge, I), Washington, 1848; H. A. Shepherd, Antiquities of the State of Ohio, Cincinnati, 1887; C. Thomas, Catalogue of Prehistoric Works East of the Rocky Mountains (BAER, XII), Washington, 1891; G. Fowke, Archaeological History of Ohio, Columbus, 1902; E. O. Randall, The Serpent Mound, Adams County, Ohio, Columbus, 1905; W. K. Moorehead, Fort Ancient: The Great Prehistoric Earthwork of Warren County, Ohio, Phillips Acad. B., IV, 1908, pp. 31–163; E. M. Clark, Ohio Art and Artists, Richmond, 1932; F. J. Roos, Jr., Reflections of New England's Architecture in Ohio, OTNE, XXVIII, 1937, pp. 40–48; FWP, The Ohio Guide, New York, 1940; FWP, Cincinnati: A Guide to the Queen City and Its Neighbors, Cincinnati, 1943; J. B. Griffin, The Fort Ancient Aspect, Ann Arbor, Mich., 1943; R. G. Morgan, Fort Ancient, Columbus, 1946; R. C. Vietzen, The Ancient Ohioans and Their Neighbors, Wahoo, Nebr., 1946; R. S. Potter and H. C. Montgomery, Classical Revival Architecture in Cincinnati, JSAH, VI, 3–4, 1947, pp. 11, 18, 20; E. H. Chapman, City Planning under Mercantile Expansion: The Case of Cleveland, Ohio, JSAH, X, 4, 1951, pp. 10–18; E. H. Chapman, City Planning under Industrialization: The Case of Clevaland, JSAH, XII, 2, 1953, pp. 19–24; A. L. Cummings, The Ohio State Capitol Competition, JSAH, XII, 2, 1953, pp. 15–18; F. J. Roos, Jr., Ohio: Architectural Cross-Road, JSAH, XII, 2, 1953, pp. 3–8; J. H. Rodabaugh, From Mounds to Mansions, B. H. and Philosophical Soc. of Ohio, XIII, 1, 1955, pp. 3–24; AIA (Cleveland Chapter), Cleveland Architecture 1796–1958, New York, 1958; E. H. Chapman, Cleveland: Village to Metropolis, Cleveland, 1964.

Indiana. The French settled Vincennes about 1735. Indiana was part of the Northwest Territory until 1800, when it became the Indiana Territory. Indiana was admitted to the Union in 1816, and Indianapolis became the capital in 1825.

Bloomington. Indiana University, Museum of Art, with European painting, and sculpture, Egyptian, Greek, and Oriental art, and prints and drawings.

Columbus. Tabernacle Church of Christ, by Eliel Saarinen, 1940–42. – North Christian Church, by Eero Saarinen, 1962–64.

Corydon. Old Indiana State Capitol and Harrison County Courthouse (now a museum), 1811–12, in Roman revival style.

Evansville. Evansville Museum of Arts and Sciences, with painting, sculpture, graphic arts, and minor arts.

Indianapolis. Institute for the Blind, by Francis Costigan, from original scheme of W. H. Churchman and John Elder, begun 1832, in neoclassic style. – Christ Episcopal Church, completed 1860. – State Capitol, Edwin May, architect, Adolph Schorror, supervising architect, 1878–88. – Public Library, by Paul P. Cret, 1917, the style setter for classical libraries of the next two decades. – Butler University, Clowes Memorial Hall, by John Johansen, completed 1963. – Herron Museum of Art, with European painting from the Renaissance to the present, Chinese jades and tomb objects, and minor arts.

New Harmony. The town of Harmonie was founded by the Harmonites under George Rapp in 1814; in 1825 Rapp sold the property to Robert Owen, who renamed it New Harmony. Extant are 35 of the original Harmonite buildings, most in the provincial German baroque manner. The Laboratory Building was erected by one of Owen's sons, David Dale, in 1859. The Roofless Church, by Philip Johnson, completed in 1960, is an outstanding example of contemporary architecture; inside is a bronze Virgin by the sculptor Jacques Lipchitz. The sculptures on the monumental gates leading to the church are also by Lipchitz.

South Bend. University of Notre Dame, University Art Gallery, with paintings, sculpture, and graphic arts from the Renaissance to the present, minor arts of the 17th and 18th centuries, and pre-Columbian pottery.

Vincennes. Cathedral of St. Francis Xavier, 1825–ca. 1840, possibly by John Rogers, in any case related to his St. Joseph's Proto-Cathedral at Bardstown, Ky.

BIBLIOG. L. Burns, Early Architects and Builders of Indiana, Indianapolis, 1935; FWP, Indiana: A Guide to the Hoosier State, New York, 1941; W. D. Peat, Pioneer Painters of Indiana, Indianapolis, 1954; W. D. Peat, Indiana Houses of the 19th Century, Indianapolis, 1962; J. M. Dixon, Columbus, Indiana: The Town That Architecture Made Famous, Arch. Forum, CXXIII, 5, 1965, pp. 40–49.

Illinois. The French established settlements at Cahokia in 1699 and Kaskaskia in 1703. Illinois was part of the Northwest Territory until 1800; from that date to 1809 it was included in the Indiana Territory. Illinois was admitted to the Union as a state in 1818. Springfield has been the capital since 1837.

Aurora. Ford House (I, PL. 93), by Bruce Goff, 1950, a great steel umbrella.

Cahokia. Courthouse (originally a dwelling), ca. 1737, a typical French colonial structure; restored. – Church of the Holy Family, 1799, a French colonial construction; restored. – The Cahokia Mounds are not located in the village of Cahokia but about 4 miles from East Saint Louis. The Cahokia site consists of a group of Indian mounds built sometime between 900 and 1500. One of the mounds, constructed in the form of a quadrangular pyramid and measuring about 100 feet in height and about 100 feet at the base, is the largest prehistoric earthwork in the United States.

Champaign-Urbana. University of Illinois: Assembly Hall, by Max Abramovitz, completed 1962, a mushroom-shaped concrete structure; Krannert Art Museum, with European and American painting, sculpture, and graphic arts and Oriental art.

Chester. Nearby in Fort Kaskaskia State Park, is the Pierre Ménard House, ca. 1802, an outstanding example of French colonial architecture, with many original furnishings.

Chicago. Chicago (PL. 137; XIII, PL. 246) was the center of the modern architectural movement, and the Chicago school of the 1880s and 1890s was world-famous. The importance of the city as an

CC-0. Agamnigal Digital Preservation Foundation Chandigarh

architectural center continued almost to World War I thanks to the work of Louis Sullivan and Frank Lloyd Wright (qq.v.). After 1930 Chicago again became influential with Wright's "second career," the work of Ludwig Mies van der Rohe (q.v.), who became Director of Architecture at the Illinois Institute of Technology in 1938, and Skidmore, Owings & Merrill's local production.

Buildings. Henry B. Clarke House, 1836, in classical style; the oldest building in the city. – First Leiter (now 208 W. Monroe) Building, by William Jenney, 1879; considerably remodeled. – Rookery Building, by Burnham & Root, 1885–86. – Glessner House (now Lithographic Technical Foundation), by Henry Richardson, 1885–87, great fenestration in superlative stonework. – Auditorium Building (now Roosevelt University), by Adler & Sullivan, 1886–89, with outstanding ornamentation by Sullivan. The design was directly derived from Richardson's Marshall Field Wholesale Store (I, PL. 84) of 1885–87, which unfortunately has been demolished. – Second Leiter (now Sears, Roebuck & Company) Building, by Jenney, 1889–91. – Reliance Building (I, PL. 86), by Burnham & Root, 1890, extended 1894, classic statement of the skeleton-frame tower. – Monadnock Building, by Burnham & Root, 1891, the last and the tallest of the solid masonry structures in the city. – A group of buildings by Wright: Charnley House, 1891–92; Blossom House (FIG. under WRIGHT), 1892; Heller House, 1897; and Robie House (now part of the University of Chicago; PL. 435), 1908–09. – Museum of Science and Industry (originally Palace of the Fine Arts of the World's Columbian Exposition), by Charles B. Atwood, 1892–93, in neoclassic style; later remodeled. – Gage Building group: two units by Holabird & Roche, 1898; third unit (I, PL. 86) by Sullivan, 1898–99, top four stories added 1902. – Carson Pirie Scott & Company Store (formerly Schlesinger & Mayer Department Store; I, PL. 86), Sullivan's last major work, 1899–1901, extended 1903–04, with Art Nouveau cast-iron ornament (I, PL. 469); additional section, by D. H. Burnham & Company, 1906, following Sullivan's original design. – Our Lady of Lebanon Church (formerly First Congregational Church of Austin), by Guenzel & Drummond, 1908, fine composition of rectangular masses in brick. – Carl Schurz High School, by Dwight Perkins, Sr., 1909–10, with dramatic, high-pitched roofs. – Tribune Tower, by Howells & Hood, the winner of the competition held in 1922, executed 1923–25, in Neo-Gothic style. – University of Chicago: Rockefeller Memorial Chapel, by Bertram Goodhue, 1928, the architect's severe Neo-Gothic at its best; Law School, by Eero Saarinen, 1960. – Daily News (now Daily News Sun-Times) Building, by Holabird & Root, 1928–29. – Adler Planetarium, by Ernest Grunsfeld, Jr., dedicated 1930, splendid classic domed form. – Illinois Institute of Technology campus, planned by Mies in 1939; most of the buildings (X, PL. 59, FIG. 81) are by Mies, 1942–58; a few later ones are by Skidmore, Owings & Merrill. – Group of apartments on or near the lake front by Mies: Promontory Apartments (X, PL. 58), 1949; Lake Shore Drive Apartments (X, PL. 58), 1951; and Esplanade Apartments, 1956–57. – Inland Steel Company Building, by Walter Netsch of Skidmore, Owings & Merrill, 1957–58, with many examples of modern art. – Atrium Houses, by Y. C. Wong, 1961. – University of Illinois campus, designed by Netsch, first units completed 1966.

Museums: The Art Institute of Chicago, with European painting of all periods (particularly French works of the 19th century), prints and drawings from the 15th century to the present, Oriental painting, sculpture, and minor arts (especially Chinese bronzes and Japanese prints), sculpture, glassware, ceramics, textiles, enamels, furniture, and silver from medieval times to the present, Thorne miniature rooms (VIII, PL. 112), and primitive art. – University of Chicago, Oriental Institute, with an outstanding collection of art from the ancient Near East. – George F. Harding Museum, with arms and armor, ship models, musical instruments, and painting and sculpture by Frederic Remington. – Chicago Natural History Museum, with Oceanic art, Roman bronzes, wall paintings, ceramics, and glass, and art of the ancient Near East.

Fort de Chartres. Stone fort built by the French in 1755 and partially destroyed by the British in 1772.

Galena. Old Market House (now an architectural museum), 1845, in Greek revival style; restored.

Highland Park. Willits House (FIG. 859; I, PL. 90), by Frank Lloyd Wright, 1902.

Kankakee. Two "Prairie" houses by Wright of 1900: Hickox House (FIG. 859; I, PL. 90) and Bradley House.

Knoxville. Knox County Courthouse (now an auditorium), by John Mandeville, 1840, in classical revival style; later changes.

Moline. Deere & Company Administrative Center, by Eero Saarinen, completed 1964.

Oak Park. A number of buildings by Frank Lloyd Wright, including his own house, 1889, later changes; Heurtley House, 1902; Cheney House, 1904; and Unity Church (PL. 434; I, PL. 91), 1906–07, his first great public monument and one of the most influential in Europe.

Plano. Farnsworth House (X, PL. 59), by Mies van der Rohe, 1950–51.

River Forest. A number of structures designed by Frank Lloyd Wright, including Winslow House, 1893; Williams House, 1895; and Roberts House, 1908, on a "windmill" plan. – River Forest Women's Club, by Guenzel & Drummond, 1913, directly influenced by Wright.

Riverside. Coonley House, by Wright, 1908. – Coonley Kindergarten (also known as Coonley Playhouse), by Wright, 1912, which prefigures his brilliant design for Midway Gardens in Chicago of 1914 (PL. 434), now demolished.

Springfield. Old State Capitol (now Sangamon County Courthouse), 1837–52, very closely related to the U.S. Patent Office in Washington; additional basement and new dome (copied from present State Capitol) added 1895–1901. – State Capitol, by Alfred Piquenard, 1868–88, in a fully Beaux-Arts Renaissance manner. – Illinois State Museum of Natural History and Art, with contemporary American painting, sculpture, Japanese prints, furniture, and ceramics.

Vandalia. Old State Capitol (now Fayette County Courthouse), 1836, Italianate details on basically Georgian structure.

Waukegan. Lake County Tuberculosis Sanatorium, by Ganster & Pereira, 1939–40.

Wilmette. Baker House, by Frank Lloyd Wright, 1909. – Bahai Temple, by Louis Bourgeois, 1917–21, superstructure 1930–53, a nine-sided building in Persianized Art Nouveau style.

Winnetka. Congregational Church, by Charles Klauder, ca. 1925, successful "modern Gothic," influenced by the Tribune Tower. – Crow Island School, by the Saarinens in collaboration with Perkins & Will, 1940, an exemplary modern school.

BIBLIOG. W. McAdams, Antiquities of Cahokia, or Monks Mound, in Madison County, Illinois, Edwardsville, Ill., 1883; Records of Ancient Races in the Mississippi Valley, St. Louis, 1887; D. I. Bushnell, Jr., Cahokia and Surrounding Mound Groups (Pap. Peabody Mus., III, 1), Cambridge, Mass., 1904; HABS: Northern Illinois, 1716–1867, Chicago, 1934; W. K. Moorehead, The Cahokia Mounds, B. Univ. of Ill., XXVI, 4, 1928, pp. 1–176; HABS: Northern Illinois, 1833–72, Chicago, 1937; P. F. Titterington, The Cahokia Mound Group and Its Village Site Materials, St. Louis, 1938; J. Drury, Old Chicago Houses, Chicago, 1941; T. E. Tallmadge, Architecture in Old Chicago, Chicago, 1941; R. Newcomb, Beginnings of Architecture in Illinois, Ill. State H. Soc. J., XXXIX, 1946, pp. 303–22; FWP, Illinois: A Descriptive and Historical Guide, Chicago, 1947; J. Drury, Old Illinois Houses, Springfield, Ill., 1948; R. E. Grimm, ed., Cahokia Brought to Life, St. Louis, 1950; C. Tunnard, A City Called Beautiful, JSAH, IX, 1–2, 1950, pp. 31–36; C. W. Condit, The Rise of the Skyscraper, Chicago, 1952; G. P. Jensen, Historic Chicago Sites, Chicago, 1953; J. D. Randall, A Guide to Significant Chicago Architecture of 1872 to 1922, Glencoe, Ill., 1958; A. Muschenheim, A Guide to Chicago Architecture, Chicago, 1962; H. D. Duncan, Chicago and Democracy, Totowa, N.J., 1965; M. L. Peisch, The Chicago School of Architecture, London, 1965; A. S. Siegel, Chicago's Famous Buildings, Chicago, 1965.

Michigan. The first permanent settlement was established by the French at Sault Sainte Marie in 1668. Although Michigan was part of the Northwest Territory, the British retained control until 1796. Part of the Indiana Territory from 1800 to 1805, Michigan then became the Michigan Territory and was admitted to the Union as a free state in 1837. Lansing has been the capital since 1847.

Ann Arbor. University of Michigan: Museum of Art, with American and European painting, sculpture, and graphic arts; Kelsey Museum of Archaeology, with Egyptian and Near Eastern art, Greek and Roman antiquities, and Coptic and Islamic textiles.

Bloomfield Hills. Cranbrook School for Boys and Cranbrook Academy of Art, by Saarinen, 1926–43. There are many sculptures at the Academy by Carl Milles, who also designed the fountains. The Galleries of the Academy contain pre-Columbian and Oriental art, contemporary painting, sculpture, graphic arts, and minor arts.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Dearborn. Ford Motor Company Rotunda, by Albert Kahn, 1933, industrial futurism. – The Henry Ford Museum, divided into three main sections: the Fine Arts Galleries, containing magnificent examples of American furniture, textiles, folk art, and lighting devices and American and English ceramics, silver, and glassware; the Street of Early American Shops; and the Mechanical Arts Hall, devoted to agriculture, manufacturing, and transportation. – Greenfield Village, an outdoor museum consisting of nearly 100 buildings, most of them dating from the 19th century, brought together from all sections of America, restored, and fully furnished, showing how Americans worked from colonial times to the recent past.

Detroit. Detroit Public Library, by Cass Gilbert, 1921–23, in Roman classical style. – Temple Beth El, by Albert Kahn, 1922, in a classical style related to Bacon's Lincoln Memorial in Washington, D.C. – Chrysler Corporation Press Shop, Half-Ton Truck Plant, and Export Building, by Albert Kahn, Inc., completed 1938, showing Kahn's use of handsome forms and daringly simple construction applied to industrial needs. – Northland Shopping Center, by Victor Gruen, 1952. – Wayne State University, McGregor Memorial Community Center, by Yamasaki, Leinweber & Associates, 1958. – Lafayette Park, by Mies van der Rohe, 1960, an apartment tower and two-story terrace houses. – The Detroit Institute of Arts, housed in a building by Paul Cret and Zantzinger, Borie & Medary, associated architects, 1922–27, important Roman classical building; contains painting, sculpture, tapestries, ivories, enamels, furniture, glass, metalwork, ceramics, silver, textiles, arms and armor, and theater arts and puppets of every period and phase in the history of art from prehistoric times to the present. The frescoes in the Garden Court were done by Diego Rivera in 1932–33.

Grand Rapids. Jewish Community Center, by Eric Mendelsohn, 1948–52. – Grand Rapids Art Gallery, housed in a fine Greek revival building of 1841, with modern painting (especially the expressionists) and prints.

Lansing. State Capitol, by Elijah E. Myers, 1873–78.

Okemos. Winkler-Goetsch House (FIG. 863), by Frank Lloyd Wright, 1939, a typical Usonian residence.

Sault Sainte Marie. John Johnston House, 1815, a French-Canadian chamfered log structure; restored 1949. – Agency House, 1827.

Warren. General Motors Technical Center (I, PL. 94; IV, PL. 198), by Eero Saarinen, 1951–55.

BIBLIOG. S. F. Kimball, The Old Houses of Michigan, Arch. Record, LII, 1922, pp. 227–40; FWP, Michigan: A Guide to the Wolverine State, New York, 1941; Representative Detroit Buildings, Mich. Soc. of Arch. Weekly B., XXIV, 1950, pp. 33–51; M. M. Quaife, This Is Detroit, Detroit, 1951; H. Taylor, Michigan's Pioneer Architecture, Mich. H., XXXVII, 1, 1953, pp. 19–26; The Henry Ford Museum in Dearborn, Mich., Antiques, LXXIII, 1958, pp. 146–92; P. L. Grigaut, ed., Treasures from the Detroit Institute of Arts, Detroit, 1960; Detroit's New Generation, Progressive Arch., XLII, 1961, pp. 90–117.

Wisconsin. The first permanent settlement was made by the French at Green Bay in 1745. Wisconsin, part of the Northwest Territory, was attached to the Indiana Territory from 1800 to 1809, then to the Illinois Territory until 1818, and then to the Michigan Territory until 1836, when it was organized as the Wisconsin Territory. Wisconsin was admitted to the Union in 1848. Madison is the state capital.

Columbus. Farmers' and Merchants' Union Bank, by Louis Sullivan, 1914–19.

Green Bay. Roi-Porlier-Tank Cottage, 1776, a wattled construction, the oldest house in the state. – Fort Howard Buildings, ca. 1816. – Baird Law Office, ca. 1836, small Greek revival structure. – Cotton House, ca. 1840, fine example of Jeffersonian architecture. – East Moravian Church, 1851–52.

Greenbush. Wade House (a stagecoach inn) and Butternut House, ca. 1850; restored 1953.

Madison. Unitarian Church (FIG. 868), by Frank Lloyd Wright, 1947–52, plan and elevation in triangular form. – State Capitol, by George B. Post & Sons, 1909–17, a handsome structure in Renaissance style.

Middleton. Herbert Jacobs House (FIG. 867), by Frank Lloyd Wright, 1948.

Milwaukee. Kilbourntown House, by Benjamin Church, 1844, in Greek revival style. – Lowell Damon House, 1844–47, New England-style cottage. – War Memorial Center, by Eero Saarinen, 1953–57. – Milwaukee Art Center, with American and European painting of the 19th and 20th centuries, sculpture, graphic arts, and minor arts. – Charles Allis Art Library, with American and European painting, sculpture, and graphic arts, Oriental ceramics and rugs, furniture, and an art reference library.

Racine. Johnson Wax Company Administration Building (PL. 437; I, PL. 415), 1937–39, and Research Laboratory Tower (FIG. 866), 1947–50, both by Frank Lloyd Wright and showing influences of Dutch architecture.

Spring Green. A group of buildings by Wright: Windmill (called "Romeo and Juliet"), 1896; Hillside Home School, 1902; and Taliesin, first built 1911, destroyed by fire and rebuilt 1914, again destroyed by fire and rebuilt 1925.

Watertown. Octagon House, 1854, a huge residence in octagonal form, with a hanging spiral staircase and original furnishings.

Wauwatosa. Greek Orthodox Church, by Frank Lloyd Wright, designed 1956–59, completed 1964, a saucer-shaped structure.

BIBLIOG. P. Butts, Art in Wisconsin, Madison, 1936; FWP, Wisconsin: A Guide to the Badger State, New York, 1941; J. R. Barton, Rural Artists of Wisconsin, Madison, 1948; Helio Laboratory for Johnson Wax Co., Arch. Forum, XCIV, 1951, pp. 75–81; B. K. Whyte, Wisconsin Heritage, Boston, 1954; R. W. E. Perrin, "Fachwerkbau" Houses in Wisconsin, JSAH, XVIII, 1, 1959, pp. 29–33; R. W. E. Perrin, Historic Wisconsin Architecture, Milwaukee, 1960; R. W. E. Perrin, Historic Wisconsin Building, Milwaukee, 1962; R. W. E. Perrin, ed., Wisconsin Architecture, Washington, 1966.

West Central States (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Montana, Wyoming). This land was explored by the French, and missionaries and fur traders were active here in the late 17th and the 18th century. But except for a few towns along the Mississippi, including the important city of Saint Louis, when the area was bought from the French as part of the Louisiana Purchase of 1803 it was for the most part unexplored and unexploited. With the coming of the homesteaders and ranchers and the development of a railroad network the territory was gradually settled. This is not an essentially city-dominated area, nor is the culture urban. The basic pattern has been determined by the farms and grazing lands.

The great city of the area is Saint Louis — the "Gateway to the West" — laid out on a superb site in 1764, with a plan modeled on that of New Orleans. In Saint Louis the farmlands pattern was very significant. A strictly French land measure was used up to the 1790s: fields were laid out by the *arpent de Paris*, and were usually one or two *arpents* wide and, at Saint Louis, 40 *arpents* long. Even today, as Peterson (1949), has pointed out "the location of Saint Louis streets is still dominated by the 18th-century pattern of the plowlands." Throughout most of the area the dominance of the farm surveying system established by President Jefferson may be seen in the pattern of the fields, the farms and sections they make up, and the roads they thus determine.

Remaining from the French period are a few houses in Sainte Genevieve, Mo., and some classical tombs at Bellefontaine Cemetery in Saint Louis. Between 1850 and 1880 almost 500 commercial buildings with cast-iron fronts were erected in Saint Louis, of which a few remain in the old river-front area. Louis Sullivan's Wainwright Building (I, PL. 86; XIII, PL. 218) in Saint Louis of 1890–91 was a milestone in the evolution of modern architecture, influencing all subsequent skyscraper design.

BIBLIOG. C. E. Peterson, Colonial St. Louis; Building a Creole Capital, Saint Louis, 1949; P. C. Henderson, Landmarks on the Oregon Trail, New York, 1953; W. J. Petersen, The Pioneer Log Cabin, The Palimpsest, XLI, 1960, pp. 485–516.

Minnesota. The area east of the Mississippi became part of the Northwest Territory; the area west of the river was part of the Louisiana Purchase. The land was included in various territories until the Minnesota Territory was established in 1849. Minnesota was admitted to the Union in 1858, in which year Saint Paul became the capital.

Collegeville. St. John's Abbey buildings, by Marcel Breuer, 1952–55. The Catholic Church, also by Breuer, was completed in 1964.

Duluth. Civic Center, designed by Daniel Burnham, consisting of the County Courthouse, 1909, City Hall, 1928, and Federal Building, completed 1930. – University of Minnesota, Tweed Gallery, with 19th-century painting (especially the Barbizon school).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Minneapolis. City Hall, by Long & Kees, begun 1887, modeled after Richardson's Allegheny County Courthouse (I, PL. 83) in Pittsburgh. – Flour Exchange Building, by Long & Kees, 1892, 1909, and Butler Brothers Wholesale Store, by Harry Jones, 1906, both very Sullivanian. – W. G. Purcell House, by Purcell & Elmslie, 1914, an original contribution to the Sullivan-Wright school. – Willey House, by Frank Lloyd Wright, 1934. – Mount Olive Lutheran Church, by Walter Huchthausen, 1941–42. – Christ Lutheran Church (I, PL. 95), by Eliel Saarinen, 1949, with brick patterns reminiscent of Auguste Perret. – Neils House, by Frank Lloyd Wright, 1951. – General Mills headquarters, by Skidmore, Owings & Merrill, 1957–58. – Northwestern Life Insurance Company headquarters, by Minoru Yamasaki, 1963–65, with a giant six-story portico. – The Minneapolis Institute of Arts, with European painting from the 14th to the 20th century, American and English period rooms, ceramics, and silver, American painting and minor arts, Oriental art (particularly Chinese bronzes and jades), sculpture of all periods, and prints and drawings. – Walker Art Center, with paintings from the Renaissance to the present, contemporary sculpture and graphic arts, Chinese ceramics and jades, and Greek and Roman minor arts. – University of Minnesota, University Gallery, with contemporary painting, sculpture, prints, and drawings.

Owatonna. National Farmers' Bank (now Security Bank and Trust Company), by Louis Sullivan, 1907–08; remodeled in the 1950s.

Rochester. Franklin Substation, by Ellerbe & Company, 1950–51, a utility substation rendered as an elegant urban cube. – International Business Machines Center, by Eero Saarinen, 1957–58.

Saint Paul. Muskego Church (on the campus of Luther Theological Seminary), 1843–44, a log meetinghouse built by Norwegian settlers in Muskego, Wis., and moved here in 1904. – Pioneer Building, by Solon S. Beman, 1889; four top floors added later. – James J. Hill House (now Catholic Archdiocese of Saint Paul building), by Peabody & Stearns, 1889–91, in the manner of Richardson. – State Capitol, by Cass Gilbert, 1896–1904, in neoclassic style. – Cathedral of St. Paul, by Emmanuel Masqueray, 1906–15, with lavish neobaroque interior decoration. – Mount Zion Temple and Community Center (XIII, FIG. 573), by Eric Mendelsohn, 1950–54. – St. Paul Gallery and School of Art, with 20th-century painting, sculpture, and drawings and handicrafts.

Wayzata. Richard S. Davis House (I, FIG. 275), by Philip Johnson, 1954.

Winona. Merchants' National Bank, by Purcell & Elmslie, 1911–12, in the Sullivan manner.

BIBLIOG. FWP, The Minnesota Arrowhead Country, Chicago, 1941; FWP, Minnesota: A State Guide, 2d ed., New York, 1954; H. E. McClure, Twin Cities Architecture: Minneapolis and St. Paul, 1820–1955, New York, 1955; W. V. O'Connor, A History of the Arts in Minnesota, Minneapolis, 1958; D. R. Torbert, ed., A Century of Minnesota Architecture, Minneapolis, 1958; H. F. Koeper, Historic St. Paul Buildings, Saint Paul, 1964.

Iowa. The land was part of the Louisiana Purchase and was included in various territories from 1812 to 1838, when the Iowa Territory was organized. The first permanent settlement was made at Dubuque in 1833. Iowa was admitted to the Union in 1846; Des Moines became the state capital in 1857.

Cedar Rapids. St. Paul's Methodist Church, by Louis Sullivan, 1913–14.

Davenport. Davenport Municipal Art Gallery, with European, American, and Mexican colonial painting and sculpture, Japanese prints, and contemporary prints and drawings. – Davenport Public Museum, with Indian artifacts and archaeological collections from Egypt, Greece, Rome, and the Orient.

Decorah. Norwegian-American Historical Museum, with objects belonging to the pioneers who came from Norway and an outdoor museum of two Norwegian pioneer homes, a schoolhouse, a mill house, and a drying house for grain.

Des Moines. State Capitol, by Cochrane & Piquenard, 1871–86. – Drake University: Harvey Ingham Hall of Science and Pharmacy Building, by Eero Saarinen, 1950. – Des Moines Art Center, located in a building by Eero Saarinen, 1944–48, with European and American painting and sculpture (particularly contemporary).

Fort Dodge. Blanden Memorial Art Gallery, with contemporary European and American painting and sculpture.

Grinnell. Merchants' National Bank (now Poweshiek County Bank), by Louis Sullivan, 1914.

Iowa City. Old State Capitol (now part of the University of Iowa), by John F. Rague, 1839.

Mason City. City National Bank Building and Hotel, by Frank Lloyd Wright, 1909–10.

BIBLIOG. FWP, Iowa: A Guide to the Hawkeye State, New York, 1938 (2d ed., 1949); Z. B. Ness and L. Orwig, Iowa Artists of the First Hundred Years, Des Moines, 1939.

Missouri. The first permanent settlement was made by the French about 1735 in Sainte Genevieve. Missouri was part of the Louisiana Purchase, and was organized as a separate territory in 1812. Missouri was admitted to the Union in 1821. In 1826 Jefferson City became the capital.

Jefferson City. State Capitol, by Tracy & Swartout, 1913–24, with a dome resembling that of the U.S. Capitol.

Kansas City. St. Francis Xavier Catholic Church, by Barry Byrne, ca. 1950. – Business Men's Assurance Company Tower, by Skidmore, Owings & Merrill, 1964. – William Rockhill Nelson Gallery of Art and Mary Atkins Museum of Fine Arts, with sculpture from the ancient Near East, Egypt, Greece, and Rome, Byzantine art, European and American painting and sculpture from the Romanesque era to the present, period rooms, and minor arts, Oriental painting, ceramics, jades, and sculpture, and primitive art.

Sainte Genevieve. A fine group of residences in French colonial style dating from the 1770s and 1780s: Louis Bolduc House, Jean Baptiste Vallé House, Janis-Ziegler House (originally Green Tree Tavern), Jacques Guibourd House, and St. Gemme-Amoureaux House.

Saint Louis. Secular buildings: Old Courthouse, main block, by Henry Singleton, 1839–51, in Greek revival style; enlarged 1853–59; dome, by William Rumbold, 1861–62, in Renaissance style. – De Menil House, 1840s; Ionic façade and iron railings added 1863. – Eads Bridge, by James B. Eads, 1867–74, the world's first steel-truss bridge. – Wainwright Building (I, PL. 86; XIII, PL. 218), by Adler & Sullivan, 1890–91. – Wainwright Tomb (in Bellefontaine Cemetery), by Louis Sullivan, 1892, a domed cube with rich carving. – City Hall, by Eckel & Mann, 1896, in French Renaissance style, modeled after the Hôtel de Ville in Paris. – Union Station, by Theodore C. Link, 1891–96, in Romanesque style, inspired by the architecture of Carcassonne, France; in front of the building is a fountain by Carl Milles, 1940. – Central Public Library, by Cass Gilbert, 1912, in Italian Renaissance style. – Climatron at Missouri Botanical Gardens, by R. Buckminster Fuller with Murphy & Mackey, architects, 1960, unpartitioned geodesic dome. – McDonnell Planetarium, by Hellmuth, Obata & Kassabaum, 1963, a flared thin shell. – Jefferson National Expansion Memorial, Gateway Arch, designed in 1948 by Eero Saarinen, completed 1965, stainless-steel arch in the shape of an inverted weighted catenary curve. – Busch Memorial Stadium, by Edward D. Stone, 1966.

Churches: Basilica of St. Louis, King of France (Old Cathedral), by Morton & Laveille, 1830–34, in Greek revival style, with an octagonal spire topping a square belfry; renovated 1963. – Christ Church Cathedral, by Leopold Eidlitz, 1867, early English Gothic; later additions; restored 1961–63. – Second Presbyterian Church, by Shepley, Rutan & Coolidge, 1896, following Richardson's Trinity Church, Boston (I, PL. 84), in design; auditorium added by Theodore C. Link, 1899. – St. Louis Cathedral, by Barnett, Haynes & Barnett, 1907–14, in modified Byzantine style.

Museum: City Art Museum of St. Louis, housed in the former Palace of Arts building, designed by Cass Gilbert for the Louisiana Purchase Exposition of 1904; the Museum contains painting, sculpture, graphic arts, and minor arts from ancient times to the present.

In the environs are B'Nai Amoona Synagogue, by Eric Mendelsohn, 1946–50; the Lambert-St. Louis Municipal Airport, by Hellmuth, Yamasaki & Leinweber, 1953–56, one of the first thin-shell dome structures in the United States, with sculpture by Henry Moore and Harry Bertoia, and the Chapel of the Benedictine Priory, by Hellmuth, Obata & Kassabaum, 1962, three tiers of white thin-shell concrete arches.

BIBLIOG. J. S. Ankeney, A Century of Missouri Art, Mo. H. Rev., XVI, 1922, pp. 481–501; J. A. Bryan, Missouri's Contribution to American Architecture, Saint Louis, 1928; FWP, Missouri: A Guide to the "Show Me" State, Chicago, 1941 (2d ed., 1954); J. W. Reps, New Madrid on the Mississippi, JSAH, XVII, 1, 1959, pp. 21–26; J. A. Bryan, Lafayette Square, Saint Louis, 1962; D. J. Caldwell, ed., Missouri Historic Sites Catalogue, Columbia, Mo., 1963; E. M. Coyle, Old St. Louis Homes, Saint Louis, 1964.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

North Dakota. This was the northern part of the Dakota Territory, which was organized in 1861. In 1889 North Dakota became a separate state and was admitted to the Union in that year. Bismarck is the capital.

Bismarck. State Capitol, by Joseph B. DeRemer and William F. Kurke, Holabird & Root, associated architects, 1932–34, the only capitol building to break entirely with the classical form established in the early 19th century, with a slab tower housing the executive offices and a low cylinder for the legislative offices.

BIBLIOG. K. W. Simons, North Dakota's State Capitol, Bismarck, 1934; FWP, North Dakota: A Guide to the Northern Prairie State, New York, 1950.

South Dakota. This constituted the southern part of the Dakota Territory from 1861 to 1889. South Dakota was admitted to the Union in 1889, and Pierre became the capital then.

Mitchell. Corn Palace, 1921; domes and steeples added ca. 1940, giving it the aspect of a latter-day countrified Brighton.

Mount Rushmore. In the Black Hills in the Mount Rushmore National Memorial (X, PL. 147), by Gutzon Borglum, 1927–41; the heads (each 60 feet high) of four presidents carved into the granite face of the mountain.

Pierre. State Capitol, 1905–10, in neoclassic style.

BIBLIOG. FWP, A South Dakota Guide, Pierre, 1938.

Nebraska. Nebraska was part of the Louisiana Purchase and then of the Missouri Territory, and became a separate territory in 1854. Nebraska was admitted to the Union as a free state in 1867, when Lincoln became the capital.

Lincoln. State Capitol, by Bertram Goodhue, 1920–33. – University of Nebraska, Sheldon Memorial Art Gallery, housed in a beautiful building by Philip Johnson, completed 1963, containing contemporary painting, sculpture, graphic arts, and ceramics.

Minden. Pioneer Village, a group of 22 buildings with displays illustrating the evolution of progress since 1830.

Omaha. Joslyn Art Museum, housed in the Joslyn Memorial, by John MacDonald, completed 1931, with classical art, European painting, sculpture, and graphic arts, frontier arts, and American Indian material.

BIBLIOG. C. Bucklin, ed., Nebraska Art and Artists, Lincoln, 1932; FWP, Nebraska: A Guide to the Cornhusker State, New York, 1939; W. Payne, Examples of Architectural Style in Omaha, Omaha, 1948; H. F. Cunningham, The Capitol, Lincoln, Nebraska: An Architectural Masterpiece, Lincoln, 1954.

Kansas. Part of the Louisiana Purchase, Kansas was organized as a separate territory in 1854. Kansas was admitted to the Union as a free state in 1861, at which time Topeka became the capital.

Fairway. Shawnee Methodist Mission, an early Indian mission with three fine brick buildings erected between 1839 and 1845 and containing period furnishings.

Larned. Nearby is Fort Larned, an excellent example of a frontier military post, consisting of nine massive stone buildings erected in the 1860s.

Lawrence. University of Kansas Museum of Art, with European and American painting and sculpture and European and Oriental minor arts.

Topeka. State Capitol, by E. Townsend Mix, 1866–70; wings 1873, 1879. – Washburn University, Mulvane Art Center, with contemporary regional painting, sculpture, and prints.

Wichita. Located in Riverside Park is the Cowtown, consisting of several original buildings moved here to illustrate an old cowtown, including the Munger House of the 1860s and the original Presbyterian church and first jail, both dating from 1872. – Wichita Art Museum, with contemporary American art and prints.

BIBLIOG. FWP, Kansas: A Guide to the Sunflower State, New York, 1939 (2d ed., 1949).

Montana. Montana was part of the Louisiana Purchase and later included in various territories. Established as the Montana Territory in 1864, Montana was admitted to the Union in 1889, at which time Helena became the capital.

Browning. Museum of the Plains Indian, with American Indian arts and handicrafts.

Helena. State Capitol, by C. E. Bell and J. H. Kent, 1898–1902. – Historical Society of Montana, with painting and sculpture by Charles M. Russell and other Western artists and Indian artifacts.

BIBLIOG. FWP, Montana: A State Guide Book, New York, 1939.

Wyoming. This was part of the Louisiana Purchase. The British and Americans occupied the area jointly between 1818 and 1846. The Wyoming Territory was organized in 1868; Wyoming was admitted to the Union in 1890. Cheyenne is the state capital.

Cheyenne. State Capitol, by D. W. Gibbs & Company, 1887–88; wings added 1890 and enlarged 1915.

Cody. Buffalo Bill Historical Center, comprising the Buffalo Bill Museum, with Buffalo Bill memorabilia and items relating to the West, and The Whitney Gallery of Western Art, with American Indian material and works by Frederic Remington and Charles M. Russell.

Fort Laramie. Of the original 65 buildings, 25 remain, the first of which was erected in 1834. This was a fur-trading center from 1834 to 1849 and a fort until 1890, when the post was abandoned. Recently restored, the buildings include a sutler's store, officers' quarters, guardhouse, and barracks.

BIBLIOG. FWP, Wyoming: A Guide to Its History, New York, 1941.

South Western States (Colorado, New Mexico, Arizona, Utah, Nevada). Though the Spaniards had explored part of this region in the 1530s and 1540s, it was only with the establishment of Santa Fe, N. Mex., in 1609–10 (on a plan now thought to have been sent out from Madrid) that permanent settlement began (PL. 136), and it was largely confined to a few Spanish missions in New Mexico and Arizona until the late 18th century. The Spanish colonial architecture in New Mexico is a mixture of Spanish and Indian influences: the plans of the missions were European but the Indian workmen employed native construction techniques and decorative details. A peculiar development of mission architecture in New Mexico was the placement of the altar at the west and a transverse clerestory window between the roof of the nave and the sanctuary so that the morning light was cast on the altar.

In the late 18th century many military posts were erected along the trails that went east to New Orleans (especially during that city's Spanish rule) and west to the missions of Spanish California. American settlers came to the area in the 19th century, and their main urban type was the fortress-post as late as the 1870s. The greatest impetus to their influx was the Colorado Gold Rush of 1859, which, passing, left some permanent settlements, such as Denver, and many ghost towns and empty mining camps. The camps, towns, and cities of the American settlers almost universally employed a grid plan. Some of these were remarkably bad, especially when the town was laid out in a hurry, but occasionally the grid was thought out in great detail, as in the plan of Salt Lake City (settled by the Mormons in 1847), which not only provided open spaces and civic structures of great merit but also alternated the axial direction of the rectangular lots so that every street had equal numbers of lots fronting on it.

Notable in the creation of architecturally unified groups have been the plans and buildings of the mining towns of Ajo, Ariz., by Kenyon & Maine, 1915, and Tyrone, N. Mex., by Bertram Goodhue, 1917. The University of Colorado campus in Boulder was planned by Klauder & Day in the 1920s in Mediterranean baroque style.

One of Frank Lloyd Wright's most extraordinary houses was created in the Arizona desert — Taliesin West (PL. 437, FIG. 863; VIII, PL. 116) — his winter living and teaching quarters. He also built a number of other houses in Arizona.

BIBLIOG. C. Hallenbeck, Spanish Missions of the Old Southwest, Garden City, N.Y., 1926.

Colorado. The eastern part of Colorado was included in the Louisiana Purchase; the rest was part of Mexico and Texas. Colorado was organized as a territory in 1861, and admitted to the Union in 1876. Denver is the capital.

Boulder. National Center for Atmospheric Research, by I. M. Pei, completed 1966, bold composition in concrete.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Central City. A mining camp built in the 1860s, it became a ghost town after the gold in the mines was exhausted. Remaining structures include the Victorian opera house (restored and operating), assay offices, St. Paul's Church (erected by Cornish miners), a bank, hotels, and stores.

Colorado Springs. U.S. Air Force Academy, by Walter Netsch of Skidmore, Owings & Merrill, 1957–60. – Colorado Springs Fine Arts Center, with European and American painting and sculpture; the Taylor Museum, located in the Center, contains Spanish-American religious art, American Indian art, and Latin American handicrafts.

Denver. State Capitol, by E. E. Myers, 1890–96, adapted from the U.S. Capitol. – Red Rocks Amphitheater, by Burnham Hoyt, 1941–44, carved in the living rock. – Mile High Center, by I. M. Pei, completed 1955. – Denver Art Museum, with European painting of the 14th–16th century, period rooms, American Indian arts and crafts, and ancient Mediterranean, Oriental, Oceanic, and African arts. – Colorado State Museum, with Mesa Verde archaeological exhibits and Indian costumes, weapons, and crafts.

Mesa Verde National Park. Here are located Cliff Palace and Spruce Tree House, two groups of cliff dwellings dating from the Classic or Great Pueblo phase of the Anasazi culture (1050–1300). These multistoried dwellings, with round, rectangular, or triangular chambers and round and square towers, accommodated hundreds of people. In the courtyard are numerous ceremonial chambers, or kivas (see X, cols. 698–699).

Bibliog. W. R. Birdsall, Cliff-Dwellings of the Cañons of the Mesa Verde, J. Am. Geog. Soc., XXIII, 1891, pp. 584–620; F. H. Chapin, Land of the Cliff-Dwellers, Boston, 1892; G. Nordenskiöld, The Cliff Dwellers of the Mesa Verde (trans. D. L. Morgan), Stockholm, 1893; J. W. Fewkes, Antiquities of Mesa Verde National Park: Spruce-Tree House, Washington, 1909; J. W. Fewkes, Antiquities of Mesa Verde National Park: Cliff Palace, Washington, 1911; D. Watson, Cliff Palace: The Story of an Ancient City, Ann Arbor, Mich., 1946; FWP, Colorado: A Guide to the Highest State, New York, 1941 (2d ed., 1951); S. Davis and B. Baldwin, Denver Dwellings and Descendants, Denver, 1963.

New Mexico. The land was explored by the Spaniards during the 16th century, and in 1609–10 they founded Santa Fe (pl. 136), which is the oldest capital city in the United States. New Mexico was ceded by Mexico in 1848, and became a territory in 1850. New Mexico was admitted to the Union in 1912.

Acoma. One of the 18 inhabited Indian pueblos in the state. The great Church of S. Estevan and the *convento* (living quarters), a fine example of a Spanish colonial mission center, date from ca. 1630 to ca. 1642. The end wall of the sanctuary and the corbels in the church were painted by the Pueblo Indians.

Aztec Ruins National Monument. The pueblo here was built during the Classic or Great Pueblo phase of the Anasazi culture (1050–1300), and accommodated over 1,000 people. The complex is rectangular in shape and is surrounded by a wall. The Great Kiva (reconstructed in 1934) is 50 feet in diameter, with an entrance from the side rather than from the roof.

Chaco Canyon National Monument. There are ruins of 12 great pueblos, as well as many smaller ones, in Chaco Canyon; these pueblos were constructed during the Classic or Great Pueblo phase of the Anasazi culture (1050–1300). Pueblo Bonito and Chetro Ketl are the most important pueblos. Pueblo Bonito was constructed in the form of an amphitheater, with the more than 600 dwelling units, four or five stories high, built around a court that contained about 25 circular kivas. Chetro Ketl was of the same type; the Great Kiva here is 60 feet in diameter, with the entrance from the side instead of the roof.

Coronado State Monument. This contains the partially restored ruins of the Indian pueblo of Kuaua, dating from the Regressive Pueblo phase of the Anasazi culture (1300–1692). The wall paintings from the kivas have been removed to the Hall of Ethnology in Santa Fe.

Laguna. One of the 18 inhabited Indian pueblos in the state. The Church of S. José, 1699–1706, contains superb Pueblo Indian murals on the walls of the nave depicting the sun, rain, and thunder. The three walls of the sanctuary are decorated with sun and moon symbols, floral and geometrical patterns, and paintings of saints and the Trinity. The church is preceded by a walled court. Attached to the building are a *convento* and a baptistery.

Ranchos de Taos. Church of S. Francisco de Asís, 1772, a massive adobe structure, with a fine altarpiece by Manuel Aragon.

Roswell. Roswell Museum and Art Center, with 19th- and 20th-century painting and sculpture of the Southwest and ethnological and archaeological collections.

Santa Fe. Palace of the Governors (now part of the Museum of New Mexico), 1610–14, partially destroyed in 1680 and repaired in 1692; many later changes; recently restored from a plan in the British Museum. This is a long, low, single-storied structure with an open porch running the length of the building and an enclosed patio; it was constructed by local Indians in adobe brick. – Church of S. Miguel, before 1680, with ruins of earlier structures under the church. – Cathedral of St. Francis, 1869. – Church of Cristo Rey (Christ the King), 1939, a large adobe structure, with a superb stone altarpiece of 1761 that was originally in the Chapel of Our Lady of Light. – State Capitol, a modern structure by W. C. Kruger & Associates incorporating parts of the earlier domed building. – Museum of New Mexico, composed of the Palace of the Governors, with archaeology of the Southwest; Museum of International Folk Art, with examples from over 50 countries; Fine Arts Museum, with regional paintings and sculpture; Hall of Ethnology, with modern Indian crafts and wall paintings from the kivas at Kuaua; and Laboratory of Anthropology, with Indian pottery, textiles, and jewelry. – Museum of Navajo Ceremonial Art, with sand paintings and ritual objects.

Taos. University of New Mexico, Harwood Foundation, with contemporary regional paintings, Spanish colonial religious art, Indian artifacts, and Persian miniatures. – In the environs is Taos Pueblo (San Gerónimo de Taos), with old and new Indian structures, including two community houses five stories high (ca. 1540) that are among the finest examples in the Southwest.

Trampas. Church of S. Tomás, ca. 1760, with important carved and painted woodwork.

Bibliog. W. H. Jackson, Report on the Ancient Ruins Examined in 1875 and 1877, Ann. Rep. of the U.S. Geological Survey of Territories, X, 1878, pp. 411–50; L. B. Prince, Spanish Mission Churches of New Mexico, Cedar Rapids, Iowa, 1915; G. H. Pepper, Pueblo Bonito (APAmM, XXVII), New York, 1920; E. H. Morris, The House of the Great Kiva at the Aztec Ruin, APAmM, XXVI, 1921, pp. 109–38; E. H. Morris, Burials in the Aztec Ruin: The Aztec Ruin Annex, APAmM, XXVI, 1924, pp. 139–257; E. H. Morris, Notes on Excavations in the Aztec Ruin, APAmM, XXVI, 1928, pp. 259–420; E. L. Hewett, The Chaco Canyon and Its Monuments, Albuquerque, 1936; G. Kubler, The Religious Architecture of New Mexico, Colorado Springs, Colo., 1940 (repr., Chicago, 1964); E. Knee, Santa Fe, New York, 1942; E. L. Hewett and R. G. Fischer, Mission Monuments of New Mexico, Albuquerque, 1943; M. D. Luhan, Taos and Its Artists, New York, 1947; FWP, New Mexico: A Guide to the Colorful State, 2d ed., New York, 1953; N. M. Judd, The Material Culture of Pueblo Bonito (Smithsonian Misc. Coll., CXXIV), Washington, 1954; F. A. Domínguez, The Missions of New Mexico (1776: ed. and trans. E. B. Adams and A. Chavez), Albuquerque, 1956; J. E. Espinosa, Saints in the Valleys: Christian Sacred Images in the History, Life and Folk Art of Spanish New Mexico, Albuquerque, 1960; V. D. Coke, Taos and Santa Fe: The Artist's Environment, 1882–1942, Albuquerque, 1963; B. Bunting, Taos Adobes: Spanish Colonial and Territorial Arch. of the Taos Valley, Sante Fe, 1964.

Arizona. The Spaniards explored the area in the 16th century. The northern part of Arizona was ceded by Mexico in 1848 and the southern part in 1853. In 1863 the Arizona Territory was organized. Arizona was admitted to the Union in 1912, when Phoenix became the state capital.

Awatobi. In the Hopi Indian Reservation are the remains of the pueblo of Awatobi, dating from the Regressive Pueblo phase of the Anasazi culture (1300–1692). The interiors of the kivas were decorated with noteworthy wall paintings representing divinities, animal spirits, and offerings and with abstract designs (see III, col. 579, and X, col. 704).

Casa Grande National Monument. The pueblo dates from the Classic phase of the Hohokam culture (1200–1400). Originally four stories high, only two floors of the pueblo still stand. The complex is surrounded by thick walls made of large blocks of a mixture of adobe and gravel.

Montezuma Castle National Monument. The cliff dwellings, dating approximately from the 14th century, are halfway up the face of a perpendicular cliff. This community house, very well preserved, has five stories and housed over 300 people.

Phoenix. State Capitol, by J. Reilly Gordon, 1900; later additions. – Luhrs Tower, by Trost & Trost, ca. 1940, Wrightian orna-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

ment on typical New York setback-style skyscraper. – Phoenix Art Museum, with modern European and American art and Chinese art. – Heard Museum, with primitive art and handicrafts of the Indians of the Southwest. – Nearby is the Pueblo Grande Museum, preserving the ruins of a Hohokam village.

Scottsdale. Taliesin West (PL. 437, FIG. 863; VIII, PL. 116), Frank Lloyd Wright's great complex of winter living and teaching quarters for his family and students, begun 1938 and always in process of growth and change during the architect's lifetime. – David Wright House (I, PL. 424), also by Wright, 1952, a circular patio house.

Tempe. Arizona State University: Grady Gammage Auditorium, by Wright, designed 1957–59, completed 1964, a striking round building with scalloped edges, approached by two flying ramps; Collection of American Art, with American painting and sculpture and Indian art.

Tombstone. Remaining from the time when this was a mining center are Cochise County Couthouse, by Frank Walker, 1881–82, and St. Paul's Episcopal Church, 1882, a Victorian Gothic structure in adobe brick.

Tucson. University of Arizona Art Galley, with Italian Renaissance art and contemporary American, European, and Oriental art. – Outside the city is S. Xavier del Bac, erected in 1784–97 and restored in 1906. This is one of the finest Spanish mission churches in America. The main section of the façade, of red brick, is Churrigueresque; it is flanked by two towers of white stucco. The interior, decorated in baroque style, contains an elaborate polychrome altar screen.

Tumacacori National Monument. The Church of S. José was built in 1785–1800. The entrance is flanked by columns, above which is a steep pediment resting on columns; the façade is topped with a semicircular gable. The interior and the roof were burned in 1840 and have not been restored.

BIBLIOG. A. F. Bandelier, Contributions to the History of the South-Western Portion of the United States (Pap. Archaeol. Inst. of America, Am. Ser., V), Cambridge, Mass., 1890; A. F. Bandelier, Final Reports of Investigations among the Indians of the South-Western United States, Carried On Mainly in the Years from 1880 to 1885 (Pap. Archaeol. Inst. of America, Am. Ser., III–IV), Cambridge, Mass., 1890–92; J. W. Fewkes, Archaeological Expedition to Arizona in 1895, BAER, XVII, 1895–96, pp. 519–752; C. Mindeleff, Casa Grande Ruin, BAER, XIII, 1896, pp. 289–319; C. Mindeleff, The Repair of Casa Grande Ruin, Arizona, BAER, XV, 1897, pp. 317–49; E. Cones, On the Trail of a Spanish Pioneer: The Diary and Itinerary of Francisco Garcés, 1775–76, 2 vols., New York, 1900; J. W. Fewkes, Casa Grande, Ariz., BAER, XXXVIII, 1906–07, pp. 25–180; P. Onell, Mission Architecture as Exemplified in San Xavier del Bac, Tucson, 1919; E. T. Pinkley, Casa Grande, Tucson, 1927; J. O. Brew, The First Two Seasons at Awatobi, AmAnt, III, 1937, pp. 122–37; J. O. Brew, Preliminary Report of the Peabody Museum Awatobi Expedition of 1937, AmA, V, 1939, pp. 103–14; FWP, Arizona: A State Guide, New York, 1940 (4th ed., 1966); FWP, Mission San Xavier del Bac, Arizona: A Descriptive and Historical Guide, New York, 1940; J. O. Brew, Preliminary Report of the Peabody Museum Awatobi Expedition of 1939, Plateau, XIII, 1941, pp. 37–48; R. G. Montgomery, W. Smith, and J. O. Brew, Franciscan Awatovi (Pap. Peabody Mus., XXXV), Cambridge, Mass., 1949; W. Smith, Kiva Mural Decorations at Awatovi and Kawaika-a (Pap. Peabody Mus., XXXVI), Cambridge, Mass., 1952; Montezuma Castle Archaeology, 2 vols., Globe, Ariz., 1954; N. W. Newhall, Mission San Xavier del Bac, San Francisco, 1954; A. H. Schroeder and H. F. Hastings, Montezuma Castle National Monument, Washington, 1958.

Utah. The land was explored by the Spaniards in the 16th century, and was ceded by Mexico in 1848. The Mormons (more technically, members of the Church of Jesus Christ of Latter-day Saints) reached Utah in 1847 and founded Salt Lake City. The Utah Territory was organized in 1850. Utah was admitted to the Union in 1896. Salt Lake City is the capital.

Brigham City. Mormon Tabernacle, 1876, Mormon-Gothic details superimposed on a plain meetinghouse.

Logan. Mormon Temple, in the distinctive Mormon-Gothic style.

Manti. Mormon Temple, a Mormon-Gothic structure.

Saint George. Mormon Temple, 1871–77, in Mormon-Gothic style. – Mormon Tabernacle, in colonial style.

Salt Lake City. Two residences built by Brigham Young: Beehive House, a beautiful two-story colonnaded and galleried structure, and Lion House, a domestic stone dwelling. – Mormon Temple, by Truman O. Angel, 1853–83, the most spectacular of the Mormon-Gothic structures; interior, by Joseph Young, 1883–93. – Mormon Tabernacle, conceived by Brigham Young, built by William H. Folsom and Henry Grow, 1865–67, a great domed structure. – Z.C.M.I. Department Store, 1868, with a cast-iron front. – State Capitol, by Richard Kletting, 1913–16, a fine colonnaded building of granite and marble.

BIBLIOG. F. K. Winkler, Building in Salt Lake City, Arch. Record, XXII, 1907, pp. 15–37; FWP, Utah: A Guide to the State, New York, 1941 (2d ed., 1954); J. L. Haseltine, ed., 100 Years of Utah Painting, Salt Lake City, 1965 (cat.); D. Hill, Early Mormon Churches in Utah, Dialogue, I, 3, 1966, pp. 12–20.

Nevada. Part of the region ceded by Mexico in 1848, Nevada became part of the Utah Territory until 1861, when it was organized as the Nevada Territory. Nevada was admitted to the Union in 1864. Carson City is the capital.

Carson City. State Capitol, by Peter Cavanaugh, 1870.

Virginia City. A mining camp established when the Comstock Lode was discovered, now a ghost town. Remaining from this period is St. Mary's in the Mountains, 1877, in Neo-Gothic style.

BIBLIOG. FWP, Nevada: A Guide to the Silver State, Portland, Ore., 1940.

North Western States (Idaho, Washington, Oregon). These states formed part of what was known as the Oregon Country from about 1818 to 1846; the area was claimed by the British and the United States. In 1846 Great Britain ceded the land below the 49th parallel to the United States.

As their cities show, the settlers looked east for inspiration. Portland, laid out in 1844, reflected the New England towns familiar to its planner, Amos L. Lovejoy of Boston. The brick architecture of Philadelphia was influential, and the bricks used to construct the Old Whatcom County Courthouse in Bellingham, Wash., were shipped from Philadelphia in 1858. The influence of Saint Louis is seen in the buildings with cast-iron fronts. It was to Stanford White of McKim, Mead & White in New York that the proprietors of the Portland Hotel turned in 1885 when they wished to remodel it, and White sent his assistants William M. Whidden and Ion Lewis to supervise the construction. The L. C. Smith Building in Seattle, for many years the tallest building in the west, was erected by the New York firm Gaggin & Gaggin in 1914 and was inspired by New York's Woolworth Building.

The painting and architecture of the present, though clearly related to international trends, draw deeply on Oriental influence, particularly the planar architecture and painting of Japan. The designs of architects such as Pietro Belluschi and John Yeon are sensitive to the regional landscape, and the houses and churches they erected in Oregon and Washington are appropriate to the terrain.

BIBLIOG. T. R. Garth, Early Architecture in the Northwest, Pacific Northwest Q., 1947, pp. 215–32.

Idaho. Included in the Oregon Territory in 1848, then in the Washington Territory in 1853, Idaho became a separate territory in 1863. Idaho was admitted to the Union in 1890, at which time Boise became the capital.

Boise. U.S. Assay Office, 1872, a stone building in eclectic style. – State Capitol, by Turtelott & Hummell, 1906–12. – Boise Gallery of Art, with contemporary paintings and prints.

Cataldo. Old Mission of the Sacred Heart, ca. 1842, built by Jesuit priests and their Indian converts.

Idaho Falls. Mormon Temple, completed 1945, Mormon-Gothic in a striking modern form.

BIBLIOG. FWP, Idaho: A Guide in Word and Picture, 2d ed., New York, 1950.

Washington. This area was organized as the Washington Territory in 1853. Washington was admitted to the Union in 1889. Olympia is the state capital.

Olympia. Old State Capitol, by Willis Ritchie, 1893, in Romanesque style. – State Capitol group of buildings, by Wilder & White, with Bebb & Gould as associated architects, 1911–35; the Legislative Building has a dome 287 feet high.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Seattle. Seattle Museum of Art, with Near and Far Eastern art, pre-Columbian and primitive art, classical antiquities, European painting and sculpture from the 14th–18th century, and contemporary regional painting and sculpture. – Charles and Emma Frye Art Museum, with European and American painting of the 19th–20th century. – University of Washington: Henry Art Gallery, with French and American painting of the 19th–20th century, prints, ceramics, and sculpture; Washington State Museum, with primitive art of the Northwest and the Pacific area.

Vancouver. Vancouver Number Two Barracks, dating from the time when a fort and trading post was established here in 1825 by the British and was reorganized as a U.S. Army post in 1848. – McLoughlin Heights Shopping Center, by Pietro Belluschi, 1942.

BIBLIOG. FWP, Washington: A Guide to the Evergreen State, Portland, Ore., 1941; W. Steinbrück, Seattle Architecture 1850–1953, New York, 1953.

Oregon. The Oregon Territory was organized in 1848. In 1859 Oregon was admitted to the Union, at which time Salem became the state capital.

Cottage Grove. First Presbyterian Church, by Pietro Belluschi, 1951.

Eugene. University of Oregon Museum of Art, with Oriental art (chiefly Chinese and Japanese), Russian icons, paintings, sculpture, and minor arts, and a reference library of Oriental art.

Portland. Hotel Portland, begun 1870s; redesigned by Stanford White in Renaissance style, built 1885–89. – Old Federal Post Office, by A. B. Mullett, 1875, in the Second Empire manner. – A number of structures by John Yeon, including Watzek House, 1938, Visitors' Information Center, 1949, and Lawrence Shaw House, 1951. – An important group of buildings by Pietro Belluschi: Equitable Life Insurance Building, 1948, glass and aluminum sheathing in the international style; Zion Lutheran Church, 1950; and Central Lutheran Church, 1951, international style in wood and brick. – Portland Art Museum, with European and American painting from the Renaissance to the present, Pacific Northwest Indian art, pre-Columbian art, classical antiquities, Japanese prints, lacquer, and screens, and Chinese bronzes, ceramics, and sculpture.

Salem. State Capitol, by Francis Keally, 1936–39, a mixture of classical and modern with a cylindrical tower. – Salem Art Museum, located in the Bush House of 1877–78, with contemporary Northwest paintings and early portraits.

The Dalles. Fort Dalles Museum, housed in the surgeon's quarters of the fort, ca. 1850, whose pointed wooden arches perhaps reflect the influence of early Russian settlements in the area.

BIBLIOG. FWP, Oregon: End of the Trail, Portland, Ore, 1940; C. E. Fowler, The Old Days in and near Salem, Ore., Seattle, 1940; M. D. Ross, Architecture in Oregon, Oregon H. Soc. Q., LVII, 1956, pp. 4–64.

California. The Spanish decided to colonize California in 1767 From 1769 to 1823, 21 missions were founded by the Franciscans; the road connecting these missions, which ran from San Diego to Sonoma, was called the Camino Real. The plan of Mission S. Juan Capistrano, founded in 1776 and the most ambitious of the missions, is illustrated in Newcomb (1925); it shows the dependence of the builders on the baroque formulas used by their order in Spain. At the same time, presidios and towns were established.

The growth of multifunction towns was extremely slow. A rare exception was Los Angeles. Here Governor Neve carried out his dream of establishing the nucleus of a real city in 1781–82 (FIG. 659, left). His plaza-centered plan was simple. The main streets were placed at the quarter points of the compass, following the royal directive, "so that no street would be swept by the wind" (a Vitruvian principle). The rectangular plaza and surrounding lots at the intersections of the main streets were in accord with typical Spanish practice in presidios and other nonmission settlements. An arcade was indicated in front of the public buildings. (The whole central area of the city, including the plaza, was replanned in 1815 after it was virtually destroyed by a flood.)

American traders and merchants began to settle California about 1840. In addition to domestic architecture in the so-called "Spanish colonial" style, houses began to be built that owed much to the neoclassic structures of New England, such as Colton Hall in Monterey, as well as salt-box houses. The Spanish colonial style might have lasted longer in the area but for the influx of settlers upon the discovery of gold in 1848. This was also the year in which Mexico ceded California to the United States. California was admitted to the Union in 1850. Sacramento became the state capital in 1854.

The first plan for San Francisco in 1847 was the simple grid, which revealed the eastern background of its makers. In 1848 gold was discovered at John Sutter's sawmill in Sacramento. That same year his son, John Sutter, Jr., donated 500 town lots to the city for public use, in the tradition of the many-squared cities of the east coast. Oakland was laid out in 1853 in another grid plan, with four public squares. The buildings erected during this period reveal a northern European cum North American look: the Greek revival State Capitol built at Benicia in 1853, the Octagonal House built on Russian Hill in San Francisco in 1854 (one of the few early buildings to survive the devastating fire of 1906), and the Greek revival Wells Fargo building rendered in handsome, simple stonework at Mokelumne Hill in the same year.

San Francisco turned to Olmsted in 1865 for the first design of the land that in the 1870s became the Golden Gate Park. In Los Angeles Pershing Square was first planned as a series of irregular walks around a central flower bed in 1886, replanned around a bandstand in 1904, and entirely remade as a formal park in the French style in 1910. The influence of the World's Columbian Exposition in Chicago reached western shores when Burnham revised the plan of San Francisco with widened roads and new diagonal avenues in 1906 (almost none of Burnham's proposals were carried out), and in the same year the romantic suburb of Beverly Hills was laid out near Los Angeles. The influence of the Orient is apparent in the superb houses built by the Greenes from about 1900 to 1915 in the Pasadena area (I, PL. 92), in which both landscape and structure reflected Japanese practice. The impetus to grand planning, which had produced Burnham's work in San Francisco in 1906, culminated in the period just before World War I with the design for the San Francisco Civic Center by John Galen Howard and Meyer & Reid. During this period two great university groupings were planned: Stanford University in Palo Alto and the University of California campus in Berkeley. The grandiose manner met the Spanish colonial style in Goodhue's San Diego Panama-California Exposition buildings of 1915.

Since the beginning of the 20th century Los Angeles has absorbed many surrounding communities and has become the classic example of "urban sprawl" (FIG. 659, right). In the burgeoning medium- and high-density residential developments in the Los Angeles area there have been several experiments at unified planning. One of the most interesting is Parklabrea, originally designed by Leonard Schultze & Associates for the Metropolitan Life Insurance Company before World War II, with an extremely controlled plan heavily influenced by the neoclassic tradition. Parklabrea's antecedents seem to be such European schemes as Karlsruhe, Germany (VI, FIG. 258), and Arc-et-Senans, France. Two other especially notable experiments have been Baldwin Hills Village and Channel Heights Housing (1943–44) by Richard Neutra (q.v.).

Many new towns are being constructed in California at the present. Among them are Irvine Ranch, designed by William Pereira, and Laguna Niguel, planned by Victor Gruen, both south of Los Angeles; Foster City, near San Francisco; and Sunset, near Sacramento.

Benicia. Old State Capitol (now a museum), 1853, an early example of the Greek revival style in the area.

Berkeley. University of California campus, plan by H. J. E. Bénard, 1898–99, later modified by John Galen Howard; buildings by Howard and by Bernard Maybeck, ca. 1901–ca. 1925. – First Church of Christ Scientist (I, PL. 88), by Maybeck, 1910–12; wing, by Maybeck and Henry Gutterson, 1929. – University of California, Robert H. Lowie Museum of Anthropology, with primitive art and anthropological and ethnological Indian collections.

Carmel. Mission S. Carlos Borromeo: stone church, by the master mason Manuel Estevan Ruiz, 1793–97, with a unique tunnel vault that has recently been restored.

Claremont. Pomona College has two important murals: *Prometheus*, by José Clemente Orozco (q.v.), 1930, and *Genesis*, by Rico Lebrun, 1961.

Coronado. Hotel del Coronado, by Reid & Reid, 1886–88, ballooning spaces and majestic roofs. – First Church of Christ Scientist, by Irving Gill, 1931.

Eureka. Carson Mansion, 1886, so Victorian as to be almost a parody of the style.

Fillmore. In the environs is Rancho Camulos, original section 1839, wing added 1849, fine adobe house with separate kitchen and chapel built around a garden.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Jenner. Nearby is Fort Ross, with the Greek Orthodox Chapel, Commandant's Quarters, and Stockade (all restored) remaining from the Russian settlement of 1812–41.

Jolon. Near the town is one of the handsomest of the old missions, S. Antonio de Padua, with a church of 1810–13.

Lafayette. Acalanes Union High School, by Kump & Franklin, 1940–41. – James Dinwiddie Home (XIII, PL. 247), by J. E. Dinwiddie, 1948.

Lompoc. Nearby is Mission La Purísima Concepción, the only complete mission in the state, with a church of 1813–21; restored 1935–40.

Los Angeles. Buildings: Church of Nuestra Señora la Reina de los Ángeles, 1818–22; reconstructed as the Plaza Church in 1861. – Lugo House (now part of Loyola University), 1840s, the only old two-story adobe in the city; many later changes. – Bradbury Building, by George Wyman, 1893. – Banning House, 1911, and Dodge House, 1915–16, both by Irving Gill. – A group of structures by Frank Lloyd Wright: Barnsdall (Hollyhock) House, 1920; Storer House (FIG. 861), 1923; Ennis House, 1924; and Sturges House (in Brentwood Heights), 1939–40. – A number of structures by Richard Neutra: Jardinette Apartments, 1926–27, the first building in the international style in the city; Lovell ("Health") House, 1929, which made Los Angeles architecture known in Europe; Bell Avenue Experimental School, 1934–35; Channel Heights Housing (in San Pedro), 1943–44; and Northwestern Mutual Life Insurance Company Building, 1952. – Hollywood Terminal Storage Warehouse (in Hollywood), by Morgan, Walls & Clements, 1926. – City Hall, by Austin, Parkinson & Martin, 1926–28. – Public Library, by Bertram Goodhue, with Carleton Winslow, 1927. – Dunsmuir Apartments, by Gregory Ain, 1938. – Falk Apartments, 1939, and Bethlehem Baptist Church, 1944, both by Rudolph Schindler. – Colby Apartments (in West Los Angeles), by Raphael Soriano, 1951. – Music Center for the Performing Arts, consisting of three buildings by Welton Becket: Dorothy Chandler Pavilion, 1964; Howard Ahmanson Theater, 1967; and Mark Taper Forum, 1967.

Museums: Los Angeles County Museum, housed in three connected buildings by William Pereira, 1965; with classical antiquities, European painting, sculpture, and minor arts from Gothic to baroque, Oriental art, and American painting, sculpture, and folk art from the 18th–20th century. – Southwest Museum, with American Indian art and paintings from the California missions. – University of California at Los Angeles, Art Galleries, with European painting and prints from the 15th century to the present. – University of Southern California, Fisher Gallery, with European and American painting from the 17th–20th century.

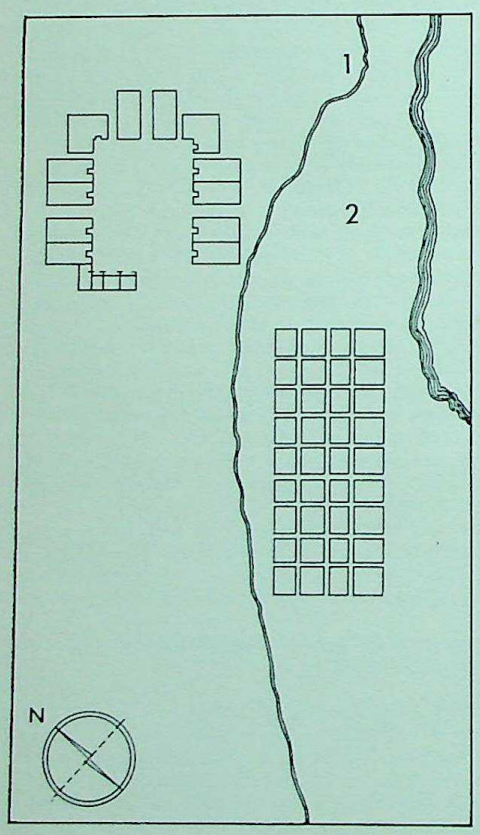
Monterey. Royal Presidio Chapel of S. Carlos Borromeo, 1794, enlarged 1858; on the façade is a relief of Our Lady of Guadalupe; the chapel contains fine examples of sculpture. – Old Custom House, north wing built 1814, middle section 1822, south wing 1840s; restored. – Casa Amesti, 1823–24, the prototype of what is known as the "Monterey style" of architecture; with formal gardens and antique Spanish and French furniture. – Soberanes House, 1830, fine adobe residence. – Thomas Larkin House, 1834, classic example of the Monterey style. – House of Four Winds, 1834. – First Theater, 1844. – Casa del Oro, 1845, simple adobe structure. – Pacific Building (originally a hotel), 1847, in Monterey style. – Colton Hall, 1847–49, provincial Greek revival. – Old Whaling Station, 1855, late example of the Monterey style.

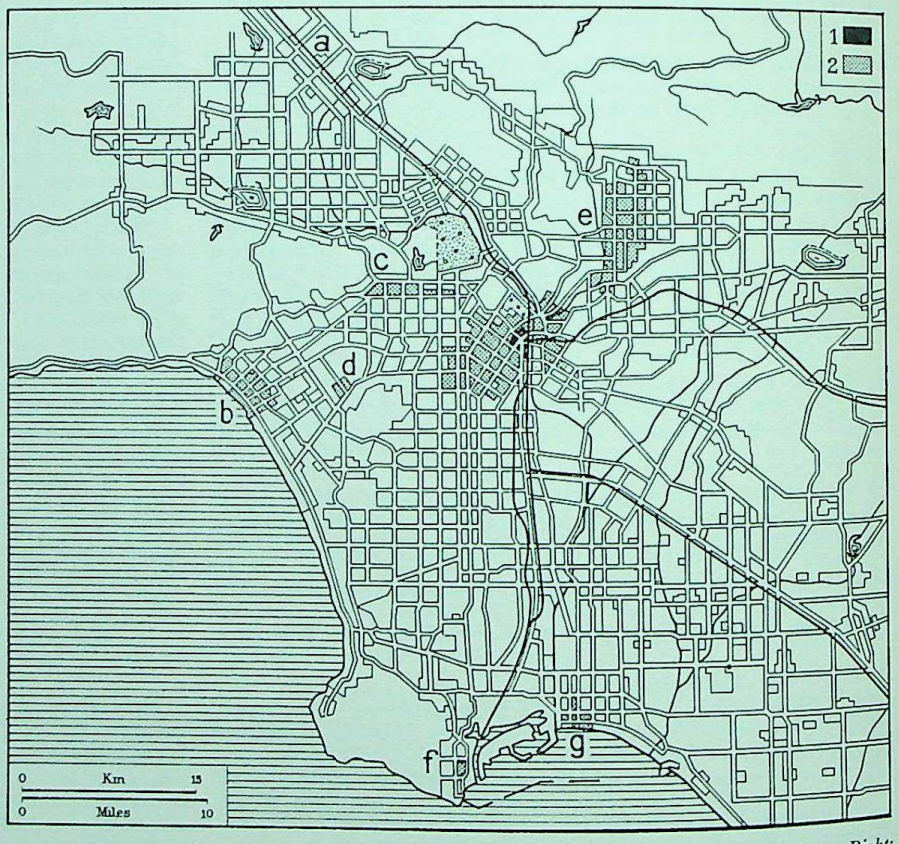
Oakland. Mills College Art Gallery, with graphic arts, textiles, and minor arts.

Pacific Palisades. Eames ("Case Study") House, by Charles Eames, 1949, one of the most imaginative and influential of the postwar residences.

Palm Springs. Mensendiek House (VIII, PL. 450), by Richard Neutra, 1937. – Kaufmann House (I, PL. 412), also by Neutra, 1946, in international style.

Palo Alto. Paul R. Hanna House (FIG. 862), by Frank Lloyd Wright, 1937. – Center for Advanced Study in the Behavioral Sciences, by Wurster, Bernardi & Emmons, 1955. – Stanford University: Art Gallery, with Oriental and 18th century Venetian art; Museum, with anthropological and archaeological collections.





Los Angeles and vicinity. *Left*: Los Angeles, plan of the original nucleus in 1781–82. (1) Main water ditch; (2) lands for future private claims. *Right*: Los Angeles and surrounding cities. *Key*: (1) Area covered by the original nucleus of the city in 1849; (2) development by 1915. Surrounding cities and districts: (*a*) San Fernando, independent city; (*b*) Santa Monica, independent city; (*c*) Hollywood, district of Los Angeles; (*d*) Culver City, independent city; (*e*) Pasadena, independent city; (*f*) San Pedro, district of Los Angeles; (*g*) Long Beach, independent city. Both, courtesy M. G. Scott and the Haynes Foundation.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Palos Verdes Estates. Nearby is the Wayfarers' Chapel, by Lloyd Wright, 1949–51, with glass sides and roof.

Pasadena. Center of the work of the Greene brothers, Orientalist innovators of the early 20th century, and possessing their two greatest residences: Blacker House, 1907, and Gamble House (I, PL. 92), 1908–09. – Millard House ("La Miniatura"), by Frank Lloyd Wright, 1923, using a new type of concrete-block construction.

Sacramento. Sutter's Fort was erected in 1839; remaining from the original fort is the two-story central building. The fort's outer walls and rooms were reconstructed in 1890. – On the riverfront is Old Sacramento, a historical-preservation project, with many buildings that date from 1849 to 1870. – State Capitol, by Miner F. Butler, 1874, in Greek revival style; extensive alterations 1906–08. – E. B. Crocker Art Gallery, housed in a building of 1870, with European and American painting and graphic arts and Korean pottery.

San Diego. Three fine adobe structures: Casa Estudillo, 1925–26, José Antonio Aguirre House, 1825–30, and Santiago Argüello House, 1833. – Thomas Whaley House, 1857; restored 1959. – First Church of Christ Scientist, by Irving Gill, 1904–07. – Balboa Park, with the Spanish Renaissance buildings of the Panama-California Exposition by Bertram Goodhue, 1915, now housing various civic organizations and museums. – Grossmont Hospital, by Pereira & Luckman, 1956. – Concourse, including the Civic Theater, Convention and Exhibit Hall, and City Administrative Building, completed 1965. – Fine Arts Gallery, with European painting from 1300 to 1870, modern painting (especially Spanish) and sculpture, prints, tapestries, Oriental art, and American minor arts. – Nearby is Mission S. Diego de Alcalá, with a church of 1808–13 which has a great three-storied bell tower; restored 1931. – In La Jolla suburb are two important buildings by Gill, the Wilson Acton Hotel of 1908 and the Women's Club of 1913; Miramar (Airmen's) Chapel, by Richard Neutra, with R. Alexander, 1958; and the Art Center in La Jolla, located in the Ellen Scripps House of 1917 by Gill, containing European and American painting of the 19th and 20th centuries, sculpture, graphic arts, and Oriental art.

San Francisco. Buildings: Mission S. Francisco de Asís (also called Mission Dolores), with a church of 1782–91 containing a superb Churrigueresque altar screen; restored. – Old U.S. Mint, 1869–74, in Greek revival style. – Ferry Building, 1896, a high tower based on the Giralda in Seville, Spain. – Palace of Fine Arts, built for the Panama-Pacific Exposition by Bernard Maybeck, 1915, in classical style; rebuilt with permanent materials 1960–61. – City Hall, by Bakewell & Brown, 1915. – 450 Sutter Street Building, by Timothy L. Pfleuger, 1928–30, using Mayan motifs. – War Memorial Opera House, 1932, probably the most monumental permanent building executed in the spirit of the World's Columbian Exposition. – San Francisco-Oakland Bay Bridge, completed 1936. – Golden Gate Bridge, opened 1937. – Maimonides Hospital, by Eric Mendelsohn, 1946–50. – V. C. Morris Shop, by Frank Lloyd Wright, 1948–50, with an interior helical ramp under a plastic bubble ceiling. – John Hancock Mutual Life Insurance Company Building, by Skidmore, Owings & Merrill, 1959. – Golden Gateway renewal project (PL. 165), first units completed 1965.

Museums: M. H. de Young Memorial Museum, with painting, sculpture, tapestries and textiles, furniture, period rooms, stained glass, and ceramics of the Western world from ancient times to the present, Chinese and Japanese art, and pre-Columbian, Oceanic, and African collections. – San Francisco Museum of Art, with contemporary painting, sculpture, and graphic arts from Europe and North and South America. – California Palace of the Legion of Honor, with European and American painting, sculpture, minor arts, graphic arts, and period rooms.

San Gabriel. Mission S. Gabriel Arcángel, with a church of 1794–1806; many changes but retaining more original early-19th-century decoration than any of the other missions.

San Juan Bautista. Mission S. Juan Bautista, with a church of 1803–12, the only mission church with a nave and four aisles. – Plaza Hotel (Zanetta House), 1813–14; second story added 1858. – Castro House, ca. 1838.

San Juan Capistrano. Mission S. Juan Capistrano, with an adobe chapel of 1777 and a great stone church by Isidoro Aguilar, master mason, of 1797–1806. The church was badly damaged in an earthquake of 1812 and has never been restored.

San Luis Rey. Mission S. Luis Rey: quadrangle, 1798–1804; church, 1811–15 and later, with a domed crossing and octagonal chapel, restored.

San Marino. Henry E. Huntington Library and Art Gallery, with Italian and Flemish Renaissance painting, 18th-century British and French painting, furniture, tapestries, and sculpture, and rare manuscripts and books.

San Rafael. Marin County Civic Center (PL. 438), by Frank Lloyd Wright, 1959.

San Simeon. Hearst San Simeon State Historical Monument, consisting of the Hearst castle, three guesthouses, the Neptune Pool with an ancient Greek temple, and magnificent gardens. The castle contains period rooms, architectural elements from European churches, castles, and temples, and furniture, tapestries, rugs, sculpture, and minor arts of all periods imported from Europe.

Santa Barbara. Mission S. Bárbara, founded 1786, with extensive water works, gristmill, octagonal fountain of 1808, and laundry; stone church, by Father Ripoll, 1815–20, with a façade based on an illustration in a Spanish edition of Vitruvius; church restored 1926–27. – De la Guerra House, 1819–26, an adobe structure built around a patio. – Santa Barbara County Courthouse, by William Mooser, 1929, in Moorish style. – Tremaine House, by Richard Neutra, 1947. – Santa Barbara Museum of Art, with classical antiquities, Oriental, African, and pre-Columbian art, and European and American painting from the 18th century to the present.

Santa Catalina. Wolfe House, by Richard Schindler, 1928, cubist tour de force with six levels cantilevered off a hill by the sea.

Ventura. Mission S. Buenaventura: church, 1794–1809, rebuilt 1812–15, with a lovely bell tower. – Nearby is Rancho Olivos (now part of the Max Fleishman Foundation), 1841, fine example of Spanish colonial style.

BIBLIOG. The Influence of Old Spain as Reflected in Modern California Architecture, Am. Architect, CXXXIV, 1920, pp. 811–16; F. R. Smith, The Architectural History of Mission San Carlos Borromeo, Calif., Berkeley, 1921; W. T. Clerk, San Juan Capistrano Mission, Art and Archaeol., XX, 1925, pp. 51–60; R. Newcomb, The Old Mission Churches and Historic Houses of California, Philadelphia, London, 1925; H. P. Staats, ed., Californian Architecture in Santa Barbara, New York, 1929; D. R. Hannaford and R. Edwards, Spanish Colonial or Adobe Architecture of California: 1800–1850, New York, 1931; F. C. Lockwood, Story of the Spanish Missions of the Middle Southwest, Santa Ana, Calif., 1934; FWP, San Diego: A California City, San Diego, 1937; P. R. Hunter and W. L. Reichardt, Residential Architecture in Southern California, Los Angeles, 1939; J. A. Berger, The Franciscan Missions of California, New York, 1941; FWP, Balboa Park, San Diego, Calif., San Diego, 1941; FWP, Santa Barbara: A Guide to the Channel City and Its Environs, New York, 1941; FWP, San Francisco: The Bay and Its Cities, 2d ed., New York, 1947; K. C. Adams, California Missions (ed. R. J. Hewitt), Culver City, Calif., 1948; C. C. Cullimore, Santa Barbara Adobes, Santa Barbara, Calif., 1948; J. D. McClure, California Landmarks, Stanford, Calif., 1948; San Francisco Museum of Art, Domestic Architecture of the San Francisco Bay Region, San Francisco, 1949; E. S. Fényes, 32 Adobe Houses of Old California, Los Angeles, 1950; M. Yost, Greene & Greene of Pasadena, JSAH, IX, 1–2, 1950, pp. 11–19; FWP, Los Angeles: A Guide to the City and Its Environs, 2d ed., New York, 1951; F. Harris and W. Bonenberger, A Guide to Contemporary Architecture in Southern California, Los Angeles, 1951; E. K. Thompson, The Early Domestic Architecture of the San Francisco Bay Region, JSAH, X, 3, 1951, pp. 15–21; M. R. Parsons, Old California Houses, Berkeley, 1952; L. F. Perusse, The Gothic Revival in California: 1850–90, JSAH, XIV, 3, 1955, pp. 15–22; D. Honnold, Southern California Architecture: 1769–1956, New York, 1956; K. Baer, Architecture of the California Missions, Berkeley, 1958; The Los Angeles County Museum and The Art Center in La Jolla, Irving Gill: 1870–1936, Los Angeles, 1958; J. A. Baird, Jr., Architectural Legacy of Sacramento, Calif. H. Soc. Q., XXXIX, 1960, pp. 192–207; H. Kirker, California's Architectural Frontier: Style and Tradition in the 19th Century, San Marino, Calif., 1960; E. McCoy, Five California Architects, New York, 1960; J. S. and R. J. Whiting, Forts of the State of California, Seattle, 1960; J. M. and S. B. Woodbridge, Buildings of the Bay Area, New York, 1960; J. A. Baird, Time's Wondrous Changes: San Francisco Architecture, 1776–1915, San Francisco, 1962; E. McCoy, Modern California Houses, New York, 1962; The California Missions: A Pictorial History, Menlo Park, Calif., 1964.

John PEARCE

Illustrations: 8 figs. in text.

UNKEI. Son of the sculptor Kōkei (see JAPANESE ART), Unkei (d. 1223) doubtless drew in part from his father the artistic inspiration that was to make him the major sculptor of the Kamakura period (1185–1333). Kōkei and his famous pupil Kaikei (q.v.) were outstanding artists, but Unkei is commonly credited with giving Kamakura sculpture a vital new impulse in keeping with the warlike, realistic spirit of the time.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

An event that played an important part in Unkei's art was the rebuilding of Nara's Kōfukuji and Tōdaiji, which had been largely destroyed in the course of the feudal strife that led up to the establishment of the shogunate in 1192. Working with his father, who was in charge of the sculpture for the reconstructed temples, Unkei had the opportunity to study the magnificent Buddhist images of the Nara period (645–793); it was on these works, in fact, that he based his early style, not in mere imitation but rather in inspired adaptation, which achieved a perfect fusion of the splendor of the Nara period with the dramatic realism typical of Kamakura art.

Numerous works have been ascribed wholly or in part to Unkei. As the head of an atelier and the founder of a school, he was artistically an extremely influential figure and set the standard of quality for the works of those associated with him. It is not always possible, in a particular piece, to differentiate between Unkei's influence, his direction, and his own hand.

Of all the works linked with Unkei's name, the most impressive, from the point of view of immediate impact, are the two Kongōrikishi, also called Niō, housed in the Great South Gate, or Nandaimon, of the Tōdaiji of Nara (PL. 255; VIII, PL. 291). According to documents in the archives of the monastery, these two gigantic figures of Buddhist guardian deities were executed in 1203 by Unkei and Kaikei, with the help of two other sculptors and sixteen assistants. Called Kongōrikishi because of the symbolic thunderbolt (Skr., *vajra*; Jap., *kongō*) that they wield, the figures are about 27 ft. high and are made of several blocks of wood, carved separately and then joined (a technique brought to perfection by Unkei); despite the discoloration due to the passage of time, it is still apparent that the original polychromy must have been vivid. The statues are notable for the dynamism of the attitudes and the tremendous force emanating from the bodies. The dramatically expressive faces, the muscular tension of the arms and legs, in violent motion, and the sharp diagonals of the limbs and the wind-whipped drapery convey a sense of the terrifying and make clear the fiercely protective nature of the function of these beings (see DEMONOLOGY; TERROR AND THE MALIGN). The close connection between the Niō and the lokapala of the Nara period is unmistakable, but the Nara guardians cannot compare with the Kamakura figures for realism and intensity of vigor and energy.

Unkei, unlike the Buddhist sculptors of Nara in the Heian period (794–1185), did not slavishly accept the legacy of the style of the Nara period but profoundly modified it, giving his figures a dynamic but nonetheless composed expression of power that had been lacking in Heian sculpture. Unkei's fresh and vigorous touch is discernible even in a work of his youth, the Dainichi Nyorai (Vairocana Tathāgata; VIII, PL. 292) in the Enjōji, Nara. Begun late in 1175 and completed in less than a year, the statue still retains something of the style of the Late Heian (Fujiwara) period (895–1185); but close observation of the deliberately irregular carving of the virile face, the hair knotted up in a high tuft, and the eyes of mounted crystal, reveals the realistic trend of the Kamakura period. Moreover, the authority with which the draped lower limbs are modeled is typical of Unkei's handling of his material.

The statues that embody the elements typical of Unkei's developed style, however, are two life-size standing figures representing two patriarchs of Mayahana Buddhism, Asaṅga (Jap., Muchaku) and Vasubandhu (Jap., Seshin), in the Hokuendō (North Octagonal Hall) of the Kōfukuji in Nara. These two figures stand as attendants to a seated Bodhisattva Maitreya (Jap., Miroku Bosatsu), the inscription on whose pedestal provides the basis for dating this triad 1208 and attributing it (in the broad sense of the term) to Unkei. A contemporary document raises some questions, since it names other artists and designates as Genjō (Chin., Hsüan-tsang) the figure generally regarded as representing Muchaku, but can hardly cast doubt on the responsibility of Unkei for this group. The figures of Muchaku and Seshin can scarcely be considered portraits in the strict sense, since the two monks lived in the 3d–4th century, but the remarkable realism of these carved wooden statues surely brings them into the domain of portraiture: they represent not types but individuals. In the animate faces and the delicate drapery of the robes, responsive to any slight motion, there is apparent the masterly carving that has prompted one writer to characterize Unkei as "the Michelangelo of Japanese sculpture."

BIBLIOG. L. Warner, The Craft of the Japanese Sculptor, New York, 1936; O. Kümmel, ThB, XXXIII, p. 578; S. Noma, Japanese Sculpture, Tokyo, 1939; S. Noma and J. Harada, Masterpieces of Japanese Art, III, Sculpture and Art Crafts, Tokyo, 1948; Album of Japanese Sculpture, VI, Kamakura Period, Tokyo, 1952; Pageant of Japanese Art, III, Sculpture, Tokyo, 1952; L. Warner, The Enduring Art of Japan, Cambridge, Mass., 1952; P. C. Swann, An Introduction to the Arts of Japan, Oxford, 1958; W. Watson, Sculpture of Japan, London, 1959; J. E. Kidder, Jr., Masterpieces of Japanese Sculpture, Tokyo, Rutland, Vt., 1961.

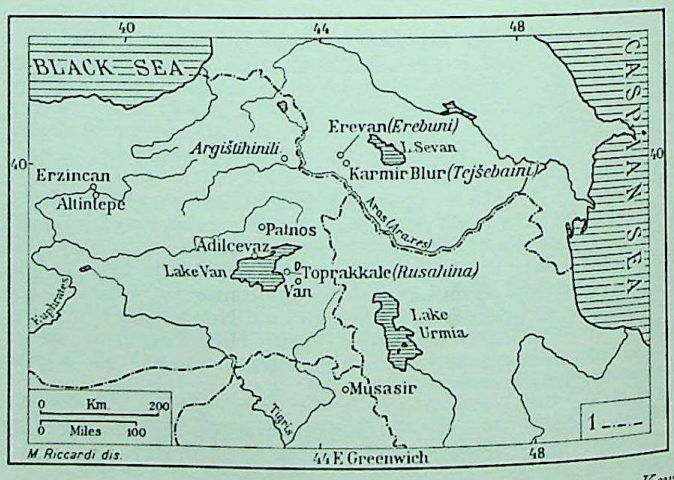
Antonio PRIORI

Illustrations: PLS. 255–256.

URARTU. In the mountainous territories lying north of upper Mesopotamia and corresponding to the future Armenia, the kingdom of Urartu (Bib., Ararat) flourished during the first half of the 1st millennium B.C., with particular ethnological characteristics and with an artistic achievement whose originality distinguishes it from the other civilizations of ancient West Asia (see ASIA, WEST: ANCIENT ART). On the one hand its production is linked to Assyrian art, which is its main source of inspiration, while on the other it shows contacts with the cultures of Anatolia and northern Iran. Of special interest is the output of bronze objects, which were exported westward to the lands of the Mediterranean and there imitated (see ORIENTALIZING STYLE).

SUMMARY. Introduction (col. 664). Architecture (col. 665): *Citadels; Temples; Tombs.* Sculpture (col. 668): *Bronzes.* Diffusion of Urartian influence (col. 672).

INTRODUCTION. The name Urartu was mentioned as early as the time of the Assyrian king Shalmaneser I (first half of the 13th cent. B.C.), and the first reference to a king of Urartu, a certain Aram who resided in Arzashkun, appears in the annals of Shalmaneser III (r. ca. 858–824 B.C.). With Sardur I (r. ca. 832–825), son of Lutipris, an energetic dynasty established itself and succeeded during the weak period of the Assyrian kingdom — under King Menuas (r. ca. 804–790) and his suc-



Principal centers of archaeological interest in Urartian territory. *Key:* (1) Modern national boundaries.

cessors Argishtis I (r. ca. 789–766) and Sardur II (sometimes called Sardur III; r. ca. 765–733) — in making Urartu one of the leading powers of the Near East. Menuas's inscriptions report military campaigns that extended as far as Transcaucasia. Sardur II, son of Argishtis, conquered Kumaha (Commagene) in the west and Halap (Aleppo) in the southwest, thus coming into contact with the Syrian coast of the Mediterranean. But at the time of the great Assyrian king Tiglath-pileser III (745–

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

727 B.C.) the Urartians were pushed back into their original mountain region; subsequently Sargon II (721–705 B.C.) was even able to lead a great military expedition into the interior of their country.

Since in the succeeding period the Urartians contented themselves with ruling the mountainous area, they were able to coexist with the Assyrians. The Cimmerian invasion, in which Rusas I is said to have taken his own life (714 B.C.), must have considerably weakened Urartu, which was then further stricken by the Scythian invasion in the first half of the 7th century B.C. Yet the kingdom of Urartu did not come to an end until the coming of the Armenians and Iranians to the area. The final dissolution of the state must have taken place toward the beginning of the 6th century B.C., following the Median conquest and some years after the fall of the Assyrian kingdom.

Goetze (1957) considers the language of Urartu (sometimes called Khaldian), which is known from inscriptions written in Assyrian cuneiform characters, to be a later Hurrian dialect; according to him the Urartians were the successors of the Hurrians, who flourished in upper Mesopotamia in the 2d millennium B.C. Besides raising cattle and horses on a large scale, as the Hurrians had done before them, the Urartians were masters in the construction of irrigation systems. They were fine craftsmen, being especially skilled in weaving and the metal crafts.

The Urartian religion is known from the large inscription on the portal of Mheri-dur (Mher-kapısı, "gate of Mher") near Van, dating from the joint rule of Ispuinis and Menuas (end of 9th cent. B.C.), which offers a survey of the entire Urartian pantheon. The most powerful deities were Khaldis the national god, Teisheba the weather god (a name only slightly altered from the Hurrian Teshub), and Shivini the sun god. The portal of Mheri-dur, with its monumental niche, was a sanctuary and may be compared to similar niched rock façades found in Phrygia (I, PLS. 528, 532).

ARCHITECTURE. *Citadels.* The mountainous and rocky nature of their land as well as their own warlike character caused the people of Urartu to become great masters in rock architecture. C. A. Burney (1957, 1960) has studied and photographed a considerable number of Urartian citadels (PL. 257).

The walls of these fortresses consist of approximately square or rectangular thick stone blocks, which were roughly or smoothly dressed according to their quality; they are mainly black basalt, being usually rather more than 20 in. high, and occasionally reaching 40 in. The defense walls are everywhere about 10–13 ft. thick. Generally the outer and inner surfaces are built of large blocks while the inside is filled in with rubble, but the best walls are of ashlar throughout. Most citadel walls are reinforced with numerous buttresses or "towers." These are generally 13 ft. wide and project about 3 ft.; they are rectangular in plan, never curved. Characteristic also is the rusticated ashlar that can be seen in the wall of the Temple of Khaldis in Toprakkale (apparently the ancient Rusahina). In the 2d millennium the Hittites, neighbors of the Hurrians, knew the technique of rustication, as can be seen from the monument in Eflatun-Pınar.

An idea of the structure of a Urartian fortress is given in the lost Assyrian relief from Dur Sharrukin (mod. Khorsabad) and by two fragments of a bronze model from Toprakkale (Br. Mus., 91177, 91250). In both representations the walls are crowned with battlements; on the Assyrian relief, moreover, the towerlike buttresses can be seen.

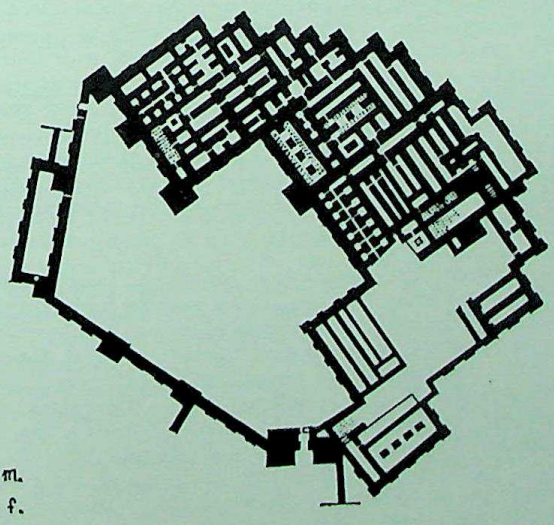
The rock steps of these citadels (PL. 257) were generally built not as passageways but as foundations for walls. The stairways cut as tunnels in the rock sometimes served for fetching water but in some cases were used as sally ports.

The citadels, which varied in size, contained within their walls the most important buildings — palace, storehouses, sanctuaries. Normally a lower town lay at the foot of the fortified acropolis. K. L. Oganesjan (1955, 1961) differentiates two types of Urartian dwellings: one with a central courtyard, which was used in the southern, warmer parts of the kingdom, and one with a covered central room in place of the courtyard. In the excavations of Arin Berd the remains of palace buildings were brought to light. Particular mention should be made of a large hall whose ceiling was once supported by 30 columns. Some of the interior walls had painted decoration in red and blue; the figural motifs included genii and animals.

Temples. In Altıntepe and Patnos the lower part of the temple wall, which was 13 ft. thick, consisted of regular ashlar masonry while the upper part was of mud bricks. In Toprakkale, as indicated by H. Rassam's excavations of 1880, the foundation wall, which in places was preserved to a height of 15 ft., was executed in a sort of rusticated ashlar composed of alternating light and dark courses. Later excavators could find only meager remains of the walls, yet these sufficed to establish the approximate ground plan of the temple. Reconstruction of the ground plans of these three temples shows in each case a square structure measuring approximately 46×46 ft., within which was a square chamber measuring approximately 17×17 ft.

The temple of Altıntepe (PL. 258) is oriented in a north–south direction. As with the Temple of Khaldis in Toprakkale, the entrance is on the south side. One ascends two steps and passes through a corridorlike entry into the cella, on the north wall of which is a plinth for a statue. The plinth is covered with stone slabs and has a stone step at its northwestern corner. In front of it votive gifts — several spearheads, clubs, and vases — were found. Low stone benches run along the inner walls of the cella, the floor of which consisted of packed earth. The interior walls were painted in red and blue, but it is no longer possible to establish the ornamentation. All the exterior angles of the temple were emphasized by tower-shaped buttresses, which projected only about 20 in., and the structure as a whole gives the impression of a freestanding tower. This plan, inspired by military architecture, while it has analogies among the contemporaneous religious buildings of Mesopotamia (for example the Temple of Ishtar in Babylon), represents a new temple form that can be considered a Urartian creation. The temple of Altıntepe with its square ground plan and slightly projecting buttresses at all four corners must have looked something like the Achaemenid fire temple of Naqsh-i-Rustam (VIII, PL. 137), and it seems likely that this Achaemenid structural form goes back to a Urartian model.

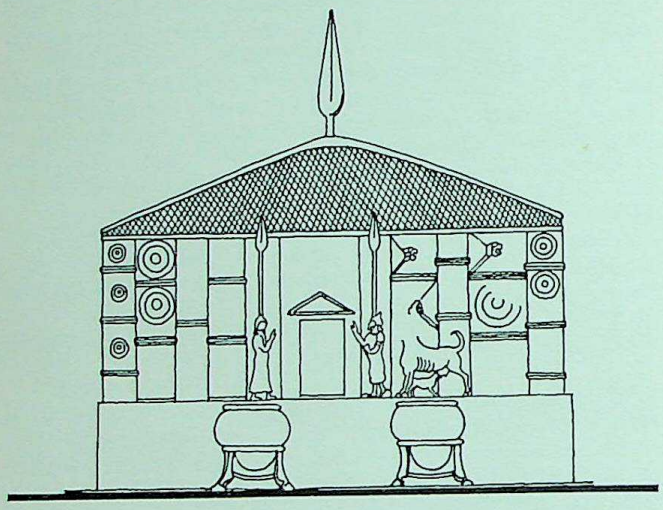
Similar corner projections can be seen in the Temple of Khaldis at Arin Berd, which also has in common with the Altıntepe sanctuary its use of columns. At Arin Berd they are used as supports for an entrance hall that included two-thirds of the temple façade. In Altıntepe, according to the excavator, the columns formed a sort of pronaos. The decoration of the façade with columns or pillars is also to be seen in the relief, now lost, that was found in the palace of Sargon II in Dur Sharrukin (mod. Khorsabad), representing the plundering of



Teishebaini (mod. Karmir Blur), plan of citadel, 7th cent. B.C. (*from Piotrovski, 1950, III, fig. 1*).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the temple of Musasir in 714 (FIG. 667). The relief shows the temple set on a fairly high base with six pillars that support a tiled gabled roof. Each pillar is regularly divided by three transverse moldings. On the fronts and sides of the pillars and on the flat areas between are attached shields, which appear either in a front view or in profile. In the center of the front is a door with a gabled tympanum, perhaps leading into the room in which stood the statues of Khaldis and his consort Bagbartu, the two divinities worshiped at Musasir. The presence of the triangular tympanum constitutes a significant link with the religious architecture of Phrygia and the Aegean (see ARCHAIC ART; ASIA MINOR, WESTERN; GREEK ART, EASTERN). The symbol of Khaldis, a spearhead, was used as an acroterium. Each of the two central pillars has before it a male statue and a spear



Front view of Urartian temple at Musasir, from an Assyrian relief from Dur Sharrukin (mod. Khorsabad), now lost (*after P. E. Botta and E. Flandin, Monuments de Ninive, Paris, 1849–50*).

reaching to the eaves. The statue on the right is followed by the figure in the round of a cow suckling her calf. In the foreground of the temple are two large vessels on tripods.

The temple of Patnos is the oldest Urartian sanctuary of which remains have been found. According to inscriptions containing the names of the kings Ispuinis and Menuas, it dates from the end of the 9th century B.C. The temple of Musasir was destroyed in 714 B.C. by Sargon II and must therefore belong to the 8th century B.C. at the latest. The Temple of Khaldis in Toprakkale probably already existed in the time of Rusas II (r. ca. 678–654 B.C.), according to a now-lost shield inscription from the British Museum. The other shields found there, dedicated to Khaldis (Br. Mus., 22482 and fragments), are from the time of Rusas III (r. ca. 605–585 B.C.).

Tombs. Urartian burial monuments are known chiefly from those preserved in the citadel on Lake Van (PL. 258) and those which have recently come to light in the Turkish excavations of Altıntepe.

The tombs found on the slopes of Altıntepe are subterranean structures. In rectangular graves, situated 7–8 ft. deep in the earth or rock, from one to three chambers were built of carefully dressed stone blocks. Most burial chambers were provided with several often symmetrically placed small niches that served as depositories for the tomb furnishings. The chambers were covered with either a gabled roof or a corbeled vault, and almost all of them had a long or short dromos. Each tomb was surrounded on all four sides by a wall built of large stone blocks; the whole was then covered with earth. In one of these tombs were found two plain stone sarcophagi, with barrel-vaulted covers, one containing the skeleton of a woman, the other that of a man. The woman was buried in richly ornamented clothing. Other material in the same grave consisted of fine pieces of furniture, arms, and vases.

Sculpture. The inscription of Sargon II, in which he reports his campaign against Urartu and the plundering of the temple of Musasir, bears witness to the fact that in the 8th century B.C. the Urartians were making important pieces of large-size sculpture. Among the booty are listed "four bronze statues that guarded the gates, a statue of Sardur, one of his son Ispuinis, a bronze statue of Argishtis, and a bronze statue of Ursa [Rusas] with his chariot, driver, and two horses." It is noteworthy that these were mainly bronze statues and that the bronze founders of Urartu were already capable of representing freestanding groups, but unfortunately no examples have survived. Nor are there examples of large works in marble or stone. However, the fine large relief of Adılcevaz (Adelyevas; Burney and Lawson, 1958), of which fragments survive (some *in situ* and some in the museum at Van), confirms the fact that the Urartians really did make monumental figural sculpture. The god Khaldis was represented on this relief with a second divinity opposite him. Khaldis, standing on a bull, is almost completely preserved, but only the middle part of the other figure remains. The motif of a divinity standing on an animal goes back to Anatolian-Hurrian models. The characteristic profile of the face and above all the thick swelling form of the eyebrows and the strong nose (see below), as well as the spearhead motif (the symbol of Khaldis), indicate that this is a Urartian work. The figure of the bull, like another one on a rock relief of Adılcevaz, is closely related in all its details to the bulls on the Urartian shields. Although strongly influenced by the Assyrian bulls, they are an original Urartian interpretation. The same can be said for the figure of the god: his richly ornamented dress, for instance, is strongly reminiscent of the richly patterned clothing in Assyrian art (IV, PL. 16), yet a comparison shows the individual motifs to be quite different; the closest parallels to the decorative motifs of the Adılcevaz relief appear in Urartian small bronzes in the British Museum (see below). The horned headdress, the astral type of crown, and the position of the arms and hands are modified imitations of Assyrian models. The vertical volutes with the astral symbol that are shown on the polos of the god reappear in a Urartian bull figure now in Leningrad (The Hermitage). The motif of the triple spearhead is, as pointed out by Burney (1958) and Piotrovski (1962), also known in Urartian art and recurs in the art of Zawiyeh (see IRANIAN PRE-SASSANIAN ART CULTURES). Since in the relief the nape of the god's neck is missing, it is not possible to establish a definitive date from the coiffure, but the hair seems to have a Sargonic form, as in the minor bronzes of Toprakkale; thus the relief may be dated about 700 B.C. at the earliest. Another worthy example of Urartian relief is the representation of a lion (PL. 259) from Erzincan — a characteristic example of the so-called "ringlet" style (see below).

The Urartians also produced monumental pottery vessels (some of them found in their entirety in the Turkish excavations of Patnos) that demonstrate their special talent for sculptural decoration. Often these vessels seem to be imitations of the great bronze vessels discussed below, with lion and bull figurines applied to the rim in the same style as the lions on the votive shield of Rusas III (see below); these vessels seem to belong, like the shield, to approximately the time of that monarch (r. ca. 605–585 B.C.). The minor Urartian production of terra-cotta figurines of a more or less popular character also shares certain sculptural features of the artistically important bronzes.

Bronzes. Excavations have brought to light figural bronzes as well as bronze furnishings and weapons with sculptural decoration. The oldest examples dated by inscriptions were revealed by the Russian excavations of Teishebaini (mod. Karmir Blur), which was founded or transformed into a royal fortress by King Rusas II (r. ca. 678–654 B.C.). Two shields and two helmets (PL. 259) found there, inscribed with the names of Argishtis I (r. ca. 789–766 B.C.) and Sardur II (r. ca. 765–733 B.C.) evidently came from the treasuries of older residences. The character of these works, which can be dated with certainty to the 8th century, is so linked to Assyrian models — in the pointed form of the helmets themselves, the winged genii, the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

round caps with horns, and the coiffures — that they may be considered as provincial products of pre-Sargonid Assyrian art (see I, col. 874; IX, PLS. 489, 490, 493). The same can be said of the representations of horses and chariots, which repeat the types appearing on the Assyrian reliefs of pre-Sargonid times. M. Pallottino (1958) has justly compared the horseman with pointed helmet and small round shield who appears on an orthostat from Tell Halaf with the horsemen on the helmets from Karmir Blur. The existence of a common Assyrian prototype is attested by the 9th-century bronze relief from Imgur-Enlil (mod. Balawat), now in the British Museum.

Nevertheless, in addition to the clear and strong Assyrian influence, the art of Urartu displays unique features that can be considered as constituting a characteristic Urartian style. This is particularly evident in the somewhat squat human figures of a facial type that differs from the Assyrian. The originality of Urartian works of art can best be grasped in the animal figures, which are treated with special fluency and skill. Where Assyrian art represents the lion in powerful action, attacking or preparing to spring (IX, PL. 493), the Urartian lion is, so to speak, strolling along (PL. 259), despite the wide-open maw with extended tongue, the furrowed face, and the curled tail — all characteristics of a raging lion. This type of "inoffensive" lion, often repeated ornamentally in friezes, was later to become a dominant element of the Orientalizing style (q.v.) and of the archaic iconography of Greece and Italy.

Urartian animal motifs display one peculiarity that amounts to a stylistic formula, namely, the curling or ring-shaped termination of various parts of the figure such as the locks of the mane, the ears, and the lower lip. The most striking characteristic of the Urartian lions or bulls is the ringlet used in the stylization of the leg and the shoulder, either issuing from the curve of the line of the muscle or simply added at this point (PL. 259). It will be seen below that the same formula is employed on the "siren" appliqués from Toprakkale. This "ringlet style" (*Ringelstil*) was typical of the oldest period of bronze production in Urartu.

The famous caldron appliqués from Toprakkale are stylistically related to the shields and helmets from Karmir Blur. The ringlet style also affords evidence as to the much-debated provenance of the caldron appliqués found in Greece and Etruria. An appliqué in the form of a "siren's" head (see X, cols. 785, 789), now in Istanbul (Archaeol. Mus.), exhibits small ringlet shapes on the corners of the triple triangles that decorate the breast of the bust and on the ends of the small bars that hang down from the necklace. Another appliqué in the same museum in Istanbul, whose provenance is unknown, shows the same ringlet style. It is the same size as the previous piece and very similar in execution; both may therefore belong to a single caldron. The profile of these heads, with the nose strongly arched right from its root, seems to be characteristic of Urartian work. A similar nose shape appears in the previously mentioned Adılcevaz relief and on the gold medallion in Berlin (PL. 262).

The female appliqués of the bronze caldron recently found in Gordium (in Phrygia) show an almost identical facial type and an identical coiffure (PL. 260; X, PL. 403). The female heads from Toprakkale are so like those from Gordium as to be interchangeable. Common to both is the egg-shaped head with a receding brow, the strongly aquiline nose, the eyelids and eyebrows consisting of thick, crosshatched, elongated rolls ending in a point at the outer side, the small angular mouth, and the small chin joining the neck with a simple diagonal line. The herringbone strokes of the hair, which falls down in several large locks, are almost identical in the heads from both places. It is decisive that the four women's busts on the caldron from Gordium have the characteristic Urartian ringlet motif; these also appear here on the upper corners of the triangles that decorate the breasts of the appliqués. The ringlets are absent in the other caldron from Gordium, which is decorated with two female appliqués. Singularly enough, the male heads of the same caldron are quite different in style; but since the female heads are identical in facial type to the female heads of the other caldron from Gordium and to the appliqués from Toprakkale, this work must also be the product of a Urartian workshop. A series of female-head appliqués found in Olympia as well as the head from Ptoion (in Boeotia) probably also come from Urartu.

A close examination of the female heads of the caldrons found in Etruria leads to the conclusion that the "sirens" of the Bernardini tomb in Praeneste (mod. Palestrina; Rome, Mus. Pigorini) and those of the "Tomba dei Lebeti" at Vetulonia (X, PL. 403) are also Urartian works. Not only are the facial forms and the hair of the Urartian type, but the breast decoration of the Etrurian "sirens" is also just like that of the Toprakkale pieces: the rosettes and triangles of the Toprakkale examples recur in the female appliqués of the Vetulonia caldron. One of the female heads from Praeneste, moreover, shows triangles with ringlet decoration in the upper angles, as is general in the Urartian works.

Stylistic analysis of the bearded appliqués from Vetulonia, Olympia, and Gordium indicates that the art of Urartu was greatly influenced by the traditions of Syro-Hittite art (see ASIA, WEST: ANCIENT ART). This is demonstrated by several characteristics: the absence of mustaches; the curly beards on the male heads of the caldron found recently in Gordium which, particularly in their somewhat oblique profile, recall the bearded heads from Sam'al (mod. Zincirli); the cloaks, whose folds are represented in a way encountered only in sculptures from Zincirli and Sakçegözü; and, lastly, the pointed cap folded forward on the bearded heads from Vetulonia, a feature that appears also on the late Syro-Hittite reliefs of Karatepe. This apparent eclecticism and confluence of styles can be explained by the close contacts between the kingdom of Urartu and northern Syria during the 8th century. Other decorative motifs that recur are hatched bands (*Strichelstil*) and rows of incised dots; on the basis of these two elements, Kunze (1950) has rightly identified a small bronze bull from the Heraion of Argos as Urartian (see X, col. 789). The same may be said of a winged appliqué with a griffin head from Olympia (Athens, Nat. Mus.), decorated with the same hatched bands and rows of depressed dots. Despite the eclecticism shown in the male heads, however, the scheme of the surface decoration, the thick crosshatched rolls forming eye outlines and eyebrows, and the powerful aquiline nose are common characteristics of both the male and the female heads of the Vetulonia caldrons, and justify the conclusion that they are products of the same workshop,

Both the caldon with a tripod (PL. 260) from Altıntepe near Erzincan and the caldron appliqués in the shape of bull heads from Toprakkale (Br. Mus.) are further evidence of the skill of the Urartians in the production of fine bronze vessels. P. Amandry (1956) has convincingly argued that the bull-head appliqués from Toprakkale and Altıntepe form a homogeneous group, distinctly different from the others found in the Mediterranean world. Characteristics are, above all, the narrow, curving horns whose point of juncture with the head is marked by a raised ring. The stylized curls of the forelock lying on the forehead, like a rectangular piece of cloth (see I, PL. 524), the similarly stylized collar running from ear to ear, and the wing-shaped plaque on which the head rests are further common features of the bull heads from Toprakkale and Altıntepe. One may therefore conclude that the bull caldron believed to come from Cumae (mod. Cuma, near Naples; Pallottino, 1955) in the National Museum in Copenhagen, which shows similar characteristics, is also of Urartian origin.

The griffin and lion appliqués from Greece and Etruria (I, PL. 340; X, PLS. 402, 408) exhibit a late Syro-Hittite character, and it does not seem that they can be specifically connected with the art of Urartu. The fact that lion heads in this style appear next to "siren" heads in Urartian style on the rim of a caldron from the "Tomba dei Lebeti" in Vetulonia (Florence, Mus. Archeol.) does not invalidate this view, especially as there is some doubt whether the caldron has been correctly reconstructed. If the present form is correct then it was put together in this eclectic fashion by the Etruscans, who may have used, on caldrons of their own manufacture, attachments of various provenance according to their taste. It is of interest that a lion protoma with an exaggeratedly long neck, similar to those

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

found in the Regolini-Galassi tomb in Caere (mod. Cerveteri), has come to light in Karmir Blur (see X, col. 788). In the drawing published by Piotrovski (1962), the head of the lion is characterized by two stylized palmette leaves closely encircling the eyes and by a gable-shaped forehead — two features that would appear to establish it as a Urartian lion type, in contrast to the Syro-Hittite type of protoma that was found in the Barberini tomb in Praeneste.

The other finds from Toprakkale also show a style closely related to Assyrian art and influenced by late Assyrian models. The bronze "eunuch" in Berlin (Staat. Mus.) and a bronze centauress in the British Museum (both, PL. 261; IX, PL. 497), as well as the lovely mythical being in Leningrad (The Hermitage), and various other Urartian figures, wear a coiffure which appears in the Assyrian art of the time of Sargon II (IX, PLS. 488, 489) and which remained fashionable throughout the entire 7th century B.C. In these figures the luxuriant mass of curls falling vertically to the shoulders and resting on them is completely different from the diagonally combed hair of the genii represented on Urartian 8th-century helmets; the Urartian artists seem to have followed the Assyrian change in hair style. The so-called "eunuch" is also Assyrian in other details and, like its Assyrian models, represents a royal attendant, so identified by the long band of cloth that he carries over his left shoulder and holds with his left hand. The other works of art from Toprakkale are also of Assyrian stamp. Besides the lions, the winged bull-men display a strong Assyrian influence. The figures standing on lions also betray Late Hittite influences, if this motif does not go back through local traditions to Hurrian models of the 2d millenniun.

The Urartian style of the 7th century B.C. is richer and more developed than that of the 8th. The differences between the two styles can best be seen in the lion images, of which many have been found. The ringlet style survived in the 7th century next to a new style tending to sculptural round forms. Very characteristic is the disklike stylization of the mustache on the lion images found on the shields of this time. The lions' claws and also some of the bulls' hoofs are done in the same protuberant form. That in this case too one can speak about a specific style ("boss style," *Buckelstil*) is shown by the presence of protuberant forms not only in the bronzework but also on the terra-cotta lions from Toprakkale. The shield in the British Museum representing lions in this style bears the inscription of Rusas III, the last king of Urartu (r. ca. 605–585). The *Ringelstil*, however, was not superseded, as is shown by another shield recently found at Toprakkale, also from the reign of Rusas III.

The Urartian lion type of the 7th century B.C. is dependent on Assyrian models of the Sargonid period, like the coiffures of human figures of the time. The Aramaean-influenced examples of Late Hittite art may also have served as models (see VII, col. 574). Both the formation of the lower jaw and the stylization of the upper part of the face are indeed closest to examples from Zincirli and Sakçegözü. The stylization of the nose, which ends below in a U shape and is stepped above, is a Urartian feature. A similar stylization of the nose recurs in a Phrygian relief of the 6th century B.C. (I, PL. 529).

Proof that the Urartian style was indigenous is provided by the previously mentioned relief from Erzincan (PL. 259), where the important Urartian ruins of Altıntepe are to be found. The lion represented on this slab, which is quite thick and was surely worked *in situ*, is the same type as the lion on the Urartian shields. There is the same stylization of the leg, with the upper curve provided with a ringlet, while the mane also ends in a volute so as to present a stylized ear. It is impossible to tell the exact form of the nose since the relief is damaged at this point, but the stylization under the eye consisting of two palmettes, as in other Urartian examples, is also present here. Both the curve of the lower lip and the generally rounded curve of the upper lip appear as they do in the Urartian lions represented on 8th-century shields. Only the shoulder stylization on the lion from Erzincan differs from that of the lions in metalwork. A similar stylization of the shoulder muscle appears in Late Hittite art. The M-shaped stylization of the high mandible is a transformation of the W-shaped haunch stylization which is encountered as an Assyrian characteristic and which predominates in 9th-century Assyrian reliefs (IX, PL. 493). The sculptor also gave the body of his lion different proportions from those used by the metalworkers of the Toprakkale shields; although both made short-legged lions, the torso and the neck of the stone lion are slenderer and more elongated.

The close relationship between the lion of the Erzincan relief and the lions from Toprakkale on Lake Van shows that a uniform Urartian style existed in the 7th century B.C. This uniformity of style is also evident in other figural representations from Toprakkale. Barnett (1950) has recognized that Urartian bronze statuettes in human and animal form to be found in various museums and private collections throughout the world belong to a throne, on which at that time the seated image of the god was set. The beautifully preserved bronze statuette of a winged fabulous beast, now in Leningrad (The Hermitage), is so closely related to these throne figures as to be identified with them in time and place. A particularly lovely work of art — the figure of a woman on a tripod in Assyrian style (Erlangen, Archaeol. Inst.) — belongs with this group. While the hands laid one within the other in humility and devotion indicate an Old Babylonian influence, transmitted through Assyria, this gesture recurs in the winged centauress belonging to the throne figures from Toprakkale, now in the British Museum (PL. 261), and was therefore also common to Urartu; the coiffure also corresponds to those of the throne figures. But the decisive clues to its Urartian provenance are the *Ringelstil* motifs that appear on the sort of capital surmounting the figurine's head, on the base beneath its feet, and on the necks of the duck heads (see H. Frankfort, *The Art and Architecture of the Ancient Orient*, Harmondsworth, 1954, pl. 117). A gold pendant medallion from Toprakkale (PL. 262) can be mentioned in this context. The cloak that covers the head and the trailing garment seem to indicate a prevalently Hittite influence, but the position of the hands has nothing to do with Hittite art. The finely patterned dress is characteristic of the richly ornamented Urartian clothing as known from Assyrian sources. In the booty taken by Sargon II from the temple of Musasir are listed 130 many-colored garments and 9 robes for gods with gold ornaments. The garments of the throne figures are strewn with geometric motifs similar to those on the Berlin pendant; still richer is the garment of the figure on the colossal relief in Adılcevaz, discussed above. The lively gestures of the figures indicate a late date for the pendant, probably the late 7th or early 6th century B.C.

DIFFUSION OF URARTIAN INFLUENCE. The stylistic analysis of works of art from Urartu has shown that the Urartians, although strongly influenced by the Assyrians, created an art of their own that included stylistic elements derived from local tradition. The ringlet style in particular is found as far back as the gold bowl from Hasanlu near the southern shore of Lake Urmia (Teheran, Archaeol. Mus.; Dyson, 1962). The same style using small circles recurs on another gold bowl with lion-demons and gazelles, from northwestern Iran. The manifold relationship of Urartian art with works from Zawiyeh and other Scythian or Iranian examples has already been recognized by various scholars — Herzfeld (1941), Ghirshman (1962), Barnett (1956), Piotrovski (1962), Kantor (1960), Porada (1962). (See IRANIAN PRESASSANIAN ART CULTURES.) In an earlier study (1959) the author mentioned the occurrence of the ringlet style on gold works from Zawiyeh (VI, col. 406; see also Byvanck and Quarles van Ufford, 1962, 1963). The goldsmith of the Zawiyeh pectoral used small circles in an almost identical way and for the same body details, for example in representing the breasts, as the artist of the gold bowl from Hasanlu, but at Zawiyeh the connection with the manner of Urartian metalworkers seems to be still closer.

These comparisons can be extended also to the Scythian goldwork of southern Russia (see GRECO-BOSPORAN AND SCYTHIAN ART). The griffins and bulls on the gold sword sheath from Kelermes (I, PL. 437), display not only the specifically Urartian leg stylization of the animal figures from Toprakkale but also

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the same muscle stylization on the flank as is found in the lion images on the votive shields of Rusas III. There is a strong affinity with Urartian art, too, in the choice, the arrangement, and the handling of the figures of genii and of the stylized tree in the form of a candelabrum, set between two genii. Even some of the stags from this region, tied as they are to the typical Scythian animal style, and above all the lions on the gold handle of an iron ax from Kelermes show circular stylizations on the muzzles, feet, and leg joints that unequivocally stem from the circle style of the Hasanlu bowl and the ringlet style of Urartian art.

In conclusion, the influence of Urartian art on the archaic cultures of Greece and Etruria should be mentioned. If the Greeks and Etruscans imported and copied Urartian caldron appliqués in human and animal form, it is extremely likely that the granulation work of the Etruscan goldsmiths is also to be explained, at least in part, by the influence of Urartian models such as those brought to light recently at Altıntepe and Patnos. The continuing Russian and Turkish excavations will probably provide further important finds that will throw light not only on the history of Urartu but also on the question of the Orientalizing styles in Greece and Etruria.

BIBLIOG. K. F. Lehmann-Haupt, Materialien zur älteren Geschichte Armeniens und Mesopotamiens, Berlin, 1907; K. F. Lehmann-Haupt, Armenien einst und jetzt, I, Berlin, 1910, II, 1, II, 2, Berlin, Leipzig, 1926, 1931; F. Thureau-Dangin, Une relation de la huitième campagne de Sargon, Paris, 1912; E. Kunze, Kretische Bronzereliefs, Stuttgart, 1931; H. H. v. d. Osten, Altintepe, Bericht über den VI Internationalen Kongress für Archäologie, Berlin, 1940, p. 225f.; E. E. Herzfeld, Iran in the Ancient East, London, 1941; H. T. Bossert, Altanatolien, Berlin, 1942, pp. 87–92; B. B. Piotrovski, Karmir Blur, I–III, Erevan, 1950–53; R. Ghirshman, Le trésor de Sakkez, les origines de l'art Mède et les bronzes du Luristan, AAs, XIII, 1950, pp. 181–206; E. Kunze, Verkannter orientalischer Kesselschmuck aus dem argivischen Heraion, Reinecke Festschrift, Mainz, 1950, pp. 96–101; R. D. Barnett, Excavations of the British Museum at Toprakkale near Van, Iraq, XII, 1950, pp. 1–43; R. D. Barnett and W. Watson, Russian Excavations in Armenia, Iraq, XIV, 1952, pp. 132–47; R. D. Barnett and N. Gökçe, The Find of Urartian Bronzes at Altin Tepe, near Erzincan, Anatolian Studies, III, 1953, pp. 121–29; R. D. Barnett, The Excavations of the British Museum at Toprak Kale near Van, Iraq, XVI, 1954, pp. 3–22; R. Ghirshman, Iran, Harmondsworth, 1954; K. L. Oganesjan, Karmir Blur IV, Arhitektura Tejšebaini, Erevan, 1955; M. Pallottino, Gli scavi di Karmir Blur e il problema della connessione tra l'Urartu, la Grecia e l'Etruria, AC, VII, 1955, pp. 109–23; F. W. König, Handbuch der chaldischen Inschriften, I, II, Graz, 1955, 1957; G. M. A. Hanfmann, Four Urartian Bull's Heads, Anatolian Studies, VI, 1956, pp. 205–13; R. D. Barnett, The Treasure of Ziwige, Iraq, XVIII, 1956, pp. 111–16; P. Amandry, Chaudrons à protome de taureau en Orient et en Grèce, Studies presented to Hetty Goldman, New York, 1956, pp. 239–61; A. Goetze, Kleinasien, Munich, 1957, pp. 187–200; C. A. Burney, Urartian Fortresses and Towns in the Van Region, Anatolian Studies, VII, 1957, pp. 37–53; P. Amandry, Objets orientaux en Grèce et en Italie, Syria, XXXV, 1958, pp. 73–109; M. Pallottino, Urartu, Grèece and Etruria, East and West, IX, 1958, p. 29f.; P. Amandry, Grèce et Orient, Études d'archéologie classique, Paris, 1958, pp. 3–20; R. Ghirshman, Revue of 'Istoria Midii — Histoire de la Médie, Moscow, 1956', Bibliotheca Orientalis, XV, 1958, pp. 257–61; F. Steinherr, Die urartäischen Bronzen von Altintepe, Anatolia, III, 1958 pp. 97–102, C. A. Burney and G. R. J. Lawson, Urartian Reliefs at Adilcevaz, Anatolian Studies, VIII, 1958, pp. 211–18; P. Hulin, Urartian Stones in the Van Museum, Anatolian Studies, VIII, 1958, pp. 235–44; R. D. Barnett, Further Russian Excavations in Armenia, Iraq, XXI, 1959, pp. 1–19; P. Hulin, New Urartian Inscriptions from Adilcevaz, Anatolian Studies, IX, 1959, pp. 189–95; B. B. Piotrovski, Vanskoe Carstvo, Urartu (The Kingdom of Van, Urartu), Moscow, 1959; E. Akurgal, Urartu, medeniyeti (Urartäische Kunst), Anatolia, IV, 1959, pp. 67–114; H. Kantor, A Fragment from Ziwiye, JNES, XIX, 1960, pp. 1–14; C. A. Burney and G. R. Lawson, Measured Plans of Urartian Fortresses, Anatolian Studies, X, 1960, pp. 177–96; A. Erzen, E. Bilgiç, Y. Boysal, and B. Öğün, Toprakkale sondajlari ve bölgedeki Calişmalar, Türk Arkeoloji Dergisi, X, 1960, pp. 5–22; K. Balkan, Ein urartäischer Tempel auf Anzavurtepe bei Patnos und hier entdeckte Inschriften, Anatolia, V, 1960, pp. 99–131; H. Hoffmann, King Rusa's Candelabrum, ILN, November 19, 1960, pp. 896–97; A. Erzen, E. Bilgiç, Y. Boysal, and B. Öğün, Türk Arkeoloji Dergisi, XI, 1961, pp. 33–35; T. Özgüç, Excavations at Altintepe, Belleten, XXV, 1961, pp. 269–80; K. L. Oganesjan, Arin Berd, Erevan, 1961; E. Akurgal, Die Kunst Anatolians, Berlin, 1961, pp. 23–69; F. Hancar, Der Heilige Raum der Urartäer, Handes Amsorya, 10–12, Vienna, 1961, pp. 698–719; O. Sümer, Urartu pişmiş toprak eserleri hakkinda, Anatolia, VI, 1961–62, pp. 245–48; B. Öğün, Ausgrabung in Van auf den Toprak-kale 1959, Z. der D. Morgenländischen Gesellschaft, CXI, 1961, pp. 254–82; R. D. Barnett, Median Art, Iranica Antiqua, II, 1962, pp. 77–95; L. Byvanck and Quarles van Ufford, Le trésor de Ziwiye, BABsch, XXXVII, 1962, pp. 25–39; A. Erzen, Untersuchungen in der urartäischen Stadt Toprakkale bei Van in den Jahren 1959–61, AAnz, 1962, pp. 383–414; B. B. Piotrovski, Iskusstvo Urartu (The Art of Urartu), Leningrad, 1962; E. Porada, Alt-Iran, Baden-Baden, 1962; R. H. Dyson, Jr., The Hasanlu Project, Science, CXXXV, 1962, pp. 637–47; R. Ghirshman, La civilisation achéménide et l'Urartu, Studies in Honour of S. H. Taqizadeh, London, 1962, pp. 85–88; R. D. Barnett, The Urartian Cemetery at Igdyr, Anatolian Studies, XIII, 1963, pp. 154–98; L. Byvanck and Quarles van Ufford, À propos du trésor de Ziwiye, BABsch, XXXVIII, 1963, pp. 100–05.

Ekrem AKURGAL

Illustrations: PLS. 257–262; 3 figs. in text.

URUGUAY. The Eastern Republic of Uruguay (República Oriental del Uruguay), recognized as an independent state in 1828, borders Brazil on the north, Argentina on the west and south, and the Atlantic Ocean on the east. Apart from a narrow coastal plane, Uruguay can be described topographically as an undulating plateau with higher elevations known as *cuchillas*. Archaeological finds have so far disclosed little of artistic interest. From the time of European settlement the small indigenous population, the Charruas, made no significant contributions to the country's artistic heritage. Spanish influences remained predominant in the colonial period, during which the course of the country's development gave rise to a scant artistic production. Modern Uruguayan art falls within the mainstream of international movements, with some original local developments.

SUMMARY. Pre-Columbian period and indigenous production (col. 674). Colonial and modern periods (col. 675): *Architecture; Sculpture; Painting*. Modern centers (col. 679).

PRE-COLUMBIAN PERIOD AND INDIGENOUS PRODUCTION. The lower and middle basins of the Río Negro, which crosses the country from northeast to southwest and empties into the Río Uruguay, held settlements of aborigines who produced pottery of limited artistic value. Known historically as the Chaná Timbú, they were ethnically and culturally related to the inhabitants of the Paraná delta and the lower basin of the Río Uruguay. Following the shores of the Río de la Plata, this population spread toward the environs of Montevideo. From an artistic viewpoint the territory occupied by the Chaná Timbú is related to littoral Argentina (q.v.). Their highest artistic expression was reached in the incised decoration on their crude and badly fired pottery, which usually lacked handles or other additions.

In the archaeological deposits found in the fluvial littorals of the departments of Soriano, Colonia, and San José the sparse artistic patrimony is enriched by expressive forms similar to those which characterize the riparian pottery of the Argentine subarea, both in decoration and in the occasional presence of handles.

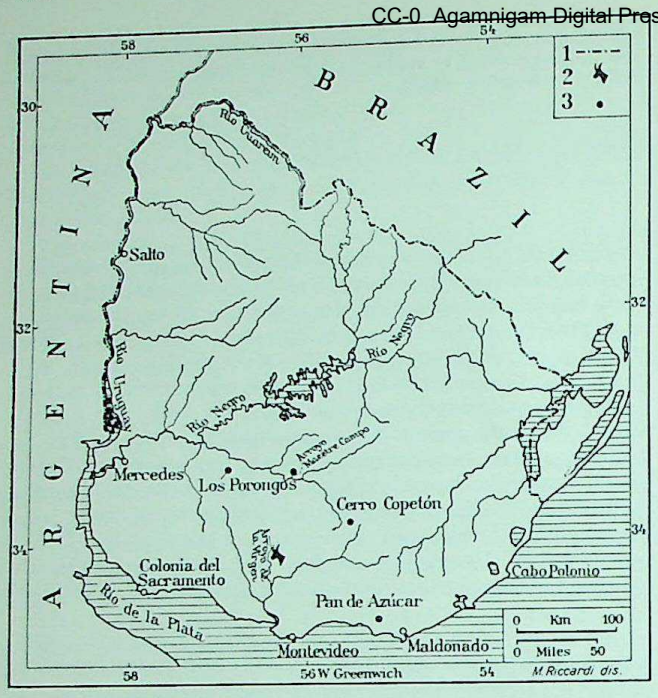
Works in stone are represented by the so-called "litos con pocillo" (stones with cuplike depressions) in human and zoomorphic forms, such as those of Mercedes, Cabo Polonio, Tacuarí, and San Luis; but they were without doubt of external provenance, belonging to the neolithic culture of southern Brazil.

In other cases Uruguayan archaeological finds pertain to a culture analogous with that of Patagonia, which the Charruas, already spread throughout the country by historical times and overflowing into the border areas of Brazil and Argentina, had further developed, with several local peculiarities. This culture is characterized by a stonework industry of the Patagonian type, which produced a substantial number of round or star-shaped bolas, as well as by burnished or incised pottery, subspheroidal in form and lacking handles. Rare examples of tubular stones about 8½ in. long with deeply incised geometric decoration come from the middle stretch of the Río Uruguay; these should probably be attributed to the Uruguayan extension of the Patagonian culture.

The Charruas, an indigenous population of nomadic hunters with a social and economic structure similar to that of the Patagonians, constituted the predominant element in Uruguay. The Charruas may have been responsible for a large number of the petroglyphs found in their territory, as there is a similarity between the geometric motifs found in the petroglyphs and the designs on hide robes in historical times. The mainly geometric motifs of the petroglyphs — such as those of the Arroyo Maestre Campo, Los Porongos, Cerro Copetón, Pan de Azúcar, and Chamanguá — bring to mind those of the incised plaques and rock carvings of northern Patagonia. The pictographs of the Arroyo de la Virgen, unlike their Patagonian counterparts, include human and animal figures.

Also worthy of mention are the sculptured plaques with motifs arranged in echelon found on both sides of the Uruguay River on the heights of Salto Grande and the painted pottery, typically Guaraní, discovered in some archaeological deposits in lower Uruguay; particularly important is that of Las Tunas, which has provided ceramics with an ocher, red, or cream-color slip.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Uruguay, principal localities of archaeological interest and modern centers. (1) Modern national boundaries; (2) pictographs on rock; (3) petroglyphs.

Remains of mounds, locally called *cerritos* or *terremotos*, have been found in eastern Uruguay.

In historical times the coast of Uruguay was inhabited by the Guayaná tribe, which was at the least linguistically influenced by the Guaraní. It would seem that the Guaraní should be credited with the diffusion throughout Uruguay of certain elements of the stone culture of southern Brazil.

Antonio Serrano

The colonial and modern periods. *Architecture.* Uruguay, in contrast to other South American countries, has little colonial architecture, which furthermore is marked by an extreme sobriety of style. As in the other arts, this situation can be traced to the lack either of a sufficiently advanced pre-Columbian culture or of an opulent style of Spanish life capable of engendering a rich and brilliant art. The first works of architectural significance in the Banda Oriental, as Uruguay was called by the Spaniards, appeared toward the middle of the 18th century. Built by military technicians, these works display stylistic imperfections. In fact, in the whole viceregal domain there was no center for the training of architects, and the only person in this profession to arrive from Spain in this period was the academician Tomás Toribio, who came to Uruguay in 1799. Consequently there are no structures revealing a full knowledge of architecture that date from before the 19th century. The colonial buildings also reflect the guiding concepts of the era. Thus the Christian virtue and moral values ascribed to education set a religious stamp on all academic and official buildings, while the patriarchal structure of the family determined the unusual amplitude of colonial dwellings. Urgent strategic necessities led not only to the founding of cities endowed with defensive works, such as Colonia del Sacramento, Montevideo, and Maldonado, but also to the elaboration of regional plans that were destined to ensure royal sovereignty over the settled population.

Works by military technicians are the citadel of Montevideo, conceived by Diego Cardoso (1742); the reconstruction of Fortaleza Santa Teresa on the Brazilian border, completed by Juan Bartolomé Howel (1780); the completion of the parish church (begun 1792) of the city of San Carlos by José Pérez de Brito, Juan del Pozo y Marquy, and José García Martínez de Cáceres; and the groundwork, according to the settlement plans of the viceroy Avilés, of the city of San Gabriel de Batoví in the north by Félix de Azara (1800) and of Belén in the west by Jorge Pacheco (1801). The most significant and typical example of colonial domestic architecture is the house of Manuel Cipriano de Mello y Meneses in Montevideo, constructed in 1783 by an anonymous architect; the scale of its plan clearly reflects the importance of the occupants.

The work of academically trained architects began when the above-mentioned Tomás Toribio of the Academia de S. Fernando in Madrid arrived to supervise the erection of the parish church in the most important church in the Banda Oriental, which was designed in 1784 by Custodio de Saa y Faría. When Toribio died in 1810 among the works he left behind were his own house, projected seven years before, which was unusually functional in style for those times; the unfinished plans for the Cabildo (Town Hall) and Reales Cárceles (Royal Prisons), initiated in 1804, in which he adhered to the purest neoclassical canon; and the designs made in 1808 for the reconstruction of the parish church of Colonia del Sacramento. The monumental chapel of the Hospital de S. José y la Caridad in Montevideo, probably completed in 1807, is attributed to Toribio. The hospital itself was designed in 1825 by José Toribio, son of Tomás, who prolonged the academic hegemony in the field of architecture until 1831, the year in which he constructed an exceptionally opulent house for the Montero family in the Uruguayan capital.

With the birth of the republic in 1830 the preeminence of Spanish culture ended. In spite of aspirations to a national art that exceeded the possibilities, France took the place of Spain as the main source of cultural influences from abroad. Architecture in the 19th century was therefore dominated by the historical eclecticism that was characteristic of the Ecole des Beaux-Arts in Paris. The new style was introduced into Uruguay both by European architects and engineers who settled in the country and by Uruguayans who had studied in Europe. Not until 1890 was the first school of architecture in Uruguay organized by a group of European-trained architects whose teaching left the prevailing architectural doctrine and style unaltered.

In 1837 Carlos Zucchi, an Italian architect from the Ecole des Beaux-Arts in Paris, designed the Plaza Independencia in Montevideo, combining the scheme of the "places royales" of Paris with arcades like those of Rue de Rivoli. Víctor Rabú, also from the Ecole des Beaux-Arts, introduced the Neo-Gothic style to the Uruguayan capital with his chapel for the Jackson family (1870), a Chinese-inspired style in the villa of Fynn (1872; demolished), and the Moorish style in his own house at Eastman. Luis Andreoni, an Italian engineer who was trained in Turin, carried to completion the Central Railway Station in Montevideo in 1897, enveloping the glass and steel structure with decoration in historical styles, predominantly Palladian. The last-mentioned edifice, the Huérfanos (Orphanage) built by Rabú in 1875, and the Vilardebó Asylum, erected three years later by the Uruguayan engineer Eduardo Canstatt, show a growing concern with practical considerations in architecture.

The early 20th century brought currents derived from the Art Nouveau movement. Uruguayan architecture was further endowed when the school, transformed in 1915 into the Facultad de Arquitectura of the Universidad de la República, began to award scholarships to its most promising students. Travel in Europe and the United States and contacts with pioneers in contemporary architecture enabled returning architects to contribute to the diffusion of new architectural trends through their teaching, professional activity, and writings. Modifications and changes began to be introduced in relation to the needs that architecture must satisfy. Liberal influence reduced the religious direction of assistance and educational programs and emphasized their practical objectives, while the abandonment of the austere, patriarchal order of family life led to a fashion for villas surrounded by exotic gardens.

In 1908 Américo Maini founded the "Brazil school" of architecture in Montevideo, which in its forms was fashioned after the models of the Vienna Sezession movement and in its functionalism reflected the pedagogical precepts imposed by the scholastic reform of 1877. In 1916 Leopoldo J. Tosi used reinforced concrete — a material that had been introduced in Montevideo in 1891 — in the Casa Comercial Pablo Ferrando, which was designed with large windows and open interior spaces. The work of Mauricio Cravotto shows the rationalist tendency taken by architecture in Montevideo. Though Cravotto's Palacio Municipal, the winning project in the competition of 1929, is a work of uncertain category among the various antihistorical currents, his master plan for the city of Montevideo, drafted in 1930, and his design for the Rambla Hotel, conceived in 1931, are rationalist in essence.

In the same decade, also in Montevideo, two edifices with highly functional plans were built: the Hospital de Clínicas (1930), designed by Carlos Surraco in accordance with modern criteria of medical practice and instruction; and the Faculty of Engineering and Surveying (1938), by Julio Vilamajó, in which the disposition of volumes and articulation of spaces are expressive of the structure's use for a specific program of higher education and research. In 1946 Vilamajó planned the town of Villa Serrana in the department of Lavalleja, adapting it to the lay of the land and creating the first buildings, Ventorrillo de la Buena Vista and Mesón de las Cañas, in the construction of which he used local materials, techniques, and workmen and conserved the natural features of the surrounding landscape. In 1947 Vilamajó — and, in effect, contemporary Uruguayan architecture — received international recognition through his appointment

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

to the Board of Design Consultants for the construction of a permanent seat for the United Nations in New York.

Residential construction has been oriented in three directions, as witnessed by the following examples in Montevideo: single-family dwellings, such as the house incorporating the various plastic arts that Mario Payssé Reyes designed and had built for himself in 1954; integrated community development (centralized since 1937 under the Instituto de Vivienda Económicas), of which district no. 16, planned in 1956, is based on the concept of neighborhood unity; and multiple housing, with units for rent or for sale, among which the Edificio Panamericano, designed by Raúl Sichero in 1957, is notable for its size and attention to layout. Between 1956 and 1958 the architect Carlos Gómez Gavazzo, as acting executive of a commission that he had organized, formulated the standards of the over-all development plan for Montevideo.

Aurelio LUCCHINI with the collaboration of Nydia CONTI DE QUEIRUGA

Sculpture. In Uruguay the art of sculpture has no discernible antecedents in a native tradition or in a colonial style, and its legitimate reliance on European traditions arose from the fact that the population, an amalgamation of immigrants from the Mediterranean area, naturally turned to the styles of their countries of origin. In fact, the lack of a strong tradition and the apathy of the public proved to be the determining factors in setting Uruguayan sculpture on its course toward modernity.

Uruguay's first renowned sculptor was Juan Manuel Ferrari (1874–1916), whose gift for romantic evocation culminated in his ambitious work commemorating General San Martín's passage over the Andes, situated on the Cerro de la Gloria in Mendoza, Argentina. Other works by Ferrari display a naturalism of the highest order.

The work of Antonio Pena Rego (1894–1947) dates mainly from the post-World War I era. Eclectic in his sculpture and teaching, he spread in Uruguay the modernism of the French sculptor Emile Antoine Bourdelle (1869–1929). The latter sculptor's stylistic influence can also be observed in the works of Gervasio Furest Muñoz, Federico Moller de Berg, who later assimilated other teachings, and José Zorrilla de San Martín, best known for his monumental works, whose rich humanistic inspiration in the baroque vein found its fullest expression in a series of figures that were not subject to the inevitable conditions imposed by commissions. The sculptor and teacher Severino Pose (1894–1962) studied under the Vienna-trained sculptor Anton Hanak (1875–1935).

Pablo Mañé, whose sculpture is in the tradition of Aristide Maillol and Charles Despiau, executed almost all his works in France. Vicente Morelli, who also lived outside his country for a prolonged period, established his reputation with a small but well-conceived production of portraits. After 32 years in Italy, Edmundo Prati (b. 1889) returned to Montevideo in 1937, where, in addition to his activities as sculptor and teacher, he lectured on esthetics as the principal opponent of avant-garde movements.

José Belloni is well-known for his forthright naturalism, exemplified by the monumental group *La Carreta* ("Covered Wagon") in the Batlle y Ordoñez Park in Montevideo, as well as for his powerfully accented composition and high decorative criteria, found in such works as the *William Tell* or the *Aquador* ("Water Vendor") in Montevideo's Plaza Viera.

Bernabé Michelena (1888–1963) was less compliant with traditional concepts or with established norms of good taste, which he regarded as not always being consonant with artistic imperatives. His work was not, however, weakened by forced attempts at originality. Many of Michelena's disciples distinguished themselves, while developing their own individual styles: Armando Gonzales, whose highly organized compositions reveal a naturalistic tendency, and Homero Bais, one phase of whose work is marked by expressionistic accents in the rendering of folk themes, a line also followed by Fernando Tuduri. Alberto Savio felt the same influence, but he always retained a profound lyricism in his work. In the works of Juan Martín rather simple schemes are developed with a sensitive modeling on impressionistic lines.

Germán Cabrera (b. 1903), after excellent academic training, completely broke with all traditional roots and turned to abstract composition. Other sculptors who work in the abstract current are María Freire, Salustiano Pintos, and Julio C. Costa. Also drawn to this style is Ramón Bauzá, an Argentine by birth, who is one of the few sculptors in Uruguay to seek expression of volume through the material itself, an approach that has led him to the discovery of unsuspected qualities in native stone. Some of his animal figures must be counted among the most expressive in Uruguayan sculpture.

Most of the foreign artists whose work can be placed wholly or partially within the cultural ambit of Uruguay are in the vanguard of this art form. An exception among the major artists is María Carmen Portela of Argentina, an exponent of a simple naturalism that coincides with her predilection for figures of women and children. In Montevideo other foreign sculptors, such as the Spaniard Pablo Serrano, participated in the arduous process of transition from a thoroughly mechanical mannerism to an expressionist tendency, including various textural and compositional experiments. Eduardo Yepes, also a Spaniard, was young when he arrived in Montevideo, but he was fully developed artistically, with a comprehensive knowledge of pre-Renaissance tradition and of all contemporary currents. After passing through and transcending an abstract period, he began to execute soaring and highly dramatic works, many of which have been placed on public sites.

Nerses Ounanian, a Greek of Armenian descent, lived in Uruguay from childhood and died in Montevideo at the age of 37. After a journey through Europe and the Near East, Ounanian departed ever more pronouncedly from the principles and concepts of his teachers, Pena Rego and Prati. Although traditional modeling was the basis of his art, which reveals a strong interest in the basic material, he established an individual, essentially modern style, with an element of conscious iconoclasm. If this style did not reach full maturity, it was owing to the briefness of Ounanian's career.

Fernando GARCÍA ESTEBAN

Painting. Also in the art of painting Uruguay did not experience a highly creative colonial period. Because of its almost entirely immigrant population, mainly from Spain and Italy, the country has always maintained close ties with Europe. Uruguayan painting began to develop during the second half of the 19th century, at a time when steam navigation facilitated transatlantic travel. Almost all Uruguayan artists traveled and studied abroad, especially in Florence and Rome and, later, in Paris, and among these there were many painters who invested the basically European orientation of their works with individual qualities.

Uruguay's first important painter, Juan Manuel Blanes (1830–1901), was one of the most imbued with European culture and training. He studied in Florence, where he acquired a mastery over his medium that enabled him to paint those historical themes which met his country's need for visual depiction of the outstanding events in its short history. He treated historical themes with the emphasis that was then fashionable but always with a notable narrative power, Blanes also executed pictures of life in the interior of Uruguay, then practically uninhabited, where the most compelling and picturesque personage was the Gaucho, and he painted excellent portraits of high artistic quality.

Rafael Barradas (1890–1929) spent part of his brief, intense life in Spain, where he produced the greater number of his paintings, in which he developed a modality that relates them to certain tendencies in Spanish art of this period. In his work, always strong and individual, sharply drawn lines define the contours of the figures, which are full of rhythm and evocative power. His subjects are often Spanish folk types, though other canvases are recollections of the Montevideo of his childhood. Barradas has been identified with certain aspects of expressionism.

Pedro Blanes Viale (1879–1926) introduced impressionism into Uruguay. Besides his pictures of Uruguay, he left warm and vibrant landscapes of Mallorca, which had captivated him with its color and luminosity.

Though Pedro Figari (1861–1938) had painted since his youth, he did not seriously begin his belated, persistent, and valuable production until 1920. He is perhaps Uruguay's most original painter. His European training, although intense, did not modify his robust, personal outlook. In Uruguayan painting he has neither direct antecedents nor important followers. Though some critics have with reasonable criteria related him to the postimpressionists, Figari eludes classification in any particular school. All his works are compelling for their richness and perfect harmony of colors, for their free but rigorous composition, and for their constantly accentuated poetic feeling. Among his nostalgic themes are the patios of old town or country houses, great trees standing alone on the plains, and celebrations among the Negroes that hark back to the days of slavery. He conferred on everything a strong local flavor, and in his rural scenes conveyed the penetrating melancholy of the landscape. His expressive technique, an unusual mixture of European and personal elements, consisting of color without outline, short brushstrokes, and pictorial excellence, give Figari a preeminent place in American painting of his time.

Joaquín Torres García (1874–1949), one of the most prominent figures in Uruguayan painting, worked in Spain and in Paris, where, with Michel Seuphor, he founded the review *Cercle et Carré* (see NONOBJECTIVE ART). His close friendship with Mondrian is revealed by certain elements in his work. When Torres García returned to Uruguay in 1934, he created a school of great consequence. In lec-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

tures he expounded an artistic doctrine and a number of works of art that were later published in such works as *Estructura* and *Universalismo Constructivo*. Apart from his masterful easel painting (landscapes and portraits), he developed in Uruguay the idea of a constructivist art, which was applied mainly in murals; the basic composition consists in establishing a network of vertical and horizontal lines in golden sections, within which are inscribed austere emblems. Torres García's palette was muted, sober, and ascetic. He was a master owing to the force of his ideas and to his painting, of metaphysical aspiration, with its balanced tones, deep significance, and powerful individuality. Many notable painters received their formative training in his studio school, and traces of his influence can be seen in the works of artists who have not kept faith with his teachings.

The impact of nonobjective art was felt immediately in Uruguay, and diverse orientations appeared within the over-all trend. In Uruguayan painting the ties with European trends have become even more intimate with easier travel and with the increased dissemination of books and publications pertaining to this field. After a period of uncertainty and disorientation, nonobjective art now has a dominant place and excellent exponents in Uruguay. In the area of "informal art," to use the term in its broadest connotation, Uruguayan artists have made some noteworthy contributions. There is also a strong tendency to incorporate nontraditional materials into the medium of painting and to obtain compelling effects in monochrome or, on the contrary, in vivid colors. At the same time, as is true in other places, representational art is on the decline, though a current of realism continues on a minor scale.

Leopoldo Carlos ARTUCIO

BIBLIOG. *Pre-Columbian period*: A. Larruari, Pictografías de la República Oriental del Uruguay (Primera Reunión Nac. de la Soc. Argentina de Ciencias Naturales, Tucumán, 1916), Buenos Aires, 1918–19, p. 525; G. J. Devincenzi, Notas arqueológicas de la Dirección, Anales del Mus. de H. Natural de Montevideo, II, 1927, pp. 321–29; R. Penino and A. F. Sollazzo, El paradero charrúa del puerto de las Tunas y su alfarería, Rev. de la Soc. Amigos de la Arqueol., I, Montevideo, 1927, p. 151; B. Sierra y Sierra, Antropolitas y zoolitos indígenas, Rev. de la Soc. Amigos de la Arqueol., V, 1931, p. 91; A. Serrano, La cultura lítica del sur brasileño, Rev. Geog. Americana, IX, 10, 1938; C. A. Freitas, Alfarería del Delta del Río Negro, Rev. de H., XIII, Montevideo, 1942; A. Serrano, Las placas esculpidas del litoral, La Prensa, Buenos Aires, Feb. 8, 1942; J. J. Figueira and C. A. Freitas, Pictografía en la territorio uruguayo, Rev. de la Soc. Uruguaya de la Arqueol., XII, 1953, p. 189; J. J. Figueira, Pictografía del Cerro Pan de Azúcar, El Día, May 30, 1954; E. F. Acosta y Lara, Los Chaná-Timbúes en la antigua Banda Oriental, Anales del Mus. de H. Natural de Montevideo, VI, 1955; D. D. Vidart, Los estratos culturales del Uruguay indígena, Amerindia, I, 1962, pp. 101–06.

Colonial and modern periods: J. M. Fernandez Saldaña, Pintores y escultores uruguayos, Montevideo, 1916; R. Mora Margariños, Pintura y escultura, Montevideo, 1937; E. Laroche, Algunos pintores y escultores, Montevideo, 1938; E. Boix, Un siglo de arquitectura en el Uruguay, Anales de la Facultad de Arquitectura, VI, 1943, p. 209 ff.; E. P. Baraffio, Reseña sobre la Facultad de Arquitectura, Anales de la Facultad de Arquitectura, VII, 1943–44, p. 20 ff.; A. Ricaldoni, La planificación urbanística en la evolución de Montevideo, Rev. del Inst. de Urbanismo, VIII, 1943–44, p. 65 ff.; J. M. Fernandez Saldaña, Fichas para un diccionario uruguayo de biografías, Montevideo, 1945; J. Romero Brest, Pintores y grabadores rioplatenses, Buenos Aires, 1951; I. Giuria, La arquitectura en el Uruguay, Montevideo, 1955–58; J. P. Argul, Pintura y escultura del Uruguay, Montevideo, 1958; F. García Esteban, Panorama suscinto del desarrollo de las artes uruguayas (pref. to the cat. of the exhibition "De Blanes a nuestro días," Punta del Este), Montevideo, 1961.

MODERN CENTERS. Colonia del Sacramento. Founded in 1680 by Portuguese settlers from Brazil, the town contains dwellings of the colonial period, most noteworthy of which are the viceregal mansion and the houses of General Mitre and Almirante Brown, all constructed toward the end of the 18th century. The parish church also dates from colonial times. The town and many of its buildings, with the exception of the parish church, are distinctively Portuguese in style.

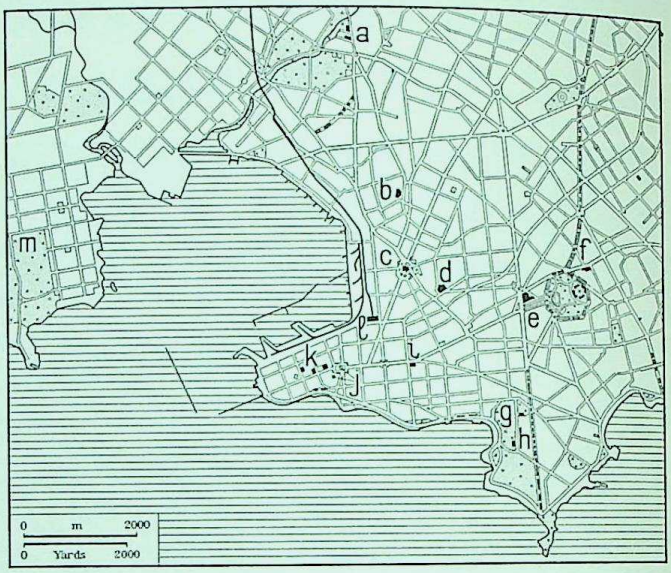
BIBLIOG. F. Capurro, La Colonia del Sacramento, Montevideo, 1928.

Maldonado. In the town, which was founded in 1757, the colonial structures of major interest are the watch tower known as Torre del Vigía, dating from the last quarter of the 18th century, and the parish church, S. Fernando, begun in 1801.

At nearby San Carlos, founded in 1763, the parish church is the most important edifice.

BIBLIOG. H. Arredondo, El Fuerte de Santa Teresa, Rev. del Inst. Histórico y Geográfico del Uruguay, 1920, p. 177, 1921, pp. 151–361, 1922, p. 673; B. Caviglia, El Fuerte de San Miguel, Rev. de la Soc. Amigos de la Arqueol., VII, 1933, p. 273; C. Seijo, Maldonado y su región, Montevideo, 1945; F. Capurro, San Fernando de Maldonado, Montevideo, 1948.

Montevideo. The city, founded in 1726 by Bruno Mauricio de Zabala, governor of Buenos Aires, became the capital of independent Uruguay in 1828. Notable monuments in the old center of the city are the dwelling of Cipriano de Mello y Meneses, now the Museo Histórico Nacional; the Cathedral, formerly the parish church; the Cabildo and Reales Cárceles (Town Hall and Royal Prisons); the Hospital de S. José y la Caridad and its chapel; the residence of the Montero family; the classical Teatro Solís, constructed between 1840 and 1850 on a plan by Carlos Zucchi that was adapted by Francisco Xavier Garmendia; and the Neo-Tudor house of Francisco Gómez, now seat of the departmental council, constructed by Ignacio Pedralbez between 1865 and 1875. Outside the old city



Montevideo, plan of the center of the city. Principal monuments: (*a*) Museo Municipal de Bellas Artes Juan M. Blanes; (*b*) Vilardebó Asylum; (*c*) Law Courts; (*d*) Prison; (*e*) Italian Hospital; (*f*) Hospital Clínicas; (*g*) Museo Nacional de Bellas Artes; (*h*) Faculty of Engineering and Surveying; (*i*) Palacio Municipal; (*j*) Plaza Independencia and Teatro Solís; (*k*) Cabildo and Reales Cárceles, Cathedral, and Museo Histórico Nacional; (*l*) Central Railway Station; (*m*) the Cerro.

are the fortress on the hill known as the Cerro, finished in 1802 by José del Pozo y Marquy; the villa that now houses the Museo Municipal de Bellas Artes Juan M. Blanes, a Palladian construction by Juan A. Capurro, built in 1870; the classical Estévez residence, today the Government House, constructed by Capurro between 1878 and 1880; the Neo-Gothic Berro villa, now the Argentine Legation, a work by the above-mentioned Pedralbez, dating from 1880; the classical Italian Hospital, erected between 1885 and 1890, and the Central Railway Station, both by Luis Andreoni; the house of Julio Vilamajó, by whom it was designed in exquisite Mediterranean taste in 1930; the Hospital de Clínicas; the new Palacio Municipal and the Faculty of Engineering and Surveying; the Edificio Panamericano, a large apartment building; and, in the Toledo district, the Archdiocesan Seminary, begun in 1954 by Mario Payssé Reyes.

BIBLIOG. J. Vilamajó and W. Hill, La Facultad de Ingeniería, Montevideo, 1939; C. Pérez Montero, La Calle del 18 de Julio, 1711–1875, Montevideo, 1942; C. Pérez Montero, La Iglesia Matriz, 1865–67, Rev. Nac., LXIII, 1943; C. Surraco, El Hospital de Clínicas de Montevideo, Anales de la Univ., CLIV, 1944, p. 23; C. Pérez Montero, El Cabildo de Montevideo, Montevideo, 1950, II, 1958; C. Abella Trias, Montevideo, la Ciudad en que vivimos, Montevideo, 1960.

Aurelio LUCCHINI, with the collaboration of Nydia CONTI DE QUEIRUGA

Illustrations: 2 figs. in text.

UTAMARO. The Japanese painter and printmaker Kitagawa Utamaro (1753–1806) is considered by many the greatest representative of the movement, or school, called Ukiyo-e (q.v.). The success that Utamaro's works had when they were shown in the Paris Exhibition of 1889, and Edmond de Goncourt's biography of him, which appeared in 1891, contributed to his becoming perhaps the first among Japanese artists really to be

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

known in the West. Utamaro's formation as an artist took place under the guidance of the painter and poet Toriyama Sekien (1713–88), but his artistic personality developed to maturity in relation — and in opposition, so to speak — to that of Torii Kiyonaga (1752–1815).

It was the noted publisher and patron of art and letters Tsutaya Jūzaburō, sponsor of the great series of prints by Sharaku (PL. 234), who discovered and promoted Utamaro's talent; his seal, a stylized Fuji surmounting an ivy leaf, appears on many of Utamaro's prints. It almost seems as if Tsutaya wanted to counterpose Utamaro to his contemporary, the already famous Kiyonaga, in order to stimulate the market for prints, as well as to solicit patronage. But Utamaro's unquestionable brilliance, his profound psychological insight, and the technical innovations of which he made use did not diminish the success of Kiyonaga. However, when, in the late 1780s, Utamaro's own idiom emerged in its mature form, his ascent to a dominant position was rapid, and Kiyonaga suddenly ceased to produce prints, although he outlived Utamaro by almost a decade. During the period when they were both producing, they were the two poles of the Ukiyo-e movement; yet Utamaro drew from Kiyonaga (IV, PL. 448) the vision of idealized feminine beauty that he pursued, a quest that led him to the peak of his artistic achievement.

The output of Utamaro was enormous and diversified, his productivity being matched by his versatility; his finest works are probably his figures of individual courtesans. Among his depictions of beautiful women are many bust portraits (PLS. 265, 266, 268; IV, PL. 446). This form, previously used only for actors (PL. 234), was first applied to the portrayal of women by Utamaro in about 1790. The setting of the subject in the immediate foreground made it possible for the artist to concentrate on the details of the face and the attitude of the head. Keenly sensitive to psychological factors, Utamaro took full advantage of the potentialities afforded him by the new approach. Thus, in the *Kasen-koi-no-bu* series, illustrating love poems, he succeeded in delineating various aspects of love, classified in the traditional categories, by stressing the most subtle nuances of feeling. The rendering of hair styles and costumes is always exhaustively detailed. The expression of the face is determined by infinitely minute elements: in the well-known *Pensive Love* (Narazaki, 1966, pl. 61), for example, the stylized and very delicate eyes of the young woman are lost in an absorbed, dreamy gaze, an effect obtained more by the position and the compositional handling of the head and the deeply serious face than by the treatment of the pupils of the eyes, here reduced almost to simple, oblique lines.

Utamaro also rendered episodes from real life, everyday scenes (PLS. 263, 267, 268), and mythological subjects. In the two beautiful series devoted to the story of the "mountain woman" Yamauba and her infant son Kintaro (Kintoki), a Hercules-like figure of Japanese legend, Utamaro gives proof of an extraordinary feeling for plasticity and demonstrates a restrained but profound sensuality. His albums devoted to insects, birds, and shells reveal the acuteness of his powers of observation, and some of the images they contain give evidence of a prodigious striving to depict nature and life in their most significant manifestations.

Above all, Utamaro is the interpreter of Japanese feminine beauty, psychologically plumbed and studied with a realism and a plastic sense that render superfluous any lyrical embellishment or literary point of reference — *vide* the portrait of Okita holding a teacup (Michener, 1959, pl. 159). Utamaro's immense success is perhaps due also to this particular immediacy of expression, the fruit of prolonged studies, clarified by exceptional artistic experience. Also contributing to his fame is that profound sensual content which is never missing, not even in compositions of the greatest delicacy and psychological depth.

Utamaro's innovations were not limited to the introduction into the portrayal of women of the new style of placing large-faced figures in the foreground. He made the most of the material qualities of the white paper on which the designs were printed for representing effects of snow and white objects in general, and he was the first to indicate facial contours, for instance, without the use of lines (PL. 264). In practice, the use of the empty space in a wood block, according to the technique called *kara-oshi* (from *kara*, emptiness, and *oshi*, a weight), adds what Berenson called "tactile value" to the print, as Akiyama (1961) rightly points out. In the use of this technique and the innovation of printing without outline, Utamaro is revealed as talented and sensitive, vitally interested in all facets of artistic creation and, in a sense, an anticipator of esthetic and critical positions that the West was to adopt, with a different and clearer awareness, only much later.

Not only was Utamaro one of the greatest of the Ukiyo-e artists; he was an unequaled master in the art of the print. His female images, sometimes extraordinarily alive, constitute an interpretation of feminine beauty that contrasts with the delicate figures of Suzuki Harunobu (PL. 233; IV, PL. 446), but in the last analysis the creations of both artists merge as eternal aspects, opposite and complementary, of the reality of life and love.

BIBLIOG. E. de Goncourt, Outamaro: Le Peintre des Maisons Vertes, Paris, 1891 (3d ed., 1904); F. Rumpf and O. Kümmel, ThB, XXXIV, p. 9; J. Kurth, Utamaro, Leipzig, 1907; Utamaro: Estampes japonaises . . . exposées au Musée des Arts Decoratifs, Paris, 1912 (introd. by R. Koechlin); Y. Noguchi, Utamaro, London, 1925; Gemeentemuseum, Utamaro, The Hague, 1953 (introd. by J. R. Hillier); Outamaro, 1754–1806, peintures, estampes: Exposition commémorative du bi-centenaire de la naissance de l'artiste, Paris, 1954 (introd. by J. Adhémar); Catalogue of the Work of Kitagawa Utamaro, 1753–1806, in the Collections of the New York Public Library, New York, 1950 (introd. by H. G. Henderson); I. Kondo, Kitagawa Utamaro (1753–1806), Rutland, Vt., Tokyo, 1956; L. Hájek, Utamaro: Portraits in the Japanese Woodcut, London, 1958; J. A. Michener, Japanese Prints from the Early Masters to the Modern, Rutland, Vt., Tokyo, 1959; T. Akiyama, Japanese Painting, Geneva, 1961; J. R. Hillier, Utamaro: Colour Prints and Paintings, New York, 1961; K. Shibui, Utamaro, New York, 1962; K. Shibui, Ukiyo-e Zuten, 13, Utamaro, Tokyo, 1964 (in Jap. with some Eng. captions); Twelve Wood-block Prints of Kitagawa Utamaro Illustrating the Process of Silk Culture, San Francisco, 1965 (introd. by J. Hillier); M. Narazaki, The Japanese Print: Its Evolution and Essence, Palo Alto, Calif., 1966. See also the bibliog. for UKIYO-E.

Mario BUSSAGLI

Illustrations: PLS. 263–268.

UTENSILS AND TOOLS. Utensils and tools are of interest in art from several points of view. By their form or decoration they may be objects of art in themselves; as instruments employed in the production of art objects they may have an important influence on formal development; and tools and their use may appear in art as themes and motifs, sometimes with symbolical or emblematic significance. In addition, the study of utensils and tools is of prime importance in prehistory (q.v.), since they are the first material evidence of man's activity as *homo faber* — the activity in which all art is rooted.

Many specialized types of instruments and practical equipment are treated in other articles (see ARMS AND ARMOR; CERAMICS; HOUSEHOLD OBJECTS; LITURGICAL AND RITUAL OBJECTS; MUSICAL INSTRUMENTS; SCIENTIFIC AND MECHANICAL WORKS; TABLE AND FOOD) and are therefore excluded here. This article is devoted primarily to work tools of elementary and immediate utility — that is, those types of instrumental objects usually originally conceived entirely in terms of function, without primary esthetic intent, especially equipment for hunting and fishing, the implements of agriculture, and the tools of the crafts and trades. Examples are drawn from a variety of cultures and periods, but the treatment is intended to be illustrative rather than inclusive.

SUMMARY. Introduction (col. 682). The development of utensils and tools (col. 684). Utensils and tools as works of art (col. 687). Representations of utensils and tools in art (col. 689).

INTRODUCTION. The basic design of most ordinary hand tools was arrived at in the prehistoric and protohistoric periods; subsequent modifications were directed toward achieving increased efficiency or were necessitated by the use of new materials. There is basically no difference between a modern steel ax and a neolithic stone ax: a woodsman today would have no difficulty in recognizing the ancient counterpart of his

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

tool. Originally the craftsman himself either made his tools or supervised their making. These objects had an inherent formal beauty in that their form was determined by their function; and the craftsman had in addition a natural feeling for the material used and for what was "fitting" in his tools, as was pointed out in a comment on a 1948 exhibition of old English hand tools: "Everybody who appreciates the qualities of materials loves wood, and here wood was formed into . . . a special kind of tactile sculpture made to be felt with the hand. . . . Old craftsmen, when they buy a new set of modern chisels, throw away the handles and carefully fit their own" (Singer et al., 1954–59, III, p. 114). To modern eyes the coinciding of function and form in itself suffices to make an object a work of art. In pre-Platonic Greece, according to L. Grassi (1962), the most common commendatory word was that corresponding to "good," denoting the ability of an object to perfectly fulfill its function, in consideration of both its utility and its structure. The term "beautiful" was used only, as in the case of royal gifts, for qualities over and above their pure utility. It is interesting to note that this equating of functional simplicity with good design, and therefore beauty — which was to become a basic premise of modern industrial design — reappeared in the New World as early as James Fenimore Cooper's observation of 1828, in *Notions of the Americans*, that American plows were more "graceful and convenient" and American axes more "admirable for form, for neatness, and for precision of weight" than their English counterparts. The British Commission's report on the United States Centennial Exhibition of 1876 in Philadelphia came to the same conclusion, although some foreign observers were still rigidly attached to the old European standards of decoration: a German delegate objected that "certain objects of daily use which ought to be richly decorated . . . show the sad state of American taste by the complete absence of ornamentation" (Kouwenhoven, 1962, pp. 16–17).

Tools kept pace with the increasing specialization of trades and crafts in successive cultures. When they were decorated, the decoration either followed tradition or echoed the style of the period. Particular care was lavished on instruments and utensils such as scales, oil lamps, and surgical and astronomical instruments (PLS. 274, 275; see also SCIENTIFIC AND MECHANICAL WORKS, col. 805). With the advent of machine technology and the subsequent distinction of handicrafts from industrial production, tools and utensils also entered the field of industrial design (q.v.; see also AMERICAS: ART SINCE COLUMBUS, cols. 328–330).

Utensils and tools cross the boundary of functionality when they become adjuncts to some symbolic activity. As symbols of temporal or religious power (see LITURGICAL AND RITUAL OBJECTS; SYMBOLISM AND ALLEGORY) they may completely lose their functionality (double ax, Cretan royal symbol; ceremonial adzes from Mangaia in the Cook Islands, XI, PL. 208; jadeite ceremonial axes from New Caledonia, symbol of authority) or change their significance (the flabellum once used to drive flies away from the Eucharist; the Egyptian flail, symbol of kingship, IV, PL. 393); while the emblematic representation of specific tools (see EMBLEMS AND INSIGNIA) may suffice to evoke a specific deity, person, or group (PL. 285). The category of simple implements is transcended when utensils and tools are made for specific persons or classes and become insignia (for instance, implements used by royalty; VI, PL. 244), to be judged according to fine-art standards. In primitive societies, equipment for hunting and fishing was often connected with magic (q.v.) and hence an object of particular decoration; and where the hunt became an aristocratic prerogative — a sport rather than a prime necessity — its accouterments came to be differentiated by ornamentation and material from more humble forms. Applied decoration is especially characteristic of folk art (q.v.) and of the tools and implements of primitive peoples (PL. 284; IX, PL. 456).

Genre representations of the utensils and tools of various occupations (see GENRE AND SECULAR SUBJECTS) provide some of the most charming pages in man's representation of the life around him, in addition to their importance to historians and scholars in providing information on the technology and tenor of a given period. Finally, a knowledge of the tools available and their bearing on the execution of a work of art may contribute to the artistic judgment of the work and establish its position in the historical context.

• •

THE DEVELOPMENT OF UTENSILS AND TOOLS. The panorama of tools and utensils offered by the Paleolithic (see PREHISTORY) is not too vast, at least in its early phase — perhaps partly because many of the artifacts of that distant epoch seem to modern eyes almost identical. Among the earliest tools may be counted the great Abbevillian (Chellean) hand ax, with its jagged cutting edge, and its more refined successor the Acheulean hand ax (XI, PL. 242), in which a dawning esthetic sense is recognizable (see XI, col. 566). The most rudimentary prototype of the hammer and ax can be recognized in this implement, which lent itself well to many uses. Produced usually from large pebbles or small rocks of flint or quartzite, these artifacts have a convenient grip and a sharp, tapered cutting edge. The tools of the Middle and Upper Paleolithic were gradually perfected. The Mousterian industry with its large retouched-flake tools led the way to the blade-flaking technique (see TECHNIQUES) and a variety of tools including scrapers, burins, long blades of extraordinary sharpness, and awls — all devised, with surprising skill, from flakes of flint and then used for working other materials.

Along with stone utensils, which gradually became smaller and more carefully finished, the processing of bone and horn improved; the soil of France has yielded remarkable examples of this workmanship. The Magdalenian period, indeed, is characterized by a plentiful production of implements and weapons made from the long bones of animals and from their horns — materials that combined a durability not offered by wood with a greater ease of processing than stone afforded. The type stations of this epoch have yielded an abundance of utensils in which the artistic sense of these early peoples is evidenced in engravings and carvings that range from a naturalistic depiction of fauna to a geometric interlacing of lines and notches (XI, FIG. 599).

Justly famous are the hunting spears — direct prototypes of those still in use among certain peoples — furnished with one or two rows of teeth and embellished with linear engravings; and especially notable are the *bâtons de commandement* (or, as they are sometimes considered to be, straighteners for arrow shafts), among which may be noted some unearthed at La Madeleine, in the Dordogne region of France, that bear engravings representing horselike animals, fish, and snakes; and one from Le Placard that is tipped by a stylized animal head (XI, PL. 247). In these implements Magdalenian man created genuine masterpieces of art, intuitively exploiting the natural forms of the materials he found at hand.

Alongside these more elaborate implements existed other simpler ones (PL. 269) such as the awls made of horn, the long bones cut in the shape of a flute mouthpiece (for purposes as yet unexplained), and the fishhooks made from large fishbones, as well as the endless and ever more specialized succession of stone scrapers, polishers, graters, awls, knife blades, and unevenly flaked blades (saws?). The sharp points of these tools served for carving animal figures on the walls of caves or on objects; while small spatulas for spreading thick paints, hollowed bones through which liquid paints were blown (according to a technique documented at Lascaux), and paint mortars — concave stones in which colored minerals were ground — are related to the activities of these early men as painters.

The advent of the Neolithic period signals the first major change in the life of early human groups. New activities then originated that were destined to transform the cultural horizon radically: agriculture, the use of clay, spinning and weaving, and livestock breeding — activities engendering new needs, for which new implements were created by adapting and transforming those already known. The Neolithic period is characterized by its polished stone celts. Adz and ax heads, often helved with horn in the Swiss and Italian lake villages, began to take on the appearance they were to retain for thousands of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

years. Specialized chisels and gouges with their edges sharpened by grinding were produced. Side by side with scrapers and knives of flint, sharper ones came into use that were made of obsidian, the volcanic glass found in the Mediterranean basin in the area centering around the Lipari Islands — evidence of an active maritime commerce already in existence. The hammer or, more accurately, the mallet, with its two striking heads divided by a groove for fastening the straps that secured it to its handle, assumed definition; and annular and spheroid mallets utilized the principle of the centrally perforated tool, which was to be adopted in nearly all utensils of this type.

Pottery called for the use of much more delicate instruments and accounted for an increase in equipment made of bone and horn: gravers and scrapers, punches, spatulas, and small burnishers made up the ensemble of lighter, more manageable tools with which the first pottery products were molded, smoothed, and decorated. Domestic life entailed new activities and thus new implements: the rudimentary needle, with its large eye suited for holding the strips of leather that had made sewing possible, became finer, and its eye was narrowed; along with spinning (which made use of a rudimentary distaff), weaving was born, as is shown by remains of textiles discovered in pile dwellings and by the use (thenceforth customary) of pottery or stone weights for looms. An array of implements already well defined was available to agriculture: the scythe, in its typical curved form, composed of thin sheets of flint mounted in a wooden helve and fastened with resin; the digging stick weighted with a stone; and hoes derived from the forkings of stag antlers. Wooden specimens of all these implements must also have existed but have not survived. Probably based on the same principle as the hoe, the first plow — a forked tree branch — made its appearance, as attested by rock engravings that show it being hauled by oxen.

The discovery and processing of metals gave a revolutionary new impetus to man's slow forward progress. Use of a material which could assume a desired shape and which, even reduced to sheets, offered the same hardness as stone led to the creation of new utensils and to the perfecting of those types which had first found form in stone. Utensils as well as weapons — which were the first implements to benefit from this new discovery — underwent profound transformations. To be sure, mankind was not at a uniform level of civilization in all areas touched by the Mediterranean: indeed, while the first flat-bladed metal axes were being made in Italy, in the East (the area of man's discovery of copper) this implement had already attained definitive form — single-edged, double-edged, or with curved blades.

Stone industry continued without interruption, however, and by this time provided products that, in form and workmanship, could vie with the new metal ones. Blades were increasingly fine and their edges better finished; knives, razor-sharp, had blades, straight or curved, made of obsidian or flint; the scrapers and graters that had originated in the Paleolithic were now crescent-shaped, circular, or elliptical, with extremely delicate retouching that rendered their cutting edges ever sharper. Hand-grasped tranchets continued to be made, and the tombs at Anghelu Ruju, in Sardinia, have yielded parts of rudimentary scissors. There were as many different axes and adzes — large and small, long and short, flat like the metal ones and thick like the oldest stone specimens — as there were pointed implements (gimlets, awls, chisels). The axes, usually single-edged and attached to their handles by means of a central perforation, were sometimes also made with two blades (like an unusual specimen from Monte Olladiri, in Sardinia, that has two blades of different sizes and, at the center, a rectangular perforation). The rhomboid pickax with perpendicular cutting edges — which, together with the mallet and the various types of mallet-hammer, was among the principal implements used by stone quarriers — was thicker. Among the most noteworthy and well-made specimens of hammer may be mentioned one found at Palaikastro that consists of a barrel-shaped nucleus, provided with a round perforation, and two domed striking heads set off from this nucleus by two circular grooves. To preserve the keenness of weapons, sharpeners were used; a noteworthy example (Cagliari, Mus. Archeol.) unearthed at Anghelu Ruju consists of a long piece of stone perforated at each end so that it could be suspended. The sharpener was kept in a bone case decorated, austerely but pleasingly, with engraved circlets. Also made of stone were the molds in which tools, weapons, and other copper objects were cast.

The drill — the instrument that in all probability assured man's mastery of that indispensable element, fire — had certainly already been known in earlier epochs, in the primitive guise of a small stick of dry wood spun at high speed between the hands. Its greatest use and its perfecting undoubtedly began, however, with the advent of the metal age; it was fire that made metal extraction and processing possible. Also closely bound up with the use of metals is the anvil properly so called. Since the Paleolithic, man had tended to use large blocks of stone, fixed or mobile, as working surfaces; but the true function of the anvil as the complement of the hammer was born when the processing of metals began. The first anvils, obviously, were stone blocks, more or less regular, placed near the smelting furnace; the metal to be beaten was placed upon these with the aid of rudimentary U-shaped tongs.

The discovery of the correct blend of copper and tin to produce the new alloy, bronze, brought about the abandonment of obsidian blades, flint burins and points, and copper axes, and a complete series of pointed and cutting instruments of metal appeared: these included chisels, burins, gouges (with an increasingly curved cutting edge), and punches. Born, too, was the auger, a small instrument that man no longer drove home as before by striking it but used by applying the principle of the screw, which was to be developed in so many ways. Aided by the hardness of bronze, saws were perfected (there is evidence for this throughout the Mediterranean basin) in both the single- and the double-handled variety: the former in the guise of a large, ribbed knife with a toothed edge, the latter long-bladed, with a wooden handle at each end. Specimens originating in Thera, Gournia, and Hagia Triada demonstrate the existence of saws with fine close teeth and of others with wide large ones; and there is a curious tool akin to both the hatchet and the saw: its form is that of a broad, thick ax, but the cutting edges — one rectilinear, the other curved — are toothed like saws.

During the Bronze Age winged axes and palstaves developed from the flat and flanged celts and were in turn replaced by socketed axes. There were also hatchets, axes with two perpendicular blades, ax hammers, pickaxes, and long-bladed hoes. Among the smaller implements were files, U-shaped tongs, blunt-ended shears, and the so-called "razors" — small rectangular or crescent-shaped sheets of bronze furnished with a stalk or a ring — of unknown use (VIII, PL. 122). The scythe had by now attained its definitive form as a long, curved blade, with or without a flange along its edge, hafted to a wooden handle; short sickles with socketed handles are also found. Spatulas, spoons, and small scythes further enrich the array of bronze implements. Also worthy of mention are the molds for casting, which became increasingly refined and complex; the portable anvils (like that of Chilivani, in Sardinia); and the first weighing scales, with plates made of sheet bronze and weights mostly either pear-shaped or roughly hemispherical.

Giovanna ALVISI

From these basic types of tools, developed first in stone and then in metal throughout the millenniums of the Paleolithic and Neolithic, stemmed the enormous variety of specialized utensils and tools of the crafts and trades of the ancient civilizations and the medieval and postmedieval world. The continuity of the perfectly functional forms is clear in every age and culture, despite minor modifications to adapt them to varying uses: to cite only a few examples, the Bantu ceremonial ax from southern Tanganyika (II, PL. 129) and the 18th-dynasty Egyptian hatchet from the tomb of Queen Hatshepsut (PL. 271) alike trace their ancestry to the prehistoric and protohistoric ax and adz (PL. 270; V, PLS. 158, 159); the tools and utensils of the Greek foundry shown on an Attic kylix (VI, PL. 56) find counterparts in the Roman smithy (PL. 273), the 14th-century Tubalcain (PL. 278), and the 18th-century foundry (XIII, PL. 457); the tools of the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Viking shipwright (PL. 275) could have been exchanged with those of the shipbuilders on the façade of S. Marco (PL. 277) or those Raphael painted at work on the Ark (II, PL. 291) or those of the men building the boats for William the Conqueror's invasion fleet on the famous Bayeux tapestry (who are shown using large felling axes and long-handled T axes to prepare the timber, while the carpenters work with the short T ax, adz, hammer, and breast auger); the shoemaker of the Altarpiece of St. Mark (VI, PL. 374) might have borrowed his tools from his Greek brother on the amphora in Boston (PL. 272) or the 3d-century Gallo-Roman shoemaker in Reims (PL. 273); and the plane carved on a Marquesas Islands earplug (VI, PL. 53) or the chisel and mallet on the Pöhlde choir stall (PL. 278) could have come out of the cabinetmaker's workshop on the chest made for Gustavus II of Sweden, or Bourdichon's 16th-century carpentry shop (PL. 279), or the workshop of St. Joseph by the Master of Flémalle (VI, PL. 66).

UTENSILS AND TOOLS AS WORKS OF ART. The decorative quality of utensils and tools has basically cultural roots. An implement, by being consecrated to a use that had significance beyond the everyday (e.g., utensils for the ceremonies of hospitality; implements for the royal hunt), might transcend its primary functional use, and this might be indicated by the material, as in the gold ceremonial knife from Peru (I, PL. 215), or by elaborate and precious decoration that made it less suitable for that use or even negated its functionality, as with the Mexican pre-Columbian ax in the form of a temple (IX, PL. 157) or with votive and funerary objects (see DEVOTIONAL OBJECTS AND IMAGES, POPULAR; ESCHATOLOGY). This tendency has an analogy today in the collecting of formerly functional objects whose use has been superseded; it might even be said that their purely decorative character becomes more apparent when they have ceased to be useful.

Even without any loss of functionality, certain categories of utensils and implements were traditionally associated with ceremonial or ritual aspects of agricultural and domestic life that called for fitting commemorative ornamentation. Thus the cult worship of fire and the importance of the family hearth are undoubtedly related to the rich elaboration of fireplace implements (IX, PL. 522; XII, PL. 181); and the association of spinning and weaving with marriage (preparation of the bridal trousseau; furnishing of the home) has influenced the decoration of the implements of these traditional household crafts in every culture — usually on the folk-art level. It is interesting to compare the decoration of distaffs and other weaving and textile implements of, for instance, the Mediterranean region (PL. 283; V, PLS. 339, 344) with that of similar implements of northern Europe (V, PL. 343) and even the distant Orient (I, PL. 497). Among the decorated weaving implements of modern primitive peoples might be mentioned the loom pulleys of the Maori (*turutura*), often artistically elaborated and adorned with heads or human figures with eyes made of shell; the shuttle of the Indonesian *tumpoh*, with its geometric engravings; the distaff of the Iban of Sarawak; and the pulleys of the Guro of Guinea and the Baule of the Ivory Coast, elegantly carved with human heads and animal figures for the most part inspired by the masks of the region. Of interest, too, are the various instruments for weaving discovered in the Inca and pre-Inca tombs, especially the spindles with a painted or carved stick and a delicately incised pottery, bone, or stone whorl. The beaters used in the preparation of tapa (q.v.) may be considered in the same category; among the most attractive are those of the Celebes, usually ornamented with floral motifs or arabesques, although on a Toradja beater coming from the Mapane district of Pebato (Dresden, Mus. f. Völkerkunde) the schematized head of a buffalo has been identified.

In the ancient Orient, the metal tools of Iran were outstanding artistically for their refinement of form and ornamentation, as shown in the famous Luristan bronzes (12th–8th cent. B.C.), in which the primary role of animal art in this mixed civilization of horseman-hunters and sedentary cultivators is already apparent. Horses, rams, and stags, bovines and felines, wild boars, birds, and even, rarely, fish (II, PL. 5) made their appearance in the Luristan bestiary (PL. 270; VIII, PL. 122) and, in varying interpretations and in every medium, were to remain the favorite motifs of Iranian art for more than two millenniums.

Other objects found in the Luristan tombs include the equipment of huntsmen and warriors, which was to continue into the Parthian and Sassanian periods: halberds, swords and daggers without hilt guards but often with decorated pommels, bow braces (also usually decorated), and whetstones with zoomorphic handles. Also important are the horse trappings: the bits are particularly fine, the cheekpieces in which they terminate at the sides being made up of openwork plaques representing twisting or leaping animals. In the Achaemenid period (6th–4th cent. B.C.) the same predominantly zoomorphic motifs continued to be beautifully used in the decoration of such implements as whetstones and on the hilts and scabbards or sheaths of swords and daggers (VIII, PL. 140). Besides the objects themselves, the many representations of hunting scenes in toreutics (XII, PLS. 402, 407), ceramics (VI, PL. 256), textiles, and especially relief sculpture show the decoration of hunting equipment and of horse trappings almost unchanged, from the reliefs of Assyrian Arslan Tash (8th cent. B.C.; I, PL. 516) through the decorations of the royal tombs and of great palaces of Persepolis and Susa (on which may be seen the large, ornamented quivers of the archers; IV, PL. 21) to the Sassanian stucco plaques from Ṭāq-i-Bustān (Philadelphia, Mus. of Art) showing a royal boar hunt. The bow is often ornamented with zigzag lines, and the hafts of the cutting weapons (lance or spear, sword, dagger or dirk) show linear decoration or raised knobs to ensure a good grip. The long sword sheaths and large quivers are richly decorated with zigzag lines, crossed bands, and superimposed small squares, lozenges, and other motifs, giving an effect of incrustation. The trappings of the mounts are no less rich: the details of the trappings shown on reliefs and on silver rhytons include nosebands and cheek straps with decoration of small bars and dots or of beads joining plaques with rosettes or incised lines; wide collar, bellyband, and crupper from which hang cutwork ornaments or large tassels; and saddlecloths covered with linear ornament within a frame of "pearls." The horse's head was often adorned with plumes or with disks set on rods.

Utensils and tools have, in general, not given rise to a specific and characteristic type of decoration but have rapidly assimilated and adapted styles and motifs elaborated in other spheres. The types of decoration commonly used may be classified in three broad categories related to the shape and the function of the implement: decoration, often figural, adapted to broad plane surfaces; geometric or stylized decoration that expresses the dynamics of the implement without constituting an interruption in its form; and what may be termed "vital" decoration, conferring a sort of zoomorphic or even human quality on the implement as an enhancement or extension of its function.

The first type of decoration, even in the ancient cultures, often produced compositions of great elegance and superb artistry (IX, PL. 497). Decoration was especially applied to the handles of axes, knives (PL. 284; I, PL. 215; VII, PL. 324), and hammers; while not only the handles of planes but also the sides of the chest in which the blade was kept lent themselves well to decoration (a famous example is the plane of Adolphus Frederick of Sweden, PL. 281). The handles of knives, daggers, and swords are particularly adaptable to a type of decoration that emphasizes the functional line, as in short-bladed artisan knives attached to a long, slender handle ending in a carved animal head that both complements the basic form and serves to guard the hand from the blade when pressure is exerted; the hilt of a sword served the same double purpose. Household implements such as mirrors (IV, PL. 263; VII, PL. 333) and chests and recipients of all sorts (XII, PL. 181) were also favorite objects for elaborate decoration of this type. The betel-lime spatulas used on many of the islands of the South Seas also deserve special mention in this category; the handles, beautifully carved in relief or in the round (or sometimes combining both types of carving) are small works of art, employing more or less stylized human and animal figures as well as curvilinear ornament (PL. 284; IX, PL. 456).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Perhaps largely because the early evolution of utensils and tools corresponds chronologically to the diffusion of geometric styles, the geometric form of decoration accentuating visually the movement of the tool in use is especially frequent and elaborate. These geometric motifs, usually placed a short distance from the edge of the tool and paralleling it, may frame figural decoration of the first type or may give rise to other geometric ornament. This type of decoration is especially frequent in primitive cultures and in folk art (q.v.), where lines, circles, rhombuses, dentils, and the like fill small surfaces without interrupting the line of the decorated implement (PL. 269; II, PL. 129; V, PLS. 339, 343). Stylized decorations derived from animal and plant forms, too, are found; among the Alpine peoples both utensils and household goods may be covered with densely interwoven forms of both sorts.

The third form of decoration has no doubt grown from the attribution of a magical, inherent force to certain categories of utensils and tools and the desire to characterize this power in their very forms. Essentially it consists in the use of a sort of visual metaphor suggesting the postures and forms of animals: the zigzag serpentine knife; supporting elements in the shape of feet or paws; movable elements resembling wings or fins; and the like. Particularly interesting examples are found in the fishing equipment of the modern primitive cultures of the South Pacific: thus the fishhooks of the Sepik region of New Guinea assume anthropomorphous form, the Papuans of Waropen often decorate their fishing rods with figures of ancestors and use wooden floats in the form of fishes or crocodiles, and the Solomon Islanders attach a series of 12 different wooden floats to the hook, decorated with birds, fish, or mythical figures. Among the Eskimos of the Kobuk River in Alaska and those of Ingalik and Tanana, the fishhook, of caribou bone, is carved in ichthyomorphic form; and the Chugach Eskimos and the Northwest Coast Indians (especially the Tlingit) make richly carved wooden fishhooks with superimposed animal and human figures. Still other examples are the Diaguita bronze axes from northwestern Argentina with the blade in the form of the muzzle of a beast-demon and often decorated with masklike faces.

REPRESENTATIONS OF UTENSILS AND TOOLS IN ART. Implements and the domestic or artisan environment in which they are used have, in every period and culture and in every medium, been frequent, if modest, subjects of representation, whether in genre scenes (see GENRE AND SECULAR SUBJECTS), as emblems (see EMBLEMS AND INSIGNIA) or symbols (see SYMBOLISM AND ALLEGORY), or in other forms. One of the earliest such appearances of the tool is in Egyptian hieroglyphics (III, PL. 2; note especially the hoe, the cleaver, and the spade), where implements assume a direct and explicit semantic significance. Egyptian tomb paintings, models, and reliefs present innumerable scenes of craftsmen and their tools (PL. 272; IV, PLS. 384, 460): particularly important in this respect are the tomb of Ti at Saqqara (ca. 2500 B.C.), where goldworkers are shown blowing their fire with long blowpipes and carpenters busily saw wood and build a ship; and the tomb of Rekhmira at Thebes (ca. 1440 B.C.), where leather dressers and sandal makers, stonecutters and bronze casters, carpenters and wheelwrights are to be seen at work. Representations of Anubis weighing the souls of the dead before Maat in judgment provide beautiful examples of scales (IV, PL. 464); and there are numerous lively hunting and fishing scenes (IV, PL. 366; VI, PL. 54) and harvest scenes (IV, PL. 384) in which the net, the spear, and the agricultural implements form striking design elements.

Apart from these Egyptian representations and the Iranian hunting scenes already mentioned, tools and utensils usually appeared in the art of the ancient Orient only incidentally rather than as actual subject matter. Some reliefs of the Han dynasty (3d cent. B.C.–2d cent. of our era), however, constitute an interesting exception — for example, those of T'eng-hsien (Shantung province) representing iron founders at work.

Such representations abound in Greek and Roman art. Greek vase painting offers the scales of the "Arkesilas Kylix" (I, PL. 338), the mining scene on a Corinthian pinax and the bronze foundry of an Attic kylix (VI, PL. 56), and the shoemaker on an amphora in Boston (PL. 272); and those masterworks of the goldsmith's art, the Cretan-Mycenaean cups from Vaphio (1600–1500 B.C.; Athens, Nat. Mus.), show marvelously vivid scenes of the use of nets to capture large animals. The work of the potter is itself the subject of some Corinthian plaques in Paris (Louvre; XIII, PL. 447). Etruscan tools and utensils in stucco are important decorative motifs of the Tomb of the Reliefs in Cerveteri (XIII, PL. 268), and the Etruscan plowman from Arezzo (PL. 272) still has a moving immediacy. The equipment pictured in the Tomb of Hunting and Fishing at Tarquinia (VI, PL. 55) finds counterparts in late Roman works on the same theme such as the fishing and hunting scenes in the mosaics of Villa Casale near Piazza Armerina in Sicily (Hall of the Amorini-Fishermen, Corridor of the Great Hunt, Corridor of the Little Hunt) and the hunting scenes from Hippo Regius (VI, PL. 61). Among scenes of the crafts and trades may be mentioned the well-known relief of the bakery on the tomb of the baker M. Vergilius Eurysaces in Rome (VIII, PL. 229); and the paintings of Pompeii offer a wealth of such scenes: the dyers and other craftsmen painted in the shop of a cloth merchant (VI, PL. 61), the cupid-craftsmen on the frieze above the dado of the triclinium in the House of the Vettii (VI, PL. 60), the building scenes with Neptune and Apollo in the House of Siricus. An interesting relief in the Vatican Museums (Gall. Lapidaria, Inv. No. 9277) from the Flavian tomb of L. Cornelius Atimetus (A.D. 80–90) depicts, with great realism, an ironmonger's shop. Standing before a perplexed customer, the shopman seems to be enumerating the virtues of his wares, arranged and hung on the walls in an orderly array: sickles, billhooks, tranchets, razors, knives, and files of every kind — butchers, cooks, hunters, woodcarvers, and shoemakers might all find in the shop something to suit them (cf. also PL. 273).

In the East and Near East, it was only with the spread of Islam that artisan's tools and agricultural implements entered into art, in genre scenes or as decorative motifs, appearing for the first time in Seljuk miniatures of the first half of the 13th century. A *Shāh-nāma* of 1340, perhaps from Tabriz, illustrates the legend of Alexander the Great building an iron barrier against Gog and Magog, showing utensils of smiths and masons: long tongs, pliers, hammers, adzes, trowels, and lime buckets. The scene of the building of the citadel of Khvarnaq, from the *Khamsa* of Nizāmi, was a frequent occasion for illustrations of masons, carpenters, and others at work by Persian artists in the Middle Ages, including Bihzad (II, PL. 300). Various artisan tools are also shown in a miniature of a 1469 copy of the *Annals* of al-Ṭabarī, from Herat (Dublin, Chester Beatty Lib., P. 144), showing a tailor cutting material with a large scissors; two carpenters nailing boards, within reach of saw, files, awls, pincers, pliers, and hammer; smiths with heavy hammers and anvils; a man at a loom weaving a rug; and a woman spinning.

The traditional hunting scenes continued in favor in the Persian miniatures: rich and lively scenes adorned many copies of Firdausi's *Shāh-nāma* in the Middle Ages (IX, PL. 8; X, PL. 88) and other manuscripts, in which, though the horses might be less gaily caparisoned than those of ancient Persian art, the huntsmen's accouterments were much the same. This tradition spread to Islamic India and reached a peak in the Moghul miniatures (see MOGHUL SCHOOL; X, PL. 117), from which it was to find some continuation even into modern times in the miniatures of the Rajput school (q.v.; XI, PL. 413).

In the European Middle Ages, representations of the Holy Family and of saints engaged in their occupations or in the crafts and trades for which they served as patrons led artists to make frequent use of workshop scenes and of tools as attributes in the iconography of various saints (q.v.), with the carpenter's shop and tools, for St. Joseph, the most frequent. The Virgin was shown with the implements of the household crafts (XIII, PL. 177), and the vivid life of the towns continued to find expression in shop scenes (VI, PL. 63). Favorite themes in every medium were the building of the Tower of Babel and the building of the Ark. On a secular level, though still in a broadly religious framework, were the innumerable genre scenes of the Labors of the Months: in illuminated Books of Hours and other devotional books and calendars (II, PLS. 24,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

25; IX, PL. 8), in the reliefs of Gothic churches and cathedrals, in frescoes (IV, PLS. 1, 5), on the façades and the great bronze doors of churches (XII, PL. 256).

In postmedieval Europe, the tools and utensils of crafts and trades that had been adopted by the guilds as pleasing and readily identifiable emblems (PL. 285) were seized upon by the men of the Renaissance as elements of characterization (III, PL. 203; VII, PL. 306). The nobility of the crafts in the historicosocial context that had already given them importance in monumental portrayals of the Virtues and the Arts (see SYMBOLISM AND ALLEGORY) — such as those on the Campanile of the Cathedral of Florence (PL. 278; I, PLS. 231, 232) — was carried over into secular genre portrayals, where the crafts and their tools gained new liveliness and human interest. In more modern times representations of such implements began sometimes to carry an esoteric or occult didactic and allusive meaning, as among the Freemasons and similar groups (XIII, PL. 353); and in the 20th century their emblematic and symbolical significance again came to the fore in paintings and decorations exalting the ideology of labor (e.g., the hammer and sickle).

* *

The two preceding sections incorporate material contributed by the following: Bianca Maria Alfieri (Islamic Iran); Giovanna Alvisi (Greece and Rome); Olga Ammann (primitive cultures); Etta Becker-Donner (pre-Columbian American cultures; primitive cultures); W. L. Goodman (medieval and modern Europe); Madeleine Hallade (pre-Islamic Iran; India); and Lionello Lanciotti (China).

BIBLIOG. *General*: D. Diderot and J. d'Alembert, Encyclopédie ou dictionnaire raisonné des sciences, des arts, et des métiers . . . , 5 vols., Paris, 1751–77; J. Labarte, Histoire des arts industriels, 2d ed., Paris, 1872–75; C. Laboulaye, Dictionnaire des arts et manufactures, Paris, 1891; J. G. Frazer, Hausfleiss und Hausindustrie, Berlin, 1894; J. Grand-Carteret, L'enseigne, son histoire, sa philosophie, ses particularités, Grenoble, 1902; C. Frémont, Origine et évolution des outils, Paris, 1913; E. Magne, ed., L'art appliqué aux métiers, 8 vols., Paris, 1913–28; J. S. Gardner, Ironwork, 2 vols., London, 1922–27; D. K. Macdonald, Fibres, Spindles and Spinning Wheels, Toronto, 1944; V. G. Childe, Magic, Craftsmanship, and Science, Liverpool, 1950; A. Hauser, The Social History of Art, 2 vols., New York, London, 1951; H. Clouzot, ed., Le fer forgé, Paris, 1953; C. Singer, E. J. Holmyard, and A. R. Hall, eds., A History of Technology, 5 vols., Oxford, 1954–59; R. J. Forbes, Studies in Ancient Technology, 4 vols., Leiden, 1955–56; L. Aitchison, A History of Metals, 2 vols., London, 1960; E. Lassen, Knives, Fork, and Spoons, Copenhagen, 1960; J. A. Kouwenhoven, Made in America, rev. ed., Garden City, 1962.

Prehistory and protohistory: E. Pais, La Sardegna prima del dominio romano, Rome, 1881; P. Vonga, Le néolithique lacustre ancien, Neuchâtel, 1934; P. Laviosa Zambotti, Le più antiche culture agricole europee, Milan, 1943; M. Pallottino, La Sardegna nuragica, Rome, 1950; J. D. G. Clark, Prehistoric Europe: The Economic Basis, London, 1952; C. Zervos, La civilisation de la Sardaigne du début de l'Enéolithique à la fin de la période nouragique, Paris, 1954; P. Graziosi, L'arte dell'antica età della pietra, Florence, 1956 (Eng. trans., Paleolithic Art, New York, London, 1960); J. Deshayes, Les outils de bronze, 2 vols., Paris, 1960; H. G. Bandi et al., L'âge de la pierre, Paris, 1960 (Eng. trans., The Art of the Stone Age, New York, London, 1961).

The ancient world: H. Frankfort, The Art and Architecture of the Ancient Orient, Harmondsworth, 1954. (*a*) *Egypt*: M. F. Petrie, The Arts and Crafts of Ancient Egypt, London, 1920; P. Montet, Les scènes de la vie privée dans les tombeaux égyptiens de l'ancien empire, Strasbourg, 1925; N. de G. Davies, Paintings from the Tomb of Rekh-mi-Rē at Thebes, New York, 1935; E. Drioton and J. P. Lauer, Sakkarah: The Monuments of Zoser, Cairo, 1939; P. Montet, Le tombeau de Ti, Cairo, 1939; N. de G. Davies, The Tomb of Rekh-mi-Rē at Thebes, New York, 1943; A. Lucas, Ancient Egyptian Materials and Industries, 3d ed., London, 1948; W. B. Emery, Excavations at Saqqara, 2 vols., Cairo, 1949–54; R. J. Forbes, Professions and Crafts in Ancient Egypt, Arch. internat. d'h. des sciences, III, 1950, pp. 599–618, E. Winlock, Models of Daily Life in Ancient Egypt (Met. Mus. of Art, Egyptian Expedition, Pub. XVII), Cambridge, Mass., 1954; P. Montet, Everyday Life in Egypt, trans. A. R. Maxwell-Hyslop and M. S. Drouwer, London, 1958; W. S. Smith, The Art and Architecture of Ancient Egypt, Harmondsworth, 1958. (*b*) *Iran*: M. Dieulefoy, L'art antique de la Perse; 5 vols., Paris, 1884–89; R. Dussaud, Haches à douille du type asiatique, Syria, XI, 1930, pp. 245–71; A. Godard, Les bronzes du Luristan, Paris, Brussels, 1931; R. Dussaud, Ceinture en bronze du Louristan avec scène de chasse, Syria, XV, 1934, pp. 187–99; C. Hopkins, The Murals with Banquet and Hunting Scenes: The Excavations at Doura-Europus, New Haven, 1936; SPA; R. Maxwell-Hyslop, Western Asiatic Shaft-hole Axes, Iraq, XI, 1949, pp. 90–130; E. F. Schmidt, Persepolis, Chicago, 1953; J. Deshayes, Marteaux de bronze iraniens, Syria, XXXV, 1958, pp. 284–93; E. Porada, Alt-Iran, Baden-Baden, 1962 (Eng. trans., The Art of Ancient Iran: Pre-Islamic Cultures, New York, 1965); A. Godard, The Art of Iran, trans. M. Heron, New York, 1965. (*c*) *Greece and Rome*: G. Glotz, Le travail dans la Grèce ancienne, Paris, 1920; A. J. Evans, The Palace of Minos at Knossos, 4 vols., London, 1921–36; R. Lantier, La mosaïque de la chasse au sanglier de Carthage, BAP, 1923, p. 134 ff.; J. Carcopino, La vie quotidienne à Rome à l'époque de l'Empire, Paris, 1939; R. Minervini, La chirurgia ai tempi dell'Impero Romano, Rome, 1940; R. Binaghi, La metallurgia ai tempi dell'Impero Romano, Rome, 1946; P. Quoniam, Une mosaïque à scènes de chasse . . . à Henchir-Tounga, Karthago, II, 1951, p. 109 ff.; E. Marec, Deux mosaïques d'Hippone, Libyca, I, 1953, p. 95 ff.; E. Marec, Hippone la Royale, 2d ed., Algiers, 1954; B. Pace, I mosaici di Piazza Armerina, Rome, 1955; M. Pallottino and H. Jucker, Art of the Etruscans, New York, London, 1955; U. E. Paoli, Vita romana, 2d ed., Florence, 1955; G. V. Gentili, La villa imperiale di Piazza Armerina, Rome, 1956 (Eng. trans., Rome, 1956); H. G. Bucholz, Zum Herkunft der kretischen Doppelaxt, Munich, 1959; G. C. Picard, La civilisation de l'Afrique romaine, Paris, 1959; L. Grassi, Die Theorie des Schönen in der Antike, Cologne, 1962; J. Heurgon, La vie quotidienne chez les Etrusques, Paris, 1962.

Islam: E. Kühnel and H. Goetz, Indian Book Painting from Jahāngīr's Album, Berlin, London, 1925; I. Stchoukine, La peinture iranienne sous les derniers Abbasides et les Il-khans, Bruges, 1936; B. Gray, Rajput Painting, 1948; D. Barrett, Persian Painting of the 14th Century, London, 1952; D. S. Rice, The Seasons and the Labors of the Months in Islamic Art, Ars Orientalis, I, 1954, pp. 1–39; I. Stchoukine, Les peintures des manuscrits Timurides, Paris, 1954; R. Pinder-Wilson, Persian Painting in the 15th Century, London, 1958; R. Reiff, ed., Indian Miniatures: The Rajput, Painters, Rutland, Vt., Tokyo, 1959; L. Hájek, Indian Miniatures of the Moghul School, London, 1960; B. Gray, Persian Painting, Lausanne, 1961 (with bibliog.); R. Ettinghausen, Arab Painting, Lausanne, 1962 (with bibliog.).

Medieval and modern Europe: G. Poggi, ed., Il Duomo di Firenze, Berlin, 1909; J. T. Perry, Dinanderie: A History and Description of Medieval Art Work in Copper, Brass and Bronze, New York, London, 1910; P. D'Ancona, L'uomo e le sue opere nelle figurazione italiane del Medioevo, Florence, 1923; F. Saxl and E. Panofsky, Dürers "Melencolia I," Leipzig, Berlin, 1923; H. T. Bossert, L'art populaire en Europe, Paris, 1927; J. Vydra, Art populaire, Paris, 1931; J. C. Webster, The Labors of the Months in Antique and Medieval Art to the End of the 12th Century, Chicago, Princeton, 1938; E. Droulers, Dictionnaire des attributs, allégories, emblèmes, et symbols, Turnhout, 1948; H. Leisinger, Romanesque Bronzes: Church Portals in Mediaeval Europe, New York, London, 1956; P. Jahier, Arte alpina, Milan, 1958; L. M. J. Delaissé, ed., Miniatures médiévales, Brussels, 1959; O. Demus, The Church of San Marco in Venice, Washington, 1960; O. Höver, Wrought Iron, trans. A. C. Weaver, 2d ed., New York, 1962.

Pre-Columbian American cultures: W. C. Bennett, Ancient Arts of the Andes, New York, 1954; J. Soustelle, La vie quotidienne des Aztèques à la veille de la conquête espagnol, Paris, 1955 (Eng. trans., P. O'Brian, New York, 1961); J. A. Mason, The Ancient Civilizations of Peru, Harmondsworth, Baltimore, 1957; R. d'Harnoncourt, Textiles of Ancient Peru and Their Techniques, Seattle, 1962; G. Kubler, The Art and Architecture of Ancient America, Harmondsworth, 1962.

Primitive cultures: J. Edge-Partington, An Album of the Weapons, Tools, Ornaments, and Articles of Dress of the Natives of the Pacific Islands, 3 vols., Manchester, 1890–98; G. Thilenius, Ergebnisse der deutsche Südsee-Expedition, 1908–1910, 12 vols., Hamburg, 1914–38; R. H. Greiner, Polynesian Decorative Designs (Bernice P. Bishop Mus. B., nos. 7–9), Honolulu, 1923; W. G. Ivens, The Melanesians of the Southeast Solomon Islands, London, 1927; H. Beasley, Pacific Islands Records: Fishhooks, London, 1928; T. Matthiassen, Material Culture of the Iglulik Eskimos, Copenhagen, 1928; E. Best, Fishing Methods and Devices of the Maori, Dominion Mus. B., XII, 1929; H. C. Raven, Bark Cloth Making in the Central Celebes, Nat. H., J. of the Am. Mus. of Nat. H., XXXII, 4, July–Aug. 1932; G. A. Reichard, Melanesian Design: A Study of Style in Wood and Tortoise Shell Carving, 2 vols., New York, 1932–33; F. G. Fairchild, Maori Fishhooks from Manakau Heads, Auckland, Polynesian Soc. B., XLII, 1933; P. H. Buck, Mangaian Society (Bernice P. Bishop Mus. B., nos. 118–122), Honolulu, 1934; R. Firth, Art and Life in New Guinea, London, 1936; L. E. Start, Iban or Sea Dayak Fabrics and Their Patterns, Cambridge, 1936; G. Lindblom, Spears and Staffs with Two or More Points in Africa, Stockholm, 1937; J. E. Jones, A Study of the Thlingets of Alaska, New York, London, 1941; W. Kaudern, Art in Central Celebes, Göteborg, 1944; R. Linton, P. S. Wingert, and R. d'Harnoncourt, Arts of the South Seas, New York, 1946; HSAI; M. Griaule, Arts de l'Afrique noire, Paris, 1947; R. T. Davis, Native Arts of the Pacific Northwest, Stanford, Calif., London, 1949; R. B. Inverarity, Art of the Northwest Coast Indians, Berkeley, 1950; K. Birket-Smith, The Chugach Eskimo, Copenhagen, 1953; P. S. Wingert, Art of the South Pacific Islands, New York, London, 1953; G. J. Held, The Papuans of Waropen, The Hague, 1957; C. G. Widstrand, African Axes, S. Ethn. Upsaliense, XV, 1958; A. Buhler, T. Barrow, and C. P. Mountford, The Art of the South Sea Islands, New York, 1962 (with bibliog.).

* *

Illustrations: PLS. 269–285.

UTRILLO, MAURICE. French painter and graphic artist (b. Paris, Dec. 25, 1883; d. Dax, in Landes, Nov. 5, 1955). Utrillo's mother, Suzanne Valadon, was a painter and the celebrated model of Degas, Renoir, and Toulouse-Lautrec. Utrillo never knew who his father was; he took his name from a family friend, Miguel Utrillo y Molins, a Catalan architect and art critic. Depressed by his failure at school and by ir-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

regular employment, Utrillo became an alcoholic by the time he was eighteen and was constantly in and out of sanatoriums thereafter. He began to paint as a therapeutic diversion but by 1903 was painting full time. Utrillo exhibited for the first time in the 1909 Salon d'Automne and had his first one-man show in 1912. Under the care of his mother from 1924 and, later, of his wife, he produced prolifically; as late as 1950 he was represented in the Venice Biennale. His last important commission was to design the *décor* for Gustave Charpentier's *Louise* for the Opéra-Comique.

Utrillo's output can be divided roughly into three periods: his impressionist phase, when the influence of Pissarro and Sisley was uppermost; his "white period," from 1908 to 1914, generally considered his finest; and his "late period," after 1914, when he used bright, often shrill color, when his brushwork was less controlled, and when he included larger and more numerous figures.

Although Utrillo was self-taught, his art has an authority and a sophistication not associated with primitives. He painted largely from memory, using common picture postcards as guides, and employed a ruler and T square to lay out a composition. His best work catches the melancholy of the sunless, half-deserted streets of Montmartre with deep perspectives and subtle harmonies of warm grays, olive greens, buffs, and off-whites, which frequently appear luminous against an opaque, leaden sky. Utrillo tended to emphasize and define contour with a heavy line, as in the *Quai d'Anjou* (V, PL. 138). His style is personal and characteristic, with some of the near-abstract quality of a Cézanne.

SELECTED WORKS. *Provincial Church*, New York, Mus. of Mod. Art. – *Church of St-Hilaire*, London, Tate Gall. – *Rooftops of Montmagny*, 1906–07, Paris, Mus. Nat. d'Art Mod. – *Garden at Montmagny*, ca. 1908, Paris, Mus. Nat. d'Art Mod. – *Church at Montmagny*, ca. 1908, Denver, Art Mus. – *Impasse Cottin*, ca. 1910, Paris, Mus. Nat. d'Art Mod. – *Basilica of St-Denis*, ca. 1910, Zurich, Kunsthaus. – *Abbey of St-Denis*, 1910, Washington, Phillips Coll. – *Street in Montmartre*, 1910–11, Toledo, Ohio, Mus. of Art. – *La Porte St-Martin*, ca. 1911, London, Tate Gall. – *Place du Tertre*, ca. 1911–12, London, Tate Gall. – *Rue de Banlieue*, 1911–12, Pasadena, Calif., Art Mus. – *Château*, 1912, Berlin, Schloss Charlottenburg. – *Rue Norvins*, 1912, Zurich, Kunsthaus. – *The Old Château*, 1916, Cologne, Wallraf-Richartz Mus. – *House of Berlioz*, ca. 1917, Toronto, Art Gall. – *The Petit Palais*, 1922, San Francisco, Mus. of Art. – *Montmartre*, 1938, Detroit, Inst. of Arts. – *Montmartre*, 1948, St. Louis, Mo., City Art Mus.

BIBLIOG. A. Tabarant, Maurice Utrillo, Paris, 1926; A. Basler, Maurice Utrillo, Paris, 1931; F. Jourdain, Maurice Utrillo, Paris, 1948; A. Werner, Utrillo, Arts, XXX, no. 3, 1955; W. George, Utrillo, Milan, 1958 (Eng. ed., 1960); P. Pétridès, L'Œuvre complet de Maurice Utrillo, I, 1959, II, 1962 (in course of publication); Museum of Art, Carnegie Institute, Exhibition of Paintings, Maurice Utrillo, Pittsburgh, 1963 (cat.).

Robert F. REIFF

VANBRUGH, SIR JOHN. English architect (b. London, 1664; d. London, 1726). The son of a rich sugar baker and grandson of a Protestant refugee from Ghent, Vanbrugh had some military experience in youth and underwent 18 months of imprisonment in France on suspicion of being a spy after being arrested at Calais in 1690. In 1696 he became a captain of marines, serving until his regiment was disbanded in 1698. By then he had made his name as a playwright for the London stage, his two most successful comedies, *The Relapse* and *The Provok'd Wife*, having been produced in 1696 and 1697 respectively. He was the author of ten plays in all.

Vanbrugh's architectural career opened in 1699 with the design of Castle Howard, Yorkshire, for the Earl of Carlisle. However much assistance he may have received in matters of detail and execution from Nicholas Hawksmoor, this was an astonishing performance for one who apparently had turned to architecture, as Swift put it, "without thought or lecture" (Colvin, 1954). In 1702 Carlisle secured Vanbrugh's appointment as Comptroller of the Royal Works. This post he held, with an interruption due to political events in 1713–15, until his death. In 1715 he was appointed Surveyor of Gardens and Waters, and in 1716 Surveyor to the Royal Hospital, Greenwich (of whose board of directors he had been a member since 1703), succeeding Christopher Wren. He was knighted by George II in 1714 for his visit to Hanover in 1706, when as Clarenceux King-of-Arms he conferred the Order of the Garter upon the future King.

Vanbrugh's greatest work was Blenheim Palace (VI, PL. 436), in Oxfordshire, begun in 1705 as a monument to the Duke of Marlborough's victories over Louis XIV. His other works included his own house in Whitehall, London (ca. 1700; destroyed); the King William Block at the Royal Hospital, Greenwich, London (ca. 1703); the Italian Opera House (Queen's Theatre), Haymarket, London (1705; destroyed); the remodeling of Kimbolton Castle, Huntingdonshire (1707–09); King's Weston, Gloucestershire (1711–14); Cholmondeley Hall, Cheshire (ca. 1713–15; rebuilt 1804); Claremont House, Surrey (1715–20; destroyed); Eastbury Park, Dorset (1718 onward; mostly destroyed); Vanbrugh Castle, Greenwich (ca. 1717); Seaton Delaval, Northumberland (1720–28); and the north front of Grimsthorpe Castle, Lincolnshire (1722–24).

Vanbrugh shared with Nicholas Hawksmoor and Thomas Archer the leadership of the English baroque school of the first quarter of the 18th century. His style, which has been characterized as "heroic baroque," owed almost nothing to the Italian baroque, something to France, and a great deal to his personal feeling for effects of mass, silhouette, and movement. Many of his works have what he himself called "something of a castle air"; in several — notably Vanbrugh Castle — the medievalism is explicit.

BIBLIOG. G. F. Webb, ed., The Complete Works of Sir John Vanbrugh, 4 vols., London, 1927–28, IV, The Letters; L. Whistler, Sir John Vanbrugh, London, 1938; H. M. Colvin, A Biographical Dictionary of English Architects 1660–1840, London, 1954; J. Summerson, Architecture in Britain 1530–1830, London, 1954, chap. 17; L. Whistler, The Imagination of Vanbrugh and His Fellow Artists, London, 1954.

Marcus WHIFFEN

VAN DYCK. See DYCK, ANTON VAN.

VAN EYCK. See EYCK, HUBERT and JAN VAN.

VAN GOGH, VINCENT. The painter, the oldest son of a Protestant minister, was born in Groot Zundert, in the Dutch province of North Brabant, on Mar. 30, 1853. In 1869, after he had finished his studies at a boarding school in Zevenbergen, he found employment in the Hague branch of the art dealer Goupil. His brother Theo, with whom he maintained a regular correspondence that can be characterized as a kind of continuous examination of the artist's conscience, joined the Brussels branch of the Goupil firm in 1873, the same year that Vincent was transferred to the firm's London branch, where he proved himself an exemplary employee. In London he fell in love with his landlady's daughter, Ursula Loyer, to whom he proposed and was mockingly rejected. The values of his Protestant bourgeois background shaken for the first time, he sought consolation in the Bible. His parents perceived his deep melancholy when he vacationed in Holland, and his employer subsequently sent him to Paris to recover his mental balance; but he suddenly returned to London in order to see Ursula Loyer once more.

In 1875 Goupil transferred him to Paris, where he visited the museums and attended exhibitions, while continuing to read the Bible in his free time. Meanwhile, he neglected his employment, proved impatient and irritable with clients, and quarreled with his superiors. Consequently he was dismissed, and he returned to his parents. In the spring of 1876 he accepted a post as a teacher of languages at a boarding school in Ramsgate, England. There and at Isleworth, the town to which the school was subsequently moved, he saw clearly the dismal poverty of the working people. This revelation of social misery plus his reading of the Bible and his mystical bent caused a reorientation

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

in his attitude toward society. That summer he entered the service of a Methodist pastor and was entrusted with the duty of preaching in a community of poor working people. Though he exalted poverty above joy in his sermons, he lacked eloquence and consequently suffered another defeat. Discouraged, he once more returned to his family.

At the beginning of 1877 he accepted a position in a bookstore in Dordrecht, but he was haunted by his religious calling. Obsessed by the example of his father, he decided to prepare himself for a theological career and left for Amsterdam to take the Greek and Latin courses required for admission to the theology department. This effort exceeded his piety, and disillusioned by the differences he felt between the teachings of the Bible and the official practice of Christianity, he had to give up. He did not renounce his vocation, however, but with his father's help and with the goal of preaching to the poor mineworkers he attended the school of practical evangelizing in Brussels. At the end of 1878 he left for the Borinage district, where he settled in the village of Pâturages, near Mons. There he taught the Holy Scriptures, cared for the sick, and instructed the children. At the beginning of 1879 he was appointed to preach at Wasmes. His zeal, further kindled, led him to complete solidarity with the miners, so that he shared what he owned with his fellows, took their side in strikes, and tended those who were stricken by typhoid fever. But his devotion to the miners' cause scandalized his church superiors, and his mission was discontinued.

His first drawings seem to date from this period. Two of them were sold to a pastor in Brussels, who sent Van Gogh on a mission to Cuesmes in the Borinage district. He stayed there through the winter of 1879–80, living in the most abject poverty and prey to gnawing moral torments since he despaired of his religious vocation. His correspondence with his brother halted for months while Vincent wandered through the Borinage and ventured on foot as far as Courrières (Pas-de-Calais), the residence of Jules Adolphe Breton, a painter he admired and would have liked to visit. But lacking courage and discouraged by the splendor of Breton's studio, he turned back. This unfulfilled visit to the painter Breton might be the first sign of a reorientation of his course toward the vocation of painting, though his aims remained obstinately the same: to share with his neighbors and to communicate to his fellows his passion, his pity, and his need for truth and consolation. In the fall of 1880, after these months of anguish and solitude, Vincent left for Brussels, determined to embark on a career of painting and eager to renew his ties with painting and painters. He accepted the advice of the Dutch painter Willem Roelofs (1822–97) and became a close friend of the painter Alexander (Anthon) Ridder van Rappard, with whom he corresponded for the next five years. In Brussels he took lessons in anatomy and perspective. It seems characteristic that among his drawings of this period there are copies of works by Jean François Millet (q.v.), the painter of laborers and the poor (e.g., *The Sower*, Amsterdam, Stedelijk Mus.).

In the spring of 1881 he returned to the home of his parents, who now lived in Etten, and started to work with enthusiasm. But during the year he suffered a new disappointment in love when he was rejected by his cousin Kee Stricker. As a result, he left Etten and moved to The Hague, where he sketched farm laborers and peasants in a style that aspired to expressiveness but still revealed a lack of animation and movement. There he also received advice from his uncle, the painter Anton Mauve, but he was soon irritated by this uninspired and routine teaching. His dispute with Mauve was aggravated by the fact that the latter reproached him for having taken in a pregnant prostitute known as Sien. During 1882 he lived with Sien and her child in his studio at Schenkweg 138, leading the life of a workingman and feeling proud of this lowering of his social position, which alienated him from his friends and family. He spent a month in the hospital at the same time as the painter George Hendrik Breitner (1857–1923), who accompanied him on his tours through the city in search of subjects among the common people. During this productive period he experimented with various techniques, tried lithography as a means to the people, executed charcoal and pencil drawings (e.g., *Sad Old Man, Head of a Woman with White Cap, State Lottery*; all, Amsterdam, Stedelijk Mus.) as well as water colors, and painted his first landscape (e.g., *Scheveningen Beach*, Amsterdam, Stedelijk Mus.). He also read a great deal (Emile Zola, Jules Michelet, Victor Hugo, and others) and acquired a collection of works by popular English engravers. This episode came to an end when his brother Theo convinced him that his stubborn endeavors to reform Sien morally were destined to failure.

Van Gogh left The Hague and took refuge in the lonely, picturesque province of Drenthe, in northern Holland, where he was enchanted by the vast horizon and the somber colors. Examples of his work there are the paintings *Huts* and *Two Women Working on the Land* (both, Amsterdam, Stedelijk Mus.). After three months he left Drenthe and returned to his family in Nuenen, a small village northeast of Eindhoven, where his father had been appointed pastor. He adapted himself to family life, devotedly caring for his mother, who had broken a leg, and he continued his reading. Difficulties presented themselves as the result of a love affair with a neighbor, Margot Begemann, and tension with the villagers who had been forbidden to pose for him by the parish priest. Nevertheless, it was at Nuenen that Van Gogh took the decisive steps in his formation as a painter: he painted and drew the peasants (*Head of a Peasant*, Brussels, Mus. Royaux des B.A.; peasant heads, Amsterdam Stedelijk Mus.), made studies of the weavers and their workrooms (*The Weaver*, The Hague, H. P. Bremmer Coll.), and painted the cemetery, the church (*The Garden of the Parish Church*, Kinderdijk, The Netherlands, M. L. C. Smit Coll.), and the thatched huts. His efforts as a painter of peasants were crowned by his first masterpiece, *The Potato Eaters* (PL. 286), for which he made two sketches (Amsterdam, Stedelijk Mus., on loan from the V. W. van Gogh Coll.; Otterlo, Netherlands, Rijksmus. Kröller-Müller). This painting, executed in somber but intense colors, represents the peak of his first period, which came to an end shortly after his father's death in March, 1885, when Vincent left Nuenen for Antwerp. There he entered the Academy and at first docilely accepted the discipline imposed by his professors, though this soon began to tell on his nerves. The crucial discovery of this sojourn was the work of Rubens, which revealed to Van Gogh the laws governing the principles of color that he himself had approached in his endeavors at Nuenen. It was also in Antwerp that he first became familiar with Japanese prints. The works he executed in Antwerp include two self-portraits (1885) as well as the *Back Side of Old Houses* and the *Old Man with the Head of Victor Hugo* (all, Amsterdam, Stedelijk Mus.).

In March, 1886, he rejoined his brother Theo in Paris, where, after a warm reunion, the two brothers shared their life for almost two years. On his arrival in Paris he enrolled in the atelier of Fernand Cormon, and through his brother he met and made friends with Toulouse-Lautrec, Emile Bernard, Louis Anquetin and Armand Guillaumin. The years in Paris yielded Van Gogh a series of discoveries: impressionism (q.v.), the impasto technique of Adolphe Monticelli (1842–86), and further knowledge of Japanese prints.

Although the daily testimony of letters is lacking for this period, the works themselves testify to an essential change in Van Gogh's art. His palette became brighter with the use of light, pure colors, and owing to his contact with the impressionists he adopted the pointillist technique (e.g., *A Woman of the Café aux Tambourins*, Amsterdam, Stedelijk Mus.). This trend is especially notable in his self-portraits (see detail, X, PL. 508) and in a series of still lifes, including *Still Life with Flowers* (The Hague, Gemeentemuseum), *Roses Trémières* (Zurich, Kunsthaus), *Shoes with Laces, Basket with Crocuses*, and *Apples* (last three, Amsterdam, Stedelijk Mus.). The importance of Van Gogh's Parisian period lies particularly in his assimilation of the most progressive currents in the painting of the time, In those years he absorbed the impressionist vision and technique and enriched his art with a new range of colors without losing his initial propensity for humble subjects.

In February, 1888, he left Paris for Arles, in the south of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

France. With the coming of spring, the sunny country reminded him of his native Holland, as evidenced by his painting *The Drawbridge* (PL. 287). Intoxicated with gaiety by the sun and colors, he painted his first orchards in blossom (examples in Amsterdam, Stedelijk Mus.). In May, owing to Theo's generosity, he was able to rent a small house in Place Lamartine in Arles, which he planned to furnish and occupy with fellow painters. During this period he became aware of the fact that for him the lessons of the impressionists had been only a transitional phase and that he was about to turn once more to the masters he had previously admired, Delacroix and Millet. In June he first saw the Mediterranean when he passed a week at Saintes-Maries-de-la-Mer (PL. 290), where, under the bright summer sun, he painted his most harmonious and balanced canvases: *A View of La Crau* (PL. 291) and *Fishing Boats on the Beach at Saintes-Maries-de-la-Mer* (PL. 288). He was in very high spirits and applied his new manner to portraits, such as those of his friend the postman Roulin (Boston, Mus. of Fine Arts; Otterlo, Netherlands, Rijksmus. Kröller-Müller). In September he settled into the yellow house on Place Lamartine, which he immortalized in his painting *The Small House of Vincent at Arles* (Amsterdam, Stedelijk Mus.). For the bedroom intended for Gauguin he began to paint a series of sunflowers, of which the best-known composition is now in the Tate Gallery. (For an earlier treatment of the same subject from his Parisian period, see PL. 289.) Inspired by Delacroix's theory of colors, he set out in search of the autonomous and symbolic values of color — for example, to express with red.

Paul Gauguin (q.v.) arrived in Arles toward the end of October, and during the two months they were to share the yellow house the two painters fired each other's genius. Van Gogh's *L'Arlésienne* (New York, Met. Mus., Bequest of S. A. Lewisohn) and *Les Alyscamps* (New York, E. C. Vogel Coll.) emanated from their exchange of points of view and their mutual influence. However, daily contact and working together caused mounting tension between these extremely different temperaments: Vincent, the religious enthusiast, and Gauguin, the critical creator. At Christmas the crisis exploded, and Van Gogh cut off his ear lobe after a quarrel with Gauguin, who consequently fled from Arles. Van Gogh was taken in at the hospital, where he was placed in the devoted care of Dr. Felix Rey, and Theo came to visit him there. In February, after Vincent had returned to his house, he was overtaken by a second crisis and was hospitalized again. In March, on the basis of a petition signed by 80 townspeople, he was once more placed in the hospital. In the intervals between seizures he painted the versions of *La Berceuse* (PL. 292), the portrait of Dr. Rey (Moscow, Mus. of Mod. Western Art), and a self-portrait. In the hospital he received the news of his brother's marriage on April 17; at about the same time he expressed the wish to be admitted to the Asylum of St-Paul-de-Mausole at Saint-Rémy. On May 9, he left Arles and entered the asylum in Saint-Rémy. On his arrival there Van Gogh began to paint again, first in the garden of the hospital and then in the surrounding countryside. In his landscapes, such as *A Road with Cypresses* (PL. 290), *Cypresses and Stars* (XI, PL. 371), and *Cornfields at Sunset* (PL. 288), there is a marked change in technique and color. His brush described dynamic curves, and stronger tones issued from his palette. In the summer and again in December he was overtaken by crises, during which he could not leave his room. Thus confined, he made black-and-white copies of works by Delacroix, Millet, Honoré Daumier, and Gustave Doré, rendering highly personalized variations on themes provided by the masters he most admired. Among these works are *The Good Samaritan* (V, PL. 120) and *Pietà*, after Delacroix; *Sheaving Girl* and *Sower*, after Millet (last three, Amsterdam, Stedelijk Mus.); *Men Drinking*, after Daumier (Chicago, Art Inst., J. Winterbotham Coll.); and *La Ronde des Prisonniers*, after Doré (Moscow, A. S. Puskin Mus. of Fine Arts). He also copied canvases he had done in Arles.

In January, 1890, he received news of the birth of his brother Theo's son, who was named Vincent. In the same month an enthusiastic article by Albert Aurier — the only printed comment on Van Gogh to be published before his death — appeared in the periodical *Mercure de France*. From February to April he experienced another, more serious attack. In March one of his pictures, *The Red Orchard* (Moscow, Mus. of Mod. Western Art), the only one to be sold in the open market during his lifetime, was bought in Brussels. By April the artist was recovering slowly and had started to paint again.

On May 17, 1890, Van Gogh arrived in Paris for an extraordinarily harmonious three-day visit with his brother and sister-in-law. From Paris he went on to Auvers-sur-Oise, where he entrusted himself to the care of Dr. Gachet, a patron and friend of painters. Working with great zest, Van Gogh painted portraits of Dr. Gachet (Paris, Mus. du Jeu de Paume; New York, S. Kramarsky Coll.; Frankfurt am Main, Städtische Galerie) and of Dr. Gachet's daughter (Paris, Mus. du Jeu de Paume), as well as peasants and landscapes (IX, PL. 25; *Cornfield with Crows* and *Fields with Blue Sky*, both in Amsterdam, Stedelijk Mus.; and *Les Chaumières*, Moscow, A. S. Pushkin Mus. of Fine Arts). Theo with his wife and child came to visit Vincent one day in June, and the artist spent Sunday, July 1, in Paris, where he visited with friends. On his return to Auvers he became despondent for having abused his brother's generosity. He painted some large canvases in which he "tried to express extreme solitude and melancholy." On July 27, 1890, he shot himself and died two days later, aged thirty-seven, with Theo at his bedside. The artist and his brother, who died on Jan. 25, 1891, are buried in the cemetery at Auvers-sur-Oise.

Though Van Gogh had devoted only about nine years of his brief, intense life to his art, he left almost 600 paintings and more than 800 known drawings and water colors. Through impressionism he advanced from the traditional, almost provincial Dutch painting of the beginning of his career to horizons unknown in his time. He created fresh domains for painting and paved the way for a school of painters that has not yet attained the summits reached by him. He had a clear sense of mission, which he did not succeed in satisfying. Like many of the greatest artists of the 19th century, Van Gogh was impelled in his work by an inspiration that was fed by his experiences with poverty and social injustice (in London) and by his commiseration with fellow men (the miners of the Borinage). By painting he was simply continuing his vocation as a preacher. His letters to his brother Theo constitute a passionate testimony of his life and stand as a literary monument of far-reaching importance. In a letter to Theo (No. 279) he declared that "the love of man is something one might suppose exists in every human being as the foundation of almost everything." And, with exemplary modesty, he practiced this love of mankind in his daily work. To Van Rappard he wrote: "Let your light shine for men — I think that is the duty of every painter. In my opinion, it does not follow, however, that this light should be spread through exhibitions. I must tell you that I hope for more and better opportunities to take art to the people than those given by exhibitions" (No. 43). With his paintings Van Gogh hoped to console men, and especially the poor, for their misery. This sentiment inspired the words he wrote in connection with a portrait: "There you can sense how much I feel in my element, and that somewhat consoles me for not being a doctor" (No. 560). He summed up this feeling in another moving and revealing passage: "You known, the more I think about it, the more I realize that nothing is more truly artistic than to love people" (No. 538). This sublime truth, which he reached through his consideration of human misery, directed all his work.

But Van Gogh's love also extended itself to things: "Is it not true that when one loves a thing one sees it better and more exactly than when one does not love it?" (No. 591). Herein lies the basis of the close tie between the work of the artist and nature itself; it explains his devotion to nature and the natural appearance of things.

As a follower of the Dutch school, he saw himself as a realist so dedicated to the truth that he wished to subordinate his profession as an artist to it. He expressed his view on this matter in a letter to Theo (No. 371): "But strictly speaking, isn't it enough if one says what one says clearly? Expressing something with elegance may render it more pleasurable — and I

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

do not scorn this — but that which is true cannot be enchanced by embellishment, for truth is beautiful in itself."

Indeed, it was this feeling about truth that caused him to reject accepted rules of beauty: "Look, Theo, I cannot do 'types of beauty.' I do my best with 'heads of the people' " (No. 252). Dutch realism provided the foundation and starting point for Van Gogh's art. And, his realism, like his love of mankind, was directed towards the humble: "I must say that, as far as I am concerned, I shall try to maintain a straight course and paint the simplest, most everyday things" (No. 390).

Because of his love of simple things he scorned routine and did not attach too much importance to technique or to the profession of artist in itself: "Technique is only a means, and an artist should not be seduced by the profession." He even apologized for his professional knowledge of painting: "In one way I am happy not to have learned to paint. If I had, I should probably have learned to scorn effects like these, but now I say *no*, they are just what I need" (No. 228). He also wrote: "Let the Pharisees babble about technique as much as they like in their empty, hypocritical words . . . real painters are guided by their conscience, which is called feeling, and by their soul; their brain is not the servant of their brush, but their brush serves their brain" (No. 426).

A realist who was full of affection for even the humblest object, Van Gogh did not aspire to reproduce the natural appearance of things: "What I try to capture is not a hand but a gesture, not a mathematically accurate head but an expression. The whistling of the wind, a digger looking up from his work, for example, or the act of speaking. In short, life" (No. 408).

His goal was to express more than the tangible truth: "To express hope with a star. The ardor of a being with the radiance of the setting sun. This is certainly not trompe l'oeil realism, but is it not a thing that really exists?") (No. 531).

Even in the works of Van Gogh's Dutch period there can be detected signs of this tendency to subordinate appearance to the essentials of expression: "Tell him that my great ambition is to achieve those inaccuracies, deviations, deformations and changes of reality that may well be lies, if one wishes, but are truer than literal truth" (No. 418). This propensity, which led to the exaggeration of form and color as they served the needs of expression, reached its culmination in the works of his French period (see his letter to Theo, No. 520, XI; col. 500).

In this fashion Van Gogh surmounted the realist tradition of Dutch painting, without repudiating his origins, and devoted himself to the task of perceptibly rendering inner truth. Thus his work and conception of art paved the way for 20th-century painting.

It was, above all, this comprehension of painting that revolutionized the world of art. Van Gogh gave painting new purpose, a true mission, which he himself pursued with evangelical zeal. In an epoch that aspired to the perfect, isolated work he could write: "It is therefore agreeable to work for people who do not even known what a picture is" (No. 604). In connection with *La Berceuse* (PL. 292) he noted: "It is very true that the common people who treat themselves to color prints and enjoy the sentimental music of hand organs are somehow more in the right and perhaps more sincere than certain men about town who frequent the Salon" (No. 592). To his brother he explained the mission he sought to fulfill by painting: "In my life and in my painting I can very well do without God, but wretched as I am, I cannot do without something that is greater than myself, something that is my life: the power to create. And if one is frustrated physically and seeks to create ideas instead of children, he thus becomes part of humanity everywhere. And in a picture I should like to say something as consoling as music. I should like to paint men or women with that suggestion of the eternal which used to be symbolized by the halo, and which we seek to achieve by the radiance and vibration of color itself" (No. 531). Driven by his charitable emotions and missionary zeal, Van Gogh consumed himself in the creation of his imposing body of work. Of his unbridled will to create he wrote: "I must warn you that everybody will think I work too rapidly. Don't believe it. Is it not our emotion and the sincerity of our feeling for nature that directs us; and if these feelings are sometimes so strong that we work without being aware that we are doing so, and the strokes follow one another with the coherence of words in a speech or a letter, we must remember that this has not always been the case, and that in the future there are sure to be heavy days without inspiration. So one must strike while the iron is hot and put aside the bars that have been forged" (No. 504).

An innovator and visionary, Van Gogh changed the meaning of painting. He transformed it from an art on the fringe of human life into a true message to humanity. In his art the genius of the man dominates the talent of the painter.

BIBLIOG. J. Baert de la Faille, L'époque française de Van Gogh, Paris, 1927; J. Baert de la Faille, L'œuvre de Vincent van Gogh, Catalogue raisonné (I, II: paintings; III, IV: drawings, water colors, lithographs), Paris, 1928; V. Doiteau and E. Leroy, La folie de Vincent van Gogh (pref. by P. Gachet), Paris, 1928; W. Scherjon, The Portraits Vincent van Gogh Painted of Himself at St.-Rémy (trans. from Fr. and D. by W. J. de Gruyter), Utrecht, 1929; J. Baert de la Faille, Les faux Van Gogh, Paris, 1930; W. Scherjon and W. J. de Gruyter, Vincent van Gogh's Great Period: Arles, St.-Rémy and Auvers-sur-Oise (complete cat.), Amsterdam, 1937; W. Vanbeselaere, De Hollandsche periode in het werk van Vincent van Gogh (pref. by A. Vermeylen), Antwerp, 1937; M. Rose and M. J. Mannheim, Vincent Van Gogh im Spiegel seiner Handschrift, Basel, 1938; J. Baert de la Faille, Vincent van Gogh (pref. by C. Terrasse, trans. by P. Montagu-Pollock), London, New York, Toronto, 1939; C. M. Brooks, Jr., Vincent van Gogh: A Bibliography, Comprising a Catalogue of the Literature Published from 1890 through 1940 (with introd. and notes), New York, 1942; R. Miedema, Vincent van Gogh en het evengelie, Amsterdam, 1948; C. Nordenfalk, Vincent van Gogh, Amsterdam, 1948; M. E. Tralbaut, Vincent van Gogh in zijn Antwerpsche periode, Amsterdam, 1948; K. Jaspers, Strindberg und van Gogh: Versuch einer pathographischen Analyse unter vergleichender Heranziehung von Swedenborg und Hölderlin, Bremen, 1949; W. Weisbach, Vincent van Gogh, Kunst und Schicksal, 2 vols., Basel, 1949–51; M. Schapiro, Vincent van Gogh, New York, 1950; J. Leymarie, Van Gogh (with bibliog.), Paris, 1951; V. van Gogh, Verzamelde brieven van Vincent van Gogh, Amsterdam, 1952–54; G. Kraus, De Verhouding van Theo en Vincent van Gogh, Amsterdam, 1954; H. Perruchot, La Vie de van Gogh, Paris, 1955; L. Roelandt, Vincent van Gogh et son frère Théo, Paris, 1957; A. Kuhn-Foelix, Vincent van Gogh, Eine Psychographie, Bergen, 1958; V. van Gogh, The Complete Letters, with Reproductions of All the Drawings in the Correspondence, 3 vols., Greenwich, Conn., 1958; K. Badt, Die Farbenlehre van Goghs, Cologne, 1961; J. Baert de la Faille, Étude sur les portraits de Vincent van Gogh, peints per lui-même a St.-Rémy; À propos du catalogue raisonné de l'œuvre de Vincent van Gogh, Utrecht, n.d.

Hans L. C. JAFFÉ

Illustrations: PLS. 286–292.

VASARI. GIORGIO. Italian painter, architect, and biographer (b. Arezzo, July 30, 1511; d. Florence, June 27, 1574). His active life embraced the first two generations of mannerism (q.v.), and he himself was a prolific painter in the mannerist style, although he is better known as an architect and a biographer. Vasari's *Lives*, written at the close of the Renaissance, was able to view that movement in perspective; this compendious work, the scope of which is revealed by its title (*Le Vite de' più eccellenti architetti, pittori et scultori italiani, da Cimabue insino a' tempi nostri*, Florence, 1550, 2d ed. 1568), has made Vasari's name famous and ranks him among the Humanists. Without it he would still be known as the architect of the Uffizi (IX, PL. 312, FIG. 470) but would appear as a secondary personality instead of as the important figure he was in his time in Italy and has been ever since in the world of art.

Vasari is a lively writer rather given to anecdote. To gather material for his *Lives* he traveled widely in Italy, endeavoring to see things firsthand and to speak with the artists themselves if they were still living or else with persons who had known them. Modern criticism has often corrected Vasari's attributions, but the *Lives* provides an invaluable original source. The second edition of the *Lives* was considerably reworked by Vasari and is more valuable than the first. The standard modern edition used by scholars is that of G. Milanesi, in nine volumes (Florence, 1878–85).

It is generally considered that Vasari is better on the Tuscan than on the trans-Appennine artists. He was a passionate admirer of Michelangelo, and his own mannered style as an artist derives ultimately from Tuscan precepts; but the fact that he thus favors design (*disegno*) over color and prefers his own school to the Venetian in no wise detracts from the value of his work (see RENAISSANCE, cols. 104–105).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

He appears to have been in the employ of Cosimo I de' Medici for the first time in 1554, and in that year he began to work on the paintings in Palazzo Vecchio (Palazzo della Signoria; II, PL. 28; VIII, PL. 102; XII, PL. 78). In 1560 the Uffizi, intended at first for government offices but soon to house the famous picture gallery, was begun. The elongated window enframements and supporting consoles, the repeated vertical emphasis of the columns and the other members, the conscious break with classical proportions (but with the use of classical detail), and the elegant, somewhat frigid effect of the whole combine to make this building a fine example of mannerism in architecture — an art in which this style is not always recognized — and give Vasari a place among the truly distinguished architects of Italy. Vasari's other chief monument as an architect is the Palazzo dei Cavalieri di S. Stefano (formerly Palazzo degli Anziani) in Pisa. In addition he designed the monument to Michelangelo in Sta Croce, the elegant small interior study (*studiolo*) of Francesco I de' Medici in the Palazzo Vecchio (VIII, PL. 103), and the Loggia in the Mercato Vecchio (1567), which was demolished in 1889 to make way for the Piazza Vittorio Emanuele, now Piazza della Repubblica. Stairs and rooms in the Palazzo Vecchio and numerous alterations and decorations in churches in Florence, Arezzo, Cortona, Pistoia, and elsewhere testify to a busy life with constant commissions. Vasari was among the founders of the Florentine Accademia del Disegno, which held its first session in 1562.

Vasari's numerous paintings have been harshly judged: Venturi has even used the term "insupportable" in this connection. The paintings are best viewed, not separately as depictions of incidents or persons, but rather as parts of a decorative whole. Vasari painted rapidly and lacked color sense. He was extremely accomplished in working on the basis of mannerist formulas, which he handled superficially but with great skill (cf. XIII, PL. 355); there was nothing in his work that was personal, intimate, or lovingly drawn out as with the Renaissance painters. Although Vasari's paintings are scattered about central Italy, an adequate idea of his style can be obtained from examining those in Florence, which include the 20 rooms in Palazzo Vecchio and in the Uffizi, a portrait of Alessandro de' Medici, the posthumous portrait of Lorenzo de' Medici, and Vasari's self-portrait.

BIBLIOG. Venturi, IX, part 6 (esp. illustrations); ThB, s.v. (esp. list of works); R. W. Carden, The Life of Giorgio Vasari: A Study of the Later Renaissance in Italy, New York, 1911; Vasari; H. Voss, Die Malerei der Spätrenaissance in Rom und Florenz, Berlin, 1920, I, pp. 258–94.

Arthur McCOMB

VEDUTE PAINTERS. See CANALETTO; GUARDI.

VEHICLES. The many categories of products with which the history of art is more or less collaterally concerned include that of the various means of transport. Even in the typological variety, bound to technical factors, of these means of transport, there lie common formal characteristics which follow their functional development. These are as recognizable in the sedan-chair as in the colossal construction of the modern ocean-going ship, and are not without partial parallel — and sometimes even concrete interdependence — with the functional characteristics of furniture, architecture, and interior decoration (qq.v.). As in analogous cases, the esthetic qualification involved is determined also by decorative means, especially in ceremonial and luxury products, often independently of the functional structure and in more direct contact with dominant styles of the relative epoch or culture. The representation of vehicles in works of art has occupied artists from very early times; man has obviously taken great pleasure in recording, even in mythological themes, his conquest of nature in the area of means of locomotion.

SUMMARY. Formal aspects of vehicles (col. 702): *Function, form, and symbolism; The relationship to architecture; The influence of tradition.* Vehicles in relation to contemporaneous culture (col. 705): *Vehicles in art.* The decoration of vehicles (col. 707): *Wheeled vehicles; Sleighs; Boats and ships.* The representation of vehicles in art (col. 713).

FORMAL ASPECTS OF VEHICLES. *Function, form, and symbolism.* The various types of vehicles are normally classified in general categories according to their method of locomotion (and consequently in relation to the element on which they rest while in motion: land, water, air) and according to their specific functions (vehicles for the transportation of persons or specific things, over short or long distances; vehicles used in war; ceremonial vehicles; sporting vehicles). These distinctions would remain at the level of a purely technical typology — and would therefore be of no interest artistically speaking — were it not for the fact that, as for any other man-made product, in vehicles the correspondence of the structural elements to the specific technical and functional requirements is translated into markedly individual forms, which are in turn susceptible to modifications of an expressive, decorative, or symbolic nature.

It can readily be seen how the various techniques of locomotion have given rise to the elaboration of basic structural elements which, while they present close analogies to each other from the mechanical point of view, present individual characteristics in the various vehicles in relation to their specific qualifications. It can be noted for example how the system of transport by sliding has resulted in typical forms which recur, in a sense, in quite different vehicles. The shafts of primitive haulage vehicles, the runners of sleds, skis, and skates, the outriggers in many of the boats of the ethnological world, and even the keels themselves, constitute a single broad formal tendency. The multiple differentiations are the result of the search for a structural integration of the varying characteristics of the vehicles themselves and improvements dictated by purely practical factors. Vehicles whose element is water, for example, have the two fundamental requirements of stability and movement. The ideal type of stable floating unit is one which covers the greatest possible water surface, as in the raft, which evolved into paired hulls. Concave floating units, however, also guaranteed stability, and the need for ease of movement led at the very beginning to the use of oblong flowing forms. These two forms — the raft and the shell or hull — have found separate fields of development and specialization in different cultural areas: the former principally in the ethnological cultures of the Pacific Ocean, the latter in the historical sphere of the West, where it achieved the greatest complexity of technical and formal expression. But even in hulls the general esthetic effect was conditioned by the means of locomotion. The long, low triremes and galleys (PL. 311) powered by oars express a completely different concept from the multimasted clipper ships and sailing vessels (PLS. 313, 316), which multiply the surfaces in contact with the air as much as possible.

In elaborating these basic forms man has often drawn inspiration from the animal world — not only in the sense of a simple morphological paraphrasing but in that of a careful structural interpretation of the functional suggestions. The motivation behind the inclusion of additional formal qualifications referring more or less explicitly to these models, whose interpretation is of a strictly empirical nature, must be considered. It is not so much a superimposition of decoration on structural elements (although this is sometimes the case, and even outspokenly imitative), as it is a confirmation of the general tendency toward a resolution of the entire process of the formal construction of the manufactured object in a phenomenological unity which takes into consideration its various aspects and is suited to the different functions for which the vehicle is intended, expressive and symbolic as well as utilitarian. Thus, for example, similarities to natural shapes are quite evident in the sail and the wing (so essentially functional in their form), but also apparent are references to motives recurrent in mythology and symbolism, almost as if to stress a kind of supernatural dominion over the forces of nature that was realized though them.

The wheel, in its purely structural aspects, already presents so many elaborations of such complexity, within the ambit of its basic reference to the ideal and perfect form of the circle, that it can be considered an exemplary product of form determined by function. Yet precisely for its reference to the circle, the formal qualifications of the wheel have often adopted the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

universal iconographical themes of that shape, in their own complex decorative (see ORNAMENTATION), symbolical (see SYMBOLISM AND ALLEGORY), cosmological (see ASTROLOGY AND ASTRONOMY), and esoteric significations. Among the ancients the wheel aroused such perpetual wonder that it became universally attributed to the astral gods, or to meteorological phenomena. From such attribution originated various mythical images, such as that of the sun-charioteer, which became very widespread with the adoption of the fast war-chariots. These images persisted for a long time in the thematic repertory of the figural arts, with numerous variants ranging from the cult wagon, with the solar disc drawn by a horse (14th cent. B.C.; found at Trundholm; Copenhagen, Nationalmuseet; V, PL. 169), to the classical representations that refer to Sol-Helios, or Phoebus-Apollo, and to Aurora, and that recur in Western art up to recent times. These mythic transpositions — of which extensive literary and iconographic documentation is still extant — augment the scant historical data available on the actual distribution and use of wheeled vehicles in the various prehistoric and protohistoric civilizations. The iconographic forms connected with the symbology of the wheel occupy an important place — both quantitatively and qualitatively — in the broad thematic current of such transpositions. Such forms often condense the visual manifestation of the myth, occasionally embodying a multiplicity of meanings simultaneously, as the cosmic circle or the emblematic flower, or even simple decorative motifs, while the spokes often denote the parts of the world (the hub is the "navel," and so on). These universal iconographic meanings may moreover be joined by others of a more limited extension, connected to particular forms of worship. In the Celtic world, for example, the wheel was considered the typical form of the thunderbolt, of meteors, of the sun itself; in certain ceremonies that still take place in areas of the Rhine and the Alps flaming hoops are rolled down the mountainsides.

A study of the motivations behind the formal and decorative subject matter of the wheel, of other parts of vehicles, and of vehicles as a whole, must among other things not lose sight of the mythical-allegorical features commonly attributed to that in which the vehicle is instrumental, namely the voyage, the "transitus," often thought of as a relatively exceptional existential condition — the synthesis, or better the resolution, of the life cycle, which gave rise to the need to confer a propitiatory value upon some of the formal or decorative motifs of vehicles. A fine example is the funeral barque of the ancient Egyptians, modeled on a prototype with high, curling prow made of bundles of rushes. A model in the Metropolitan Museum in New York has the high prow painted to reproduce a heavy meshwork of colored beads; between the bulwarks is a row of nine carved ostrich plumes. Another model, from the tomb of the chancellor Wekhhotpe of Mir, has painted eyes on the bows and rudder blades and small falcon heads on the rudders and bars.

Symbolic decoration was also used in ancient Greek boats; a fine example is to be seen in the painting on a kylix by Exekias (V, PL. 185) in which the prow has an eye and dolphins painted on it, while the stern rises up into the gracefully curved head of a seabird. The boat depicted in the Etruscan Tomb of Hunting and Fishing (VI, PL. 55) also has a dolphin carved into its prow, protecting its occupants and "seeing" its way through the depths. A similar meaning can be read into the figureheads of the great sailing vessels of modern times; these fall into the sphere of folk art (examples in the museums of the New England fishing towns: Salem, Mass., Peabody Museum; Mystic, Conn., Museum).

The relationship to architecture. One of the fundamental requisites of any vehicle, after meeting the technical requirements of mobility, is that of providing a place for the load. In all vehicles a mechanical part can be distinguished from the cab, or space reserved for transporting persons or objects. Obviously, the relationship between these two parts is of necessity a close one. The need for ease of mobility imposed particular conditions of smoothness, robustness, and relative flexibility upon the superstructure, in addition to the obvious requirements of well-articulated connections between the superstructure and the mechanical parts which have favored the development of particular structural techniques.

Particularly from this point of view, the structure of vehicles (and more specifically the superstructure — the "internal space") overlaps in essential points with architecture, from which it has borrowed (and in a few cases to which it has transmitted) various structural details and even some entire models. Especially interesting iconographically are the Hindu rathas, the temples built in the form of wagons (IV, PL. 213), with plinths sometimes adorned with wheels in relief and entrance stairways lined with stone horses and elephants (IV, PL. 257; VII, PL. 486). In a certain sense, therefore, at the base of the empirical idea of "vehicle" is the concept of "small mobile house." It suffices here to mention the interrelations between various types of tents, huts, pavilions and the forms of many wagons, coaches, and animal-borne conveyances. Elaborate constructions could be placed on the broad backs of elephants. In the early Indian armies war elephants were provided with small archers' towers (VI, PL. 255), while in the Borobudur reliefs in Java some of the elephants are shown carrying pavilions in the form of little temples. Litters and sedan chairs were actually traveling rooms, with a chair or couch inside, and in India so spacious as to contain various utensils, food supplies, and hookahs. When longer journeys were involved and protection from dust and inclement weather was a necessity, the wagons and coaches used were real houses on wheels. The American Conestoga Wagon (PL. 297) has its direct antecedents in the Roman (PL. 296) and medieval traveling wagons (PL. 299). Particularly close to a house in form are the Chinese and Japanese covered carts (PL. 298). A similar relationship can be discerned between boats and ships and wooden buildings, not only in their structural techniques but in the actual appearance and use of many parts. Shipbuilding is "naval architecture," and in many languages the nomenclature of parts of ships borrows from architectural terminology (bridge, castle). A good example of this tendency is the passenger boat of the 19th century, in which the design of the superstructure was so similar to that of a building that the whole seemed a kind of floating, self-propelled house (PL. 316).

The confirmation of the relationship between vehicles and certain building structures and types permits the former to be considered as an ephemeral branch of architecture, obviously tending to an autonomous development.

The influence of tradition. Preliminary mention should be made here of another typical characteristic of vehicles that has conditioned their formal and structural development. Only rarely has the production of vehicles risen above circumstantial factors determined by the fact that they long continued to be a craft product. This is clearly seen in the marked persistence of certain traditional types (see FOLK ART). With the stabilization of a sort of ideal model — which is realized anew in the construction of each individual vehicle — is reproduced the phenomenological schema, peculiar to all forms of folk art, characterized by the deliberate employment of an ideal model fixed by tradition and by the corresponding complex social and cultural values. Occasionally a certain friction has arisen between these structural methods, which long retained certain basic "imprints," even in vehicles quite different from each other, and the stimulus to the elaboration of new forms supplied by the technical-functional development of the locomotive parts themselves. It suffices to cite the coaches which betray their origins in the sedan chair (PL. 300), or, even more strikingly, the first automobiles, whose form was clearly a free translation of that of the coach (PL. 306).

Only recently has the search for the rational integration of the requirements for a maximum capacity with existing technical data become the basis of vehicle design. On the whole this process has seen the superstructure fused with the entire carrying complex inherent in its locomotion. Note particularly the fusion and solidity of the various parts exemplified by a modern transatlantic liner (PL. 317), between the body and the chassis of an automobile (PL. 307), and particularly between the cabin and the fusilage of an airplane (PL. 318).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Note should be taken that these new ways of doing things, conditioned by the modern mass production techniques, were arrived at after a preliminary phase which, in the 19th century, witnessed the reduction of the great variety of vehicles to a more limited number of canonical types, clearly differentiated from the functional point of view (an extremely interesting study could be made of the motivation behind the realization of so many unique examples in the 18th and 19th centuries, despite the above-mentioned persistence of tradition). This was the case with some of the light animal-drawn vehicles: the cabriolet (or gig), the *fiacre*, the tilbury, the brougham, the duchess, the victoria, the coupé, the phaeton, the landau (PL. 305). Although still within the bounds of craft production, a selective process, analogous to that which occurred contemporaneously in the field of musical instruments, took place.

Until very recently the forms of many vehicles have often been considerably out of step with their contemporaneous figural cultures, for reasons deriving from the craft production and the persistence of certain traditional "imprints." An outstanding exception was the baroque period, in which the structural and decorative forms of vehicles came very close to the formal values of the major arts of the period. However, generally when this happened the functionalism of the vehicle suffered (PLS. 301, 309).

VEHICLES IN RELATION TO CONTEMPORANEOUS ARTISTIC CULTURE. For a better understanding of the various aspects of the historical problem of the relationships between the form and decoration of vehicles and other kinds of artistic expression, it is useful to distinguish between the cases in which the formal-decorative qualification was an exponent of the preeminent expressive functions of the vehicle in question and the cases in which the qualification tended rather to complement and emphasize the form corresponding to the prevalently practical aspects of the vehicle as such.

Coming under the first classification are ceremonial vehicles, which were conceived of primarily as expressive instruments of determined content. The requisites of mobility are reduced to the basic minimum. Created for religious purposes, or intended as signs of power, prestige, or luxury, these vehicles, taken as a whole, can be characterized as symbolic forms.

The expressive functions have determined not so much the ideation of the structural forms, and the resulting specific typological classes, as they have determined modifications — even deep-seated — in the exterior aspect of certain types of vehicles in common use. These modifications may consist in the simple employment of valuable materials, but more frequently they comprise an emphatic accentuation of the decorative characteristics, whether by adding carved or painted ornamental or figural motifs, or by means of a more radical reshaping of the parts, even those functionally essential, so that they take on anthropomorphic, zoomorphic, or phytomorphic aspects. The forms of shafts, sides, and hubcaps in so many wagons offer an example. Under this aspect, the ceremonial vehicles, whether land (such as the ancient triumphal cars, the *carroccio*, the gala coronation coaches) or sea (such as the Venetian Bucintoro; PL. 315; VII, PL. 101), present close affinities with the trophies or "machines" of the festive apparatus (see DEVOTIONAL OBJECTS AND IMAGES; SCENOGRAPHY). The mobility of the festive apparatus is, however, almost accidental; they can be considered architecture or sculpture in the true sense of the word (IV, PL. 213). Floats and cars for pageants are also objects to be considered as works of art rather than as vehicles. An interesting survival in the 20th century of the 17th-century baroque tradition, related in spirit to the exotic chariots designed by great artists (XII, PLS. 432, 433) for triumphal entries and political pageants were the great gilt circus parade wagons, lavishly decorated and pulled by as many as 40 horses (examples in the Ringling Circus Museum, Sarasota, Fla.).

The decorative themes are usually part of the general iconography of each artistic culture: thus motifs drawn from Greek mythology appear on the bronze "tensa" in the Capitoline Museum (Rome), sacred scenes and figures pertaining to the various religions appear on the pictorial or sculptural decoration of vehicles for religious use, epic figurations on war cars or on those which have become the symbol of a given society (a reflection may be found in the decorations of Sicilian carts, in a way signifying the commemoration of a folk epic; V, PL. 345), themes from the classical repertory on the luxury vehicles of the age of absolutism. Emblematic or heraldic representations, as an obvious reference to the person, family, or social group who owned the vehicle, have often recurred, especially in the post-Renaissance carriage (see EMBLEMS AND INSIGNIA, col. 731). Allegorical representations in which intentions of a propitiatory nature are discernible and which are clearly derived from decorations on folk vehicles were also quite frequent. In successive phases allegorical representations became much more general, even in ceremonial vehicles. A clear shift of decorative accent from the properly ceremonial function to that expressive of prestige emerges from the representations of arcadian scenes, floral ornament, cupids, and *chinoiserie* on so many 18th-century carriages and sedan chairs (PLS. 301, 303) and sleighs (PL. 302). It is thus evident that formal qualifications expressly intended to be realized as artistic expressions, and therefore particularly rich and meaningful, are found above all in the case of ceremonial vehicles.

Vehicles in art. The search for a balance between expressive functions and practical ones, with the former in some way referring to the latter, is evidenced in every type of vehicle not properly ceremonial. To some extent the technical aspects that condition the form of each basic class of vehicles must be kept in mind. These often result in the persistence of specific forms or decorations consecrated by tradition, fixed in a kind of spontaneous conceptual definition of archetypes with their own formal and decorative peculiarities; or unique symbolic and emblematic iconographies may be established, occasionally autonomous in respect to those normally occurring in other forms of figural expression. These then are the phenomena lying at the root of those inconsistencies that so often occurred between the formal aspects of vehicles and their contemporaneous artistic cultures. But it is also precisely these phenomena that highlight the fact that a consideration of any purely stylistic correspondence which may exist (such as that found in ceremonial vehicles) is only part of the problem of the relationship between vehicles and the different stylistic periods and artistic cultures. A mechanical and antihistorical comparison between the form of a vehicle and a particular "style" — like so many other artificial concepts — should by all means be avoided. To formulate effectively historical criteria of vehicles (insofar as they are objects into whose production esthetic factors enter) it is necessary to establish the bases of a few consonances — that is, how the general esthetic currents of a period are transferred to vehicle design. An investigation undertaken in this sense provides a broad historical interpretation of the expressive characteristics of the forms and decorations of vehicles. The 17th–18th century carriage (PL. 301), for example, expanded in proportion, open and diffuse in form, and overloaded with gilded, polychromed ornamentation, was in its entirety a sort of splendid and fanciful metaphor of itself — a typically significant expression of baroque taste. By the same token the neoclassic carriage — small, of closed and compact form, sparing of ornament, chromatically sober — reveals the general esthetic tendencies proper to the early 19th century.

Particularly illuminating is a comparison of the 19th-century passenger boats, trains, the first airplanes, and the first automobiles, in which a certain mechanical stress is associated with an unrestrained and fragmentary formal-decorative eclecticism, with their modern counterparts. The latter, thanks to the concept of industrial design, have been redetermined as a unified formal unit and can be considered as among the most meaningful exponents of modern taste and of the present-day tendency toward the "recapture of a style."

Lastly, what may be considered as proof of this substantial assonance between vehicles and the general esthetic sentiment of the civilization which has produced them is also the fact that they often have recourse to the thematic repertory of the figural arts, not only in generically descriptive ways, but also

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

as a typical and distinctive motif of given, formal predilections, so that the vehicles themselves become, metaphorically, "decorative" subjects: in this regard it is enough to consider the special value assumed by the representations of contemporaneous vehicles (especially of ships) in Greek vase-painting, in Roman reliefs, sometimes in medieval art, and later in the canvases and prints of the 17th and 18th centuries, particularly in England and France and, especially, in Holland (PLS. 311–314; see below).

THE DECORATION OF VEHICLES. *Wheeled vehicles.* While in antiquity the representations and models of vehicles are often of interest more as indications of technological achievements rather than as actual works of art, for sheer beauty and simplicity of form the Egyptian war chariot (18th dynasty) from the necropolis of Thebes (PL. 294) has seldom been surpassed. As with many ceremonial or representative objects, the Egyptian chariots found in the tomb of Tutankhamen were highly decorative and comparable in style to other furnishings of the period. They were entirely open at the back, with lozenge-shaped openings at the side and a double rim providing support at the top of the body. The whole vehicle, including the wheels (which had leather tires), was encased in gold and encrusted with semiprecious stones, glass, and faïence.

One of the earliest extant examples of a wagon preserved almost in its entirety is that of the Oseberg ship burial (ca. 850), which also included a ship and four sleighs. The rich carved ornamentation on all six vehicles (PL. 296; IV, PL. 176; V, PL. 340) is typical of the period (see SCANDINAVIAN ART), an adjunct to, but on the whole quite distinct from, the basic structural form of the vehicles.

In the traveling wagon of Emperor Friedrich III of Austria (ca. 1475), of which only the superstructure (PL. 299) has survived, the relationship to the art of the time is equally striking. Although to a certain extent this, like many of the examples which have escaped destruction, should be considered a ceremonial wagon, it was basically practical as well as representative. The decoration stresses various functional members and also forms some of the autonomous parts. The example in question, while it must have been quite uncomfortable (it had no springs), has all the characteristics of the late Gothic style in its carvings, its crocketed pinnacles, its agitated draperies. The whole box is gilded, parts of the figures are painted in flesh tones, and the coat of arms is polychromed.

Of importance, both sociologically and as an explanation of the diffusion of the carriage at the time of the Renaissance, is the fact that it was no longer limited in use to carrying women or as a ceremonial vehicle used in wedding processions, coronations, triumphal entries, and so on. Descriptions in contemporary literature give an idea of the richness of accouterment of these ceremonial vehicles. Beatrice, wife of Charles I of Anjou, entered Naples in 1207 in a wagon covered with blue velvet embroidered with golden lilies. In 1300, for the wedding of Galeazzo Visconti with Beatrice d'Este, a four-horse wagon was built in Milan. By 1471 the Florentines could gaze in wonder at the 12 wagons with silver-embroidered gold cloth in Maria Galeazzo's suite. But it was not until the 16th century that wagons and carriages came into more general use, particularly after the invention of a method of springing the body. While previously representations of carts and wagons were incidental, appearing as genre elements in other scenes (see a cart for the transport of crops in the frescoes in Trent, VI, PL. 64; the two-wheeled carts in the Luttrell Psalter, London, Br. Mus., Add. Ms. 42130, fol. 162 and 173b), they now came to be the prime elements of many compositions (see water-color woodcut by Nicolaus Solis of the entrance procession of the Duchess Renata von Lothringen for her wedding with Duke Wilhelm V of Bavaria, printed in 1568 by A. Berg, Munich; water colors by Jost Amman of the entrance of the emperor Maximilian II in Nürnberg, 1564, Munich, Staat. Graphische Sammlung; projects for imperial coaches from the first quarter of the 17th century, engraved in 1771 by Roubo the Younger in his *L'art du menuisier carossier*, part of the French Academy publication, *Les arts et les métiers*, after originals in Paris, Bibl. Nat.).

With the 17th century the coach began to have an artistic form of its own, no longer borrowing from the throne, the armchair, or the simple covered wagon. The earliest existing example of a closed coach with glass windows is the coach of Alexis I Mikhailovich, dating from about 1658, now in the Hall of Arms in the Kremlin (PL. 300). Its over-all architectural form and its structural members were no longer hidden by draperies but were accented and brought into prominence by ornamental fittings and wood carvings. As was the case with furniture, prominent artists furnished designs for the decoration and appointments of coaches (without, however, any technical interest, in contrast to the 18th-century developments). In France such artists as A. and J. Le Pautre engraved design projects for the structure of the carriage body (see the examples by J. Le Pautre in *Nouveaux dessins pour orner et embeler les carosses et chairés roullantes*, published by Mariette ca. 1670). A French coach similar in design to the earlier style of Le Pautre exists in Madrid (Kreisel, 1927, pl. 6A); it is a classic example of a closed carriage of the 17th century, luxurious, but restrained. There are no extant examples of the contemporary "half-open" ceremonial coaches of Italian design, but descriptions, engravings, and drawings present a good picture of some of these splendid carriages with their flamboyant decorations, ornaments, and sculptured figures. Each view of the carriage is picturesque: allegorical paintings and floral ornaments (acanthus) burst out of the limits of the functional form to become a commanding baroque framework for the person being honored in the procession (see the engravings of Louis Rouhici, Mus. Civ. di Como).

During the reign of Louis XIV France became the unchallenged dictator of style in carriage construction, and so remained throughout the 18th century. The "great coach" for ceremonial occasions became ever more ostentatiously elaborated. For some time, the outstanding example of this type was considered to be the coach designed by Bernard Picard (1673–1733) in 1714 for the Spanish ambassador to Paris, the Duke of Ossuna (the engraved designs for this coach may be found in almost all European engraving collections). In contrast to the classic closed coach, the ornamentation began to take on a gay spirited life of its own; it flowed over the now lightly bulging coach body and its ornamentally concealed structural elements, assuming the strength and weight of its baroque antecedents. A beautiful example of French production is the great coach of King John V of Portugal, produced about 1715 and still in Lisbon (Museu Nacional dos Côches); also in Lisbon is the coach of the Portuguese ambassador to Rome (PL. 301). The German court also had many of its "great coaches" made in Paris, as, for example, the coronation coach of Emperor Charles VII made in 1741 (Munich, Marstallmus.). By this time the body panels of the coach were almost always covered with representational paintings, as in the case of the coach of Catherine the Great of Russia (Leningrad). The more mobile berlin came into common use during the middle of the 18th century (examples in Munich, Marstallmus.; Paris, Mus. de Cluny). The open four- to eight-place city coach, which made its appearance as early as 1620, and the phaeton, the luxury carriage of the Parisian *jeunesse dorée*, had a relatively high body and large fore wheels; even more common than these was the *calèche*, a sort of phaeton in coupé form, the most elegant models of which developed into the cabriolet. Here the rococo fantasy achieved its most daring realizations (PL. 300): the whole shape of the vehicle gave way to pure ornament. This can be seen in the examples of *calèches* in Heidelberg (Kurpfälzisches Mus.) and in Munich (Marstallmus.). The decisive turn toward the development of the modern vehicle began during the reign of Louis XVI, when the great ceremonial coaches, which moved slowly and cumbersomely, were gradually relegated to the background by the demand for lighter and faster carriages. Technical development corresponded to the practical requirements. England became the leader in construction of light sporting vehicles (coupé, London, Vict. and Alb. 1770/80; English phaeton, Hanover, Herrenhausen Castle, end of 18th cent.). Italian carriage construction competed with the French, especially in Milan, Bologna, and Naples. Their berlins, however, were decorated with a classic reserve, omitting the paintings on

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the body panels (examples in Milan, Mus. Naz. della Scienza e della Tecnica; Florence, Pitti, the coupé of King Victor Emanuel I of Sardinia, ca. 1800). The décor, still following the lead of Parisian style, began to lose its national characteristics and assume a more international aspect. In addition to the light mobile berlins which continued to remain in use, there appeared in the 19th century several especially ornate state carriages (the coronation coach of Emperor Napoleon I, Versailles, ca. 1804; the coach of state of Queen Maria Cristina of Sardinia, done in Egyptian style by G. Pregliasco, 1819, Florence). This neo-baroque revival reached its extreme in the ostentatious carriage of King Ludwig II of Bavaria (ca. 1870) at about the time when the invention of the automobile was on the eve of condemning the carriage to a gradual disappearance.

Sleighs. Beginning with the Oseberg examples sleighs, like carriages, echoed the contemporaneous taste. The sleighs themselves, as well as the trappings for the horses, were often designed by artists; very often the entire body of the sleigh was composed of three-dimensioned figures and animals. That they served for the amusement of princes is evident in the sleighs that were decorated with allegorical scenes such as "the ship of gold," "Justice with sword and scales," and "fabulous beasts of the forest" (Dresden Armory Inventory of 1606), as well as the bizarre sleighs of the court jesters (see the engraving in Georg Lohneysen's *Della Cavalleria*, Nürnberg, 1632). Since the figures were of papier-maché with raiment of real cloth, it is not surprising that no examples survive of these figure-sleighs. There is a sleigh from the first half of the 17th century, with the figure of a Ceres in wood (Coburg, Kunst-Sammlungen Veste) which stylistically owes its form to the German Renaissance; the Centaur sleigh (Stuttgart) from the second half of the 17th century, however, is a prime example of baroque. These led to the peak of sleigh construction art in the court of King Friedrich I: the racing sleigh with Samson and the one with Apollo, which are attributed to Andreas Schlüter (Berlin, Schloss Monbijou). The sleighs became in effect sculptured representations with baroque metaphorical character — even the runners became part of the over-all composition. Some of the most beautiful sleighs of the 18th century (such as the south German racing sleighs from Stuttgart and the elegant Régence example from Venice, PL. 302), in fact, cannot be said to be decorated, but are in themselves large ornaments. The more reserved decoration of the fashionable "arm-chair" Parisian sleigh of about 1760 (Paris, Mus. de Cluny) stands in high contrast to the exaggerated Munich racing sleighs produced only slightly earlier (ca. 1730–40). However, the greater preference of the 18th century was not for these ornament-sleighs, but for those decorated with allegorical scenes or comedy figures (Munich, Stuttgart, and Leningrad have large collections of these examples, with figures rising on the front of the sleigh body; see also the elegant design of a Dresden artist of 1740/60 in the Dresden copper-engraving collection). Near the end of the 18th century the fashion for sleighing declined, and André Jacques Roubo in his engraving of 1771, *L'art du Menuisier carossier*, proposed for the sleigh a form more clearly compatible with its function and with a reduction of ornamental embellishment and a complete rejection of all accessory figures.

Litters and sedan chairs. Palanquins supported by porters were in use in Egypt from the time of the Old Kingdom (see the wooden model from the tomb of Queen Hetepheres, mother of Cheops, at Giza, and that appearing on the reliefs of the mastaba of the dwarf Seneb, 5th dynasty, also from Giza) as in Mesopotamia (protodynastic impression from Susa). In the art of ancient India, however, litters are represented only rarely and generally for the transport of sacred images in procession; in the majority of cases they appear as a platform provided with a low border and two shafts. Luxurious pavilions with several tiers of couches were often erected on this platform, as may be observed, for example, in the reliefs at Amaravati (see ANDHRA; BUDDHIST PRIMITIVE SCHOOLS). Other types, no less rich, may be observed in the reliefs at Borobudur (see INDONESIA; INDONESIAN CULTURES). The litters of the Hindu princesses were shaded by gilded parasols whose number varied in relation to the rank of the occupant. Since every irregularity in the gait of the porters produced annoying jolts, the above types of litter were replaced by litters similar to those of the late Khmers, that is, hung from a single sturdy pole whose ends rested alternatively on the right and on the left shoulders of the porters. Litters of both types are to be noted in many miniatures of the 18th and of the early 19th century (original models — richly painted and lacquered — are still today in the possession of many temples and princes' palaces, but such models are now reserved only for the transport of sacred images in processions).

In the medieval West the use of the sedan chair was in general reserved for women, invalids, and ecclesiastical authorities. The sedan chair, however, came into fashion again during the baroque and rococo periods as a ceremonial or, more generally, luxury vehicle, for sovereigns and the aristocracy: all of these examples have a characteristically conspicuous decorative accentuation, either plastic or pictorial, and a structural concept that calls to mind a small throne, an intimate palace room, or even, sometimes, a valuable piece of furniture. Examples of sedan chairs conceived for purely utilitarian purposes are rare.

The sedan chair was only sporadically diffused among the peoples of the ethnological level and in general was reserved for persons of high rank or for particular ceremonies, such as the Santal marriage litters of Bihar, India, adorned with valuable intaglio (PL. 293).

In the early Mexican-Andean civilizations sedan chairs were in common use for high dignitaries, as is testified by the frequent representation of them in clay and stone sculptures and in painting. Only a few original sedan chairs have survived, but something of what must have been their esthetic value can be seen in a model from the Chimu kingdom of northern Peru (PL. 293).

Boats and ships. In order to recreate the atmosphere of magic that originally surrounded the construction of boats (and of which there is still a recollection in the launching ceremony), it is probably necessary to go back to the habits of the oceanic populations even more than to the splendid Viking burial-ships, which represent ceremonial types belonging to military leaders. Thus still in Melanesia the decoration of pirogues, which are considered not only as means of transport but as having personality, occupies a foreground position in the rich local artistic production. In New Guinea the sides of the canoes are decorated with polychrome designs representing mythical beings and with ornamental motifs in the style native to each artistic area (see MELANESIAN CULTURES; NEW GUINEA). But the part of the boat where the genius and technical mastery of the artist are more fully developed is the prow, where a figural representation, usually of an ancestor, is placed to guide and to protect the crew against the dangers of the sea. The best realizations are naturally found in the areas of Massim and Sepik, given the artistic level achieved in these stylistic zones. In the Massim area the minuscule and anthropomorphic figure of the ancestor, with the limbs stylized, is inserted into a spiral-motif construction — an abstract recollection of the plumage of the frigate bird. This bird also appears alone, always extremely stylized and connected with a series of geometrical curvilinear motifs which are also often ophidiomorphic. In the Sepik area the form is often constituted in the graceful silhouette of a stylized crocodile's head and various totemic symbols.

On the northern coast of northwestern New Guinea, the canoe prows are of various types. In the Geelvink Bay area sculpture and decoration are stylistically similar to those of the *korwar* (see NEW GUINEA); the figures, even though they are rather small (rarely over 2 ft. high), have a monumental character lent them by the accentuated size of the head, legs, and arms in comparison with the rest of the body. The scroll decoration shows traces of Indonesian stylistic influences. Two other types of decorated prow are encountered on the northern coast: one trapezoidal, with rich openwork arabesques, clearly of Indonesian character, and the other, curved, formed of a complex interweaving of human and animal figures.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

In the Bismarck archipelago, in spite of the high level of artistic production, boat ornamentation does not compare with the elegance of the New Guinea boats. However, note should be made of the prows of the Gazelle Peninsula, New Britain, which are carved and painted in geometrical motifs. In New Ireland, the pirogue's prow, stern, and often even the lift of the hull approaching the bow or stern are decorated with simple but harmonious geometric friezes, achieved with shells and white discs.

In the Solomon Islands great importance is given to the ornamentation of the pirogues, which are the most beautiful in all Melanesia, with the ends raised and without outriggers. Mother-of-pearl is delicately inlaid on the sides, giving emphasis to the designs (painted in black on a white background) representing the frigate bird. Large shells are fixed into the prow and at the stern end is fixed a small, crouching figure with an overlarge head and mother-of-pearl inlay eyes. Still on the stern there are also sculptures in high relief of two human faces, one facing to starboard and the other to port. Of even greater artistic importance is a small, crouching figure representing a guardian spirit, placed on the lower part of the prow at the water level. Mother-of-pearl inlay indicates the line of the eyes and the features of the face; the hands are generally clasped under the chin to support the large head, and the elbows are generally propped on the knees. The massive body possesses an extraordinary monumental quality. The oars are also splendid — mythical figures are carved and painted in red, black, and white on both sides.

Proceeding southward, as far as New Caledonia, boat decoration becomes less and less refined. In the New Hebrides it is reduced to a prow ornament, so abstractly stylized that its avimorphic character is recognizable only through its name.

Boat ornamentation of consistently high quality is achieved in New Zealand (see NEW ZEALAND; POLYNESIAN CULTURES), where the exceptional taste and technical virtuosity of the Maori sculptors, present in all their artistic production, finds a superb medium in the decoration of the sides, which are carved in low relief with the intricate spiral motifs characteristic of this area, and in the creation of the well-known prow and stern ornaments which are formed by raised sections in wood where the same motifs elaborated on the sides are executed in openwork and interspersed with figures carved in the round. In the other Polynesian archipelagos (except in the Society Islands, where the ancient double pirogues — of which, unfortunately, only arbitrary drawings by the early Pacific explorers remain — were decorated with elaborate paliform sculptures) the boats do not show exceptional ornamentation, but for their technical perfection are to be counted among the finest realizations in the field by peoples at the ethnological level. The use of the single or double outrigger and the strength of the hull permitted sailing on the high sea, and perhaps even overcoming, in one last leap, the great oceanic distance between the most southerly island, Easter, and the American continent. The same is true for Micronesia, where the prow and stern of the canoes end in two points which in a stylized form represent the forked tail of the frigate bird. On Truk atoll a sculpture representing a pair of sea swallows, very highly stylized, was fastened to the prow. The hull was also often decorated with rather crude figures painted in black, white, red, and sometimes yellow (see MICRONESIAN CULTURES).

In Indonesia, among the peoples that are at the ethnological level (Alfuri, Dayak, etc.), pirogue decoration is frequent. The large openwork prow ornaments are similar to those already mentioned in northwestern New Guinea. The geometrical motifs are also interesting (triangles, zigzag, circle with an inscribed star), as are the anthropomorphic representations painted on the sides of the beautiful boats of the Yami tribe on Botel Tobago, near Formosa (PL. 311), strangely similar to the representations of the Solomon Islands (see INDONESIA; INDONESIAN CULTURES).

In Africa boats are generally not decorated. The only notable exceptions are the large pirogues (up to 75 ft. long) used by the Duala tribe of the Cameroon coast. On the prow an ornament is fixed which continues its line and which is formed by polychromatic sculptures often representing a man flanked by two animals and preceded by a bird with a serpent in its beak. It is extraordinary how native artists succeed in fusing the complex realistic, stylized, and imaginary motifs into a homogeneous and balanced composition. Also deserving of mention are the boats used by the Haruro tribe of Lake Margaret (Ethiopia). These, though undecorated, in their slender and refined form call to mind the elegance of the Venetian gondola. Canoes and pirogues decorated mainly with polychromatic paintings are to be encountered among some coastal peoples of the Gulf of Guinea, such as the Bidyogo of the Bijagos Islands (see GUINEA), the Fanti of Ghana, etc. Other notable African boats include the royal pirogues of the Rotse tribe in Rhodesia (see RHODESIA, ZAMBIA, AND MALAWI), which are beautifully carved.

Among the American peoples at the ethnological level boats are undecorated, except in the area of the northwest coast, where, especially among the more northern native groups (northern Kwakiutl, Tsimshian, Haida, Tlingit), splendid pirogues are to be found decorated with sculptures in the round and polychromatic paintings. The two- and three-dimensional motifs are no different from those which stand alone or which are attached to other objects (see NORTH AMERICAN CULTURES). They represent anthropomorphic and zoomorphic figures or legendary beings, and understanding of them would very often be impossible without knowledge of the myths, legends, and iconographic symbolism of these peoples.

The larger craft, which were meant to be used for a longer period of travel and had therefore to function as living quarters, presented, because of their very size, different problems of decoration. An outstanding example of decoration for sheer ostentation were the Roman ships of Nemi. With luxurious internal fittings, mosaic pavements on the decks, and gardens with statues and ponds, they were less vessels than floating palaces. Similar in luxury in later times were the royal pleasure boats, such as that of Charles IV of Naples (PL. 319). The most magnificent example of a galley was the "Capitana nuova" of the Medicis, which was used in 1600 to take Marie de' Médicis to Marseilles on her bridal voyage (see M. Buonarroti the Younger, *Descrizione delle felicissime nozze di Madame Maria Medici, Regina di Francia*, Florence, 1600; and the paintings by Rubens in the Louvre). Another in this series of ceremonial showpiece galleys is the Bucintoro of the Republic of Venice (PL. 315; VII, PL. 101), designed for the annual ceremonial marriage of Venice to the sea, with its two lavishly decorated decks and groups of sculptured allegorical figures, including the figure of Venezia on the bow.

In contrast to the galleys, the wide-beamed sailing vessels designed for longer voyages (such as galleons and carracks) were equipped with high, ornate bows and aftercastles as early as the 15th century. These were often complex constructions in house or pergola form. The many high masts increased the splendidly showy character of these ships (see the model reproductions in Venice, Mus. Storico Navale). Descriptions of the aftercastles (Bosio, *Istoria della sacra Religione di San Giovanni Gerosolimitano*, Rome, 1594) make it evident that this was concerned with naval architecture only in its relation to ordinary architecture as applied to the various levels (decks), with galleries, balconies, and decorative gardens. This is to be compared with the castlelike superstructure derived from medieval architecture and applied to famous northern ships such as the *Great Harry* of 1523 (engraving from a painting of Holbein the Younger). However, as early as the 16th century there began the development of a more functional construction of both the interior and exterior of the hull of the ship, corresponding more closely to the demands of an operational sailing vessel. The proportions became more attenuated, the superstructure was reduced, the deck lines simplified; however, decorations of various zones of the fore part of the raised aftercastle, using reliefs or ornamental members, remained a characteristic of ship construction of the times. Note, for example, the stern of the *Sovereign of the Seas* (1637) with allegorical scenes arranged one above the other (Vocino, 1942), or the design of P. Puget (1667) for one of the royal French warships

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

(Marseilles; Mus. des Beaux-Arts). Basically this type of ship continued in use throughout the 18th and 19th centuries, while the galleys went completely out of fashion in the 18th century. The development of technique with its demands on rational and functional ship construction also put an end to the ornamentation of the ship from a solely decorative point of view. The style of construction determined by technical demands on the modern means of transport can no longer be considered under the aspect of art history. Since the time of the Bauhaus the esthetic problems of the industrial production of commodities, including the production of vehicles, has been a concern of industrial design (q.v.).

THE REPRESENTATION OF VEHICLES IN ART. The earliest representations of vehicles are of interest not so much for their artistic quality as for indications of the technological level attained. The pottery of the Naqada culture of Egypt shows many-oared ships complete with cabins, oars, and pennants, and boats are also shown on works from the predynastic period. While chariots did not appear in Egypt until the 18th dynasty, both ships and chariots continued to be important elements in recording the exploits of the Pharaoh as well as in tomb models (PL. 311; IV, PLS. 368, 369).

In the Far East the presence of boats is attested as early as the 3d millennium B.C. Simple types of boats furnished with oars or paddles frequently appear on pottery and bronze objects and in paintings and wall engravings in the tombs. More important as subject matter for art are the miniature boats in clay forming one of the various types of *haniwa*. One of the best known was found in a tumulus at Saito (Miyazaki), representing a boat with six banks of oars. In China ideograms for "boat" and "cart" appear on the oracle bones, but representation of these vehicles in art does not appear general until the 5th–4th century B.C. Again it is the tomb models which are of most interest (PL. 298; III, PL. 239).

Various models of carts and wagons have survived from Mesopotamian times. They also appear on vases and on the famous standard from Ur (VIII, PL. 77). Seals often bore representations of vehicles, particularly chariots; certain Cretan seals show ships with the sternpost ending in a zoomorphic figure or plant appendix. The oldest representations of Greek ships appear on the Dipylon vases (VI, PLS. 95, 96). One of the earliest representations of a three-masted sailing vessel is to be seen in the Tomb of the Ship (Tarquinia).

Representations of chariots and ships as well as of various kinds of wagons are to be found in Roman art and much of the knowledge of these vehicles is owed to their representation in scenes of battle, triumph, and commercial activities (PL. 311).

Interestingly enough, there is an almost complete lack of representation of wheeled vehicles in Islamic art, but beautifully decorated ships appear frequently.

From a technological point of view it must be kept in mind that the artist often gives a schematic or imaginary representation of a vehicle he may perhaps never actually have seen. This is particularly true of depictions of ships, in which the artist may tend to shorten the hull and to accentuate the curves, arbitrarily putting in or leaving out parts of the gear. This does not, however, detract from their importance as subject matter. Although vehicles were often treated decoratively by artists, they remained important primarily symbolically or as adjuncts to certain events until the 17th and 18th centuries. Ships and carts appeared in early Biblical scenes (IX, PL. 83) or in such depictions as that in the Bayeux Tapestry of William the Conqueror crossing the Channel (PL. 312), or they served to identify a specific site (e.g., Port of Classis, mosaic in S. Apollinare Nuovo, Ravenna), but they appeared only much later as themes in themselves. Ships, particularly naval battles or fleets in port, became a favorite theme for painters from the 17th century on. The same kind of animism that caused primitive peoples to consider their boats as people, as living organisms, and to decorate many of their other vehicles with apotropaic symbols may perhaps have survived in the imagination of the painters of relatively modern vehicles. The fascination that early steamboats (PL. 316) and locomotives held for 19th-century artists is a case in point.

For a short time balloon ascensions also provided the painter with inspiration. Not only was the whole event full of a sort of festive excitement, with the air of an outing, but the balloon itself was often gaily painted in designs quite in keeping with the period (PL. 318).

In recent times vehicles have often become the symbols of modern civilization; they have been the object of industrial design (q.v.) and have provided subject matter for posters and publicity.

BIBLIOG: *a*) General works: O. Nuoffer, Die Rennenwagen im Altertum, Leipzig, 1904; E. Saglio, DA, s.v. Currus, I, 2, pp. 1633–43; C. Torr, DA, s.v. Navis, IV, p. 24 f.; F. Belin, E. Assmann, P. Thomsen, and B. Meissner, RLV, s.v. Schiff, XI, pp. 240–54; E. Wahle, P. Thomsen, and E. Unger, RLV, s.v. Wagen, XIV, pp. 231–43; G. Pinza, EI, s.v. Biga, VI, pp. 986–87; P. Fraccaro, EI, s.v. Nave, pp. 341–43; M. Zuffa, EAA, s.v. Carro II, pp. 358–67; Compte Lefebure des Noëttes, L'attelage: Le cheval de selle à travers les âges, Paris, 1931; V. G. Childe, The Diffusion of Wheeled Vehicles, Ethnogr. archäol. Forsch., II, 1954, pp. 1–17.

b) Western Orient: C. Torr, Ancient Ships, Cambridge, 1895; C. Busley, Schiffe des Altertums, Berlin, 1919; A. Köster, Das antike Seewesen, Berlin, 1923; U. Popplow, Pferd und Wagen im Alten Orient, Berlin, 1934.

c) Egypt: G. Daressy, Une flottille phénicienne d'après une peinture égyptienne, RA, I, 1895, pp. 286–92; G. A. Reisner, Models of Ships and Boats, Cairo, 1913; W. Wreszinski, Atlas zur altaegyptischen Kulturgeschichte, I, Leipzig, 1914, pl. XVII, IV, 1939, pl. LXIX; W. Wreszinski, Löwenjagd im Alten Aegypten, Leipzig, 1932; G. Botti, Il carro del sogno, Aegyptus, XXXI, 1951, pp. 192–98.

d) Mesopotamia: A. Moortgat, Der Kampf zu Wagen in der Kunst des alten Orients, Orientalistische Literaturzeitung, XXXIII, 1930, cols. 841–54; A. Salonen, Die Wasserfahrzeuge in Babylonien nach sumerisch-akkadischen Quellen, Helsingfors, 1939; E. A. Speiser, Excavations at Tepe Gawra, I, Levels I–VIII, Philadelphia, 1935, pls. XXXIVc 1–4, XXXVa 2, XXXVI, I, LXXVIII; A. Salonen, Die Landfahrzeuge des alten Mesopotamien, Helsinki, 1951; H. Schmökel, Ur, Assur und Babylon, Stuttgart, 1955; A. Parrot, Sumer, Paris, 1960, figs. 5, 31, 91, 126, 164, 175–77, 181, 182, 227; P. Amiet, La glyptique mésopotamique archaïque, Paris, 1962 (in particular pp. 92, 104, 177).

e) Syria and Palestine, Anatolia, Cyprus, The Aegean: F. Studniczka, Der Rennenwagen im syrisch-phonikischen Gebiet, JdI, XXII, 1907, pp. 147–96; G. Contenau, Mission archéologique à Sidon (1914), Syria, I, 1920, pp. 37–43; G. Contenau, Un vaisseau de Tharsis sur un sarcophage phénicien, JA, 1921, pp. 168–74; A. Evans, The Palace of Minos, IV, 2, London, 1935, pp. 807–31; G. Contenau, La civilisation phénicienne, Paris, 1949 (2d ed.), pp. 177, 178, 214, 224, 234, 235; H. T. Bossert, Altsyrien, Tübingen, 1951, figs. 52, 57, 571, 736, 970; F. Schachermeyr, Streitwagen und Streitwagenbild im Alten Orient und bei den mykenischen Griechen, Anthropos, XLVI, 1951, pp. 705–53; A. Furumark, A Scarab from Cyprus, Opuscula Atheniensia, I, 1953, pp. 47–65.

f) Classical period: W. Helbig, Das homerische Epos, Leipzig, 1884, p. 96f; J. Marquardt, La vie privée des Romains, Paris, 1892, p. 39f.; F. Behn, Die Schiffe des Telephos Frieses, JdI, XXII, 1907, pp. 240–48; A. von Merklin, Der Rennenwagen in Griechenland, Leipzig, 1909; H. Nachod, Der Rennwagen bei den Italikern und ihren Nachbarn, Leipzig, 1909; M. Cagiano de Azevedo, I trasporti e il traffico, Mostra augustea della Romanita, Rome, 1938; H. L. Lorimer, Homer and the Monuments, London, 1950; G. Uccelli, Le navi di Nemi, Rome, 1950 (2d ed.).

g) Medieval and modern times: *Carriages*: L. Belloni, La carrozza nella storia della locomozione, Milan, 1901; H. Kreisel, Prunkwagen und Schlitten, Leipzig, 1927 (with bibliog.); C. Morazzoni, Carozzi e portantine a Napoli nel '700, Dedalo, VIII, 1927–28, pp. 752–81; F. di Carpadasco, Le carrozze pontificie, L'Illustrazione vaticana, II, 19, 1931, pp. 23–27; G. Galeati, La berlina di gala del Conte Magio di Cremona, Cremona, X, 1938, pp. 21–27; M. N. Boyer, Medieval Suspended Carriages, Speculum, XXXIV, 3, 1959, pp. 359–66; A. Omodeo, Pompa e carrozze, Antichità viva, I, 9, 1962, pp. 54–59. *Ships*: U. Nebbia, Navi dei tempi d'Andrea Doria, Dedalo, II, 1921, pp. 442–62; U. Nebbia, Antichi fanali veneziani, BArte, N.S., IV, 1924–25, pp. 49–69; G. C. Speziale, Il "Vascelluzzo," BArte, N.S., IX, 1930–31, pp. 217–24; G. C. Speziale, Navi medicee, Dedalo, XII, 1932, pp. 854–81; M. Vocino, La nave nel tempo, Milan, 1942 (with bibliog.).

h) India, Iran, Islam: see the bibliog. in the articles referred to in the text.

i) China: W. P. Yetts, Horse: a Factor in Early Chinese History, Eurasia Septentrionis Antiqua, IX, p. 231f.; Yoshito Harada and Kazuchika Komai, Chinese Antiquities (Shina Koki Zukō), 2: Vessels and Vehicles, Tokyo, The Academy of Oriental Culture, 1937; Minao Hayashi, Chariot in the Yin and the Chou Dynasties (in Japanese), The Tōhō Gakuhō, Kyoto, 29, March, 1959, pp. 155–284.

j) Japan: F. Tada, T. Nagano and N. Nacra, Kamo Iseki (The Footsteps of Kamo), Tokyo, 1952; Tokyo National Museum, Pageant of Japanese Art, I–II, Tokyo, 1952; J. Shimizu and Y. Kurata, Yayoi Bunka (The Culture of Yayoi), Tokyo, 1957; F. Miki, Haniwa, Tokyo, 1958; J. E. Kidder, Jr., Japan before Buddhism, New York, 1959; S. Noma, Haniwa, Tokyo, 1960.

k) Primitive world: A. Grimble, Canoe Crests of the Gilbert Islanders, Man, XXI, 1921, pp. 81–85; J. Hornell, The Ornaments and Decorative Carvings of Outrigger Canoes on the North Coasts of Netherlands New Guinea, JPS, XXXII, 1923, p. 70–78; W. W. Thorpe, A Tomako or Head Hunter's Canoe from the Solomon Islanders, Australian Museum

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Magazine, I, 1923, pp. 289–92; O. Turbott, A Carved Canoe Prow from the Marquesos, JPS, XLII, 1943, pp. 210–11; R. Linton and P. Wingert, Art of the South Seas, New York, 1946; M. Leenhardt, Arts de l'Océanie, Paris, 1948; M. Laroche, Notes sur quelques ornements de pirogue de la Nouvelle Guinee hollandaise, Baie de Wolkener, JSO, V, 5, 1949; J. Guiart, Océanie, Paris, 1963.

* *

Illustrations: PLS. 293–319.

VELÁZQUEZ, DIEGO RODRÍGUEZ DE SILVA Y. Spanish painter (b. Seville, June 4/5, 1599; d. Madrid, Aug. 6, 1660). That, as tradition has it, he was a pupil of Francisco Herrera the Elder has never been documented; in any event, this would have been before Dec. 1, 1610, when he started as an apprentice in the studio of Francisco Pacheco. The apprenticeship ended in 1616. On Mar. 14, 1617, after having been examined by the overseers of the town council, Juan de Uceda and Francisco Pacheco, Diego received his credentials and diploma as a painter; and on Apr. 23, 1618, he married the daughter of his master, Juana Pacheco, who bore him two daughters, Francisca (baptized on May 18, 1619) and Ignacia (b. 1621). On Feb. 1, 1620, Velázquez, now owner of a workshop, took into his service an apprentice, Diego de Melgar. In April, 1622, wanting to see El Escorial and other royal residences, Velázquez went to Madrid, armed with recommendations to such important personages as Luis and Melchor del Alcázar and Juan de Fonseca, chaplain of His Majesty's Chamber. The visit was brief, but was to be repeated a year later at the behest of the prime minister, Conde-Duque de Olivares. This time Velázquez, accompanied by Pacheco, lodged in Fonseca's house. In 1623, in August, he painted the portraits of Pacheco and Philip IV and that of the Prince of Wales (later Charles I of England) in September. As a consequence he was commanded to reside in Madrid in the future, and on Oct. 6 he was appointed court painter, with a salary of 20 ducats per month, aside from what he was paid for each painting.

In 1624 he established himself in Madrid. On Mar. 7, 1627, he was named *ugier de cámara* (usher of the chamber), and in the same year he obtained the prize in a competition for a large picture depicting the expulsion of the Moriscos. Between September, 1628, and April, 1629, he befriended Rubens, and together they undertook a trip to El Escorial. Immediately afterward Velázquez began to prepare for a long-desired journey to Italy. Royal permission for the trip was granted on June 28, 1629. Velázquez embarked at Barcelona and arrived in Genoa on Sept. 19. From there he went to Milan, possibly also to Verona; then to Venice, where he copied Tintoretto's paintings; and then to Ferrara, where he presented his credentials to Cardinal Sacchetti. In Bologna he was well received by Cardinals Ludovisi and Spada; he went from there to Loreto and finally to Rome. Francesco Niccolini, administrator of Villa Medici, recorded that on Apr. 30, 1630, the Spanish ambassador requested quarters for the painter. On May 4 Velázquez was installed in the villa, where he stayed for two months, until a bout of fever forced him to take refuge in the ambassador's own house. Velázquez next went to Naples, and from there, early in 1631, he returned to Spain, where the royal favors continued. On May 8, 1633, he was accorded the office of *alguacil de casa y corte* (constable of the royal household and the court), an honor yielding the sum of 4,000 ducats. On Oct. 3 Velázquez and Vincenzo Carducci (Vicente Carducho) appraised the portraits of the royal family painted by some minor artists of Madrid. In the following year his daughter Francisca was married to the painter Juan Bautista Martínez del Mazo, Velázquez' pupil and gifted assistant. At the end of July, 1636, Velázquez was made *ayuda de guardarropa* (assistant of the wardrobe), and until 1644 his activities were divided between his court duties and painting. In 1644 he followed Philip IV on a military expedition to Aragon, and in 1645 he accompanied Prince Baltasar Carlos on a journey to Saragossa. On Nov. 25, 1648, the King ordered Velázquez to Italy to acquire paintings and sculptures for the royal collections; he was to accompany the Duque de Nájera, who was going to Trento to escort the new queen, Mariana of Austria. Velázquez left Madrid on Nov. 8 but did not sail from Málaga until Jan. 21, 1649. On Mar. 11 he landed at Genoa; he visited Milan and Padua and arrived in Venice on Apr. 21. From there he went to Parma, Modena, Bologna, and Florence. He stopped in Rome and then proceeded to Naples, where he made his principal purchases of antique sculptures. He returned to Rome, where he painted the portrait of his attendant, Juan de Pareja (Longford Castle, Earl of Radnor Coll.); the portrait was exhibited in the Pantheon on Mar. 19, 1650, and was admired by all. He then painted the portrait of Pope Innocent X (PL. 324).

Philip IV, displeased by the prolonged absence of the painter, demanded his return, and Velázquez canceled his planned trip to Paris. On Dec. 12 he went to Modena and from there to Genoa, and in June, 1651, he landed in Spain. The royal favor continued more abundantly than ever. He was paid arrears of salary for two years, and on Feb. 16, 1652, he was named *aposentador mayor de palacio* (chief steward of the palace). This forced him to leave his old residence and move into the so-called "Casa del Tesoro" (Treasury House) next to the palace. In 1654 his daughter Francisca and his father-in-law died. In 1657 Velázquez wanted to go to Italy for a third time, but he was refused royal permission. He was generously compensated when on June 12, 1658, the king invested him with the Order of Santiago. The patents of nobility required for this honor were not entirely satisfactory, but Philip IV settled the suit by asking papal dispensation from Alexander VII. The dispensation arrived, and Velázquez was dubbed a knight on Nov. 27, 1659.

In the spring of 1660 Velázquez accompanied the court to Pheasant Island in the Bidassoa River, where Philip IV and his daughter María Teresa were to meet her bridegroom, Louis XIV. Velázquez left Madrid on Apr. 8 and arrived in Fuenterrabía on May 1; he returned to Madrid on July 26, exhausted by the voyage. On July 31, complaining of a high fever, he abandoned his duties at the palace and took to his bed. He died on Friday, Aug. 6, and was buried in the Church of S. Juan Bautista (destroyed in 1811).

The foregoing biography is that of a fortunate man, and it parallels that of his friend Rubens (q.v.). The inventories made after Velázquez' death proved that he had lived comfortably, almost luxuriously; his house was richly appointed with fine furniture and tapestries. His serene, swarthy, southern aspect and superb self-assurance are immortalized in two self-portraits — the one included in *The Family of Philip IV*, called *Las Meninas* (PL. 330), and the one in Valencia (Mus. Provincial de Bellas Artes) — that show a serious-looking gentleman, a nobleman by nature. Marco Boschini, who knew him, described him as a "*cavalier, che spirava un gran decoro, quanto ogn'altra autorevole persona*," at the same time noting his independent judgment when he declared how little Raphaels' paintings pleased him: "*A dire el vero (piasendome esser libero e sinciero) stago per dir che nol me piase niente.*" But there was always a certain measure of indolence beneath the assurance and self-control of his southern temperament, in which Andalusian and Lusitanian mingled. "*Ya conoceis su flema,*" Philip IV reminded the Spanish ambassador in Rome. It was because of this disposition and, in later years, because his duties at court took much of his time that Velázquez painted little. Other details confirm his self-assurance, which was the product of an extraordinary mental balance. Velázquez' library, although not large, was certainly superior in quality to those of his colleagues: it contained a few devotional books, some volumes of poetry, and books on divination, mechanics, medicine, horsemanship, hunting, and mathematics; others by Aristotle, Horace, Ovid, Ariosto, and Castiglione; and, finally, works by Pliny, Vasari, Vesalius, Dürer, and Juan de Arfe, as well as a large collection of treatises on architecture by Vitruvius, Leon Battista Alberti, Vincenzo Scamozzi, Sebastiano Serlio, Francesco dall'Abacco, P. Cataneo, Andrea Palladio, and Giacomo de Vignola. Although Velázquez did not introduce an abundance of architecture into his works, he well understood that this art was the definer of plastic balance. Such a respect for the moderating and regulating power of architecture in a man who so seldom

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

employed it for backgrounds indicates a solid Renaissance schooling. It is here that one detects the rigorous teachings of Francisco Pacheco. From the time of Pacheco to the present the esteem in which Velázquez has been held has not varied, except for that interval in the 1800s and in the romantic era when another Spanish painter, Murillo, was exaggeratedly evaluated. During this period any painting of an interior in some degree of shadow in which rustic figures appeared was considered a work by Velázquez; well into the 19th century mediocre works were attributed to him, with the consequent lowering of the value of his paintings. Only later did new genuine pictures by Velázquez appear, permitting much more complete studies of his artistic personality. The study of Velázquez and his work is thus a 20th-century science: the earlier body of criticism, after the clear memory of Velázquez as a person had dimmed in Madrid, incorporated so many errors and created such confusion that the study of his work has had to be totally reevaluated. It must be borne in mind that of the 130 pictures that today constitute his *catalogue raisonné*, 25 or 30 were discovered and analyzed in the 20th century.

As an apprentice in Pacheco's studio in Seville Velázquez had to undergo a hard and rigorous course in drawing. Pacheco himself was a mediocre painter (cf. XII, PL. 376), totally lacking in inspiration and imagination; but he had absorbed the more lasting principles of the mannerist school, and he admired Caravaggio, whose work he scarcely knew, eulogizing him as a "bold imitator of the natural." There is no reason to assume that Velázquez himself could have known the work of Caravaggio during his Sevillian period, and when he might have known it later, in Madrid or Italy, his esthetic sense was too firmly set to admit such influences. The sharply profiled outlines, which Velázquez rapidly lost after his Sevillian period, are not enough to be considered Caravaggism.

The criticism of two centuries has not improved on the evaluation of *The Water Seller of Seville* (London, Wellington Mus.) by Anton Raphael Mengs, who in a letter observed that the very imitation of the natural gave the painting a certain "hardness" and "dryness." But even with this hardness, it is the most important painting of this period, a forerunner of the *aldeanillo* (village boy) figure of whom Pacheco speaks and whom Velázquez drew in numerous versions. The *aldeanillo* is present in the *Old Woman Frying Eggs* (1618; Edinburgh, Nat. Gall. of Scotland) and in the *Adoration of the Kings* (1619; Prado). The charming and anonymous model always appears with angular and rough features, characteristic of this period before 1623. Other more beautiful models of the same period also reappear: thus the youthful Mary in the *Immaculate Conception* (ca. 1619; London, Mrs. Woodall and the Misses Frere Coll., on loan to Nat. Gall.) could well have been Pacheco's daughter — in fact, Pacheco filled in the background and drew the outline of the figure. Notable in all the work of this period is a feverish desire to render every detail faithfully and to be sure that nothing of the true content is lost. What began as an exercise, which basically consisted of grouping figures and several inanimate objects, turned into habit, as is evident, for instance, in the scheme of *The Breakfast*, in the versions in Leningrad (The Hermitage), Budapest (Mus. of Fine Arts), and London (Wellington Mus.); in *Three Musicians* in Berlin (Mus. in Dahlem); in the *Christ in the House of Martha and Mary* in London (Nat. Gall.); in the *Christ at Emmaus* (also known as *La Mulata*) in Russborough, Co. Wicklow, Ireland (Sir Alfred Beit Coll.); and in *The Servant* (VI, PL. 71).

All this was a novelty in Spain, and Palomino (1724) commented that Velázquez did it "to differ from others and follow a new course" and that instead of emulating Raphael he preferred to be "first in this vulgarity rather than second in delicacy." A. Vegue y Goldoni ("Un lugar común e la historia del arte español: El cambio de estilo en Ticiano, Navarrete, el Greco y Velázquez," in *Archivo español de arte*, Madrid, 1928, IV, pp. 57–59) has shown that the same criterion had been applied to Titian, Navarrete, and El Greco. And the novelty was relative: Pablo Legote and Francisco Herrera the Elder also painted folk types more or less in conjunction with *bodegones* (genre scenes). Furthermore, in these early pictures of the Sevillian period Velázquez had already begun a personal mode of expression to which he was to remain constant for many years; he juxtaposed two distinct spheres of action in one canvas — one in the foreground, given heightened significance, the other in the distant background but expressive in its narrative message. In the London *Christ in the House of Martha and Mary* (ca. 1622) the foreground is occupied by a young girl and an old woman preparing a meal, while the scene with Christ preaching to the two sisters is placed in the background in an almost arbitrary manner. In the *Christ at Emmaus* in the Beit Collection, the servant, in the foreground, busies herself with the preparations while in the background is the scene of Christ with the disciples. The transition between the foreground and the background is executed with a certain heaviness and a precarious narrative continuity but with a logical balance of light and dark areas. This preoccupied Velázquez during his entire career, and it reemerged, handled with surpassing mastery, in his late period, especially in depicting the fable of Arachne in *Las Hilanderas* (PL. 332; II, PL. 193).

In speaking of this first period Palomino insisted that Velázquez imitated El Greco in his portraits. This is an obvious absurdity, as young Diego could not possibly have known anything about El Greco before his first trip to Madrid in 1622. And before this date he had done portraits, for the *St. Thomas* (Orléans, Mus. B. A.) and the *St. Paul* (Barcelona, Mus. de Arte de Cataluña) are indeed portraits. From this period are also the *Portrait of a Man* (Prado); the portrait of Don Cristóbal Suárez de Ribera, in the Church of S. Hermenegildo in Seville; and those of Sister Jerónima de la Fuente, two versions in Madrid (Prado; Fernández de Araoz Coll.) and one in Derbyshire (Tissington Hall, William Fitzherbert Coll). Although these works have certain similarities, the Prado portrait of the nun (1620) is perhaps the most characteristic and the most closely related to the technique of the *bodegones* in its concise characterization. It is possible that had Velázquez remained in Seville, exempt from the numerous later influences, he would not have transcended the dark and contrasting manner that he adopted in 1619 with the *Adoration of the Kings* (Prado). This picture reveals a paucity of imagination that appears to be a carry-over from his master, Pacheco; with a theme so rich in possibilities, Velázquez concerned himself only with the placement of certain figures — here the *aldeanillo*; there the old king, an unmistakable portrait of Pacheco; then one of the gift bearers, an obvious Andalusian gypsy; the Virgin, a portrait of Juana Pacheco, and the Child, the little Francisca. Strangely enough, in only one picture of the Sevillian period does Velázquez rise above this imaginative rut; in the *Christ at Emmaus*, in New York (Met. Mus., Altman Coll.), he still groups figures with harsh realism, but they are contrasted with the luminous figure of Christ. Here there is no trace whatsoever of the presumed influence of Caravaggio.

Velázquez saw clearly that the only outlet for his inborn force lay in Madrid; Pacheco, too, realized this and made the trip possible by resorting to his influential friends. It is certain that during this first trip Velázquez became acquainted with pictures by El Greco. Velázquez' *Investiture of St. Ildefonso with the Chasuble*, in the Archbishop's Palace, Seville, dates from the period (1622–23) between the two trips to Madrid; from the first of these trips, the portrait of Luis de Góngora (Boston, Mus. of Fine Arts) retains some of the Sevillian hardness, considerably attenuated and softened by looser treatment. But the radical change of style is seen in the *Investiture of St. Ildefonso with the Chasuble*, indeed a strange picture, with violent light and restrained shadow in which, not too felicitously, the image of the Virgin is repeated seven times from the same model, who must have been the wife of the artist. J. Allende-Salazar (1925) was the first critic to see in this work definite influences, although poorly assimilated, of El Greco. Later these influences were to become stronger, not so much in the iconography or in the lighting as in the technique.

From here on Velázquez' works are clearly separated from the Sevillian prologue. When he triumphantly entered the Madrid court and began to portray the monarch, the doors to the palace were flung open and with them the royal art col-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

lections. The palace in Madrid was full of works by Venetian masters, in particular Titian, whose influence Velázquez was never to deny. But what the young Sevillian first learned was sobriety, practically required of the royal portraitist. Velázquez placed his models, lighted from the left, before a neutral background, with no other element but the end of a table. The colors were neutral, muted, and still; the profusion of details that only a few years earlier formed part of Velázquez' compositions disappeared. The result is that these portraits leave a certain impression of delicacy and fragility, although the one of the Infante Don Carlos (XIII, PL. 150) must always be counted among the most perfect examples of masculine portraiture.

But Velázquez' success at court did not protect him from criticism, especially from practitioners of the Italian school of painting in Madrid, among them Angelo Nardi, Eugenio Caxés, and Vincenzo Carducci (Vicente Carducho). Carducci, a writer of treatises as well as a painter, entrenched in the restraining norms of mannerism, attacked Velázquez openly in two passages of his *Diálogos de la pintura* (1633), calling him unschooled for the imperfections he regularly portrayed, adducing the strange reasoning that the "great and eminent painters were never portraitists," and adding that he worked more "from natural impetus than from studies." It was, in fact, a miracle for a 24-year-old man to have triumphed so quickly in Madrid; and his preeminence was officially established in 1627 by his victory over Carducci, Caxés, and Nardi in the competition for a painting depicting the expulsion of the Moriscos by Philip III. The winning picture was destroyed by a fire in 1734, and it is known only from a brief description by Palomino. From this same period, before the first journey to Italy, the following portraits are preserved: two of Philip IV (Met. Mus.; Prado), one of the Bourbon queen Isabel (Madrid, Trauman Coll.), three of the Conde-Duque de Olivares (São Paulo, Mus. d'Arte; London, private coll.; New York Hispanic Society), and others of unidentified persons, one of which is thought to be a self-portrait.

The masterpiece of this period is the celebrated *Drunkards*, or *The Triumph of Bacchus* (PL. 322). The first title is better and more fitting than the second, for whatever mythological meaning can be given to the picture is far removed from the sharp realism it conveys. This painting is, in a way, a regression to the tavern and kitchen scenes (*bodegones*) of the Sevillian period, except that it denotes a hitherto unmanifested influence, which E. Lafuente Ferrari (1943, 1944) with reason supposes to have come from Rubens. C. B. Curtis (1883) with fine perspicacity praised the act of "seizing a laugh and fixing it on the canvas without converting it into a grimace" as an "unparalleled triumph of skill." And C. Justi (1889), although he praised the picture, was surprised by the meagerness of the space, by the bareness of the sky (which was left unfinished), and by the agglomeration of figures. A. de Beruete (1898), who did not admire the composition, concluded sagely that Velázquez had thought of each figure separately, resulting in an ensemble with a forced and artificial over-all look. Later, two illustrious writers, José Ortega y Gasset and Eugenio d'Ors, agreed in their commentary on this vulgarization of mythology. "The bacchanal turns into a drunken bout. . . . There are no gods," said Ortega (*Notas*, Madrid, 1900, pp. 85–86); and D'Ors added: "But art redeems all; when it converts a god into a picaresque figure, it, in its way, immortally elevates the picaresque figure into a god" (1963, p. 55). About this composition, which definitely closed one of Velázquez' periods, D. Angulo Iñiguez (1947) has wondered if the left-hand part was not partially inspired by the similar postures to be observed in Titian's *The Bacchanal* (PL. 93).

The trip Velázquez made to Italy in 1630, above all a study trip, marked the beginning of a new period. During his stay in Venice, Rome, and Naples Velázquez strengthened his identification with Venetian painting, assessed Ribera's fusion of this active realism with the Italian, and was exposed to the classical nude. The discovery of the classical took precedence over all else, and its influence is evident in the two magnificent works of 1630, *The Forge of Vulcan* (PL. 321; VII, PL. 386) and *Joseph's Bloody Coat Brought to Jacob* (PL. 322). However, the seduction of the classical was not accompanied by a taste for the mythological: Velázquez never came to regard the gods of paganism as other than mortals, and his greatest concession was in *The Forge of Vulcan*, with Apollo entering Vulcan's smithy to inform him of the infidelity of his wife. Everything else is realism, in both paintings mentioned above, but with the great novelty of some perfectly observed nudes. Speaking of the nude figures in the *Joseph's Bloody Coat Brought to Jacob*, Francisco de los Santos (*Descripción breve del Monasterio de S. Lorenzo el Real del Escorial . . .*, Madrid, 1657) said that they were drawn "with such art and character that they could serve as examples for anatomy." The composition in both paintings is one of extreme freedom, diametrically opposed to the agglomeration of figures in the *The Drunkards*. D. Angulo Iñiguez (1947) has pointed out that the smith in *The Forge of Vulcan* repeats the position of a centurion in El Greco's *Martyrdom of St. Maurice and the Theban Legion* (VI, PL. 459) and that the general ensemble of the *Joseph's Bloody Coat Brought to Jacob* derives from Dürer's print of *Christ Before Caiaphas*. C. Justi (1889) thought that the two landscapes of Villa Medici (Prado; PL. 323) were painted during this first stay in Italy, the reason being that the villa had then been his residence. But it would have been too whimsical even for Velázquez to express himself at the same time in the classical contour of sculptural nudity and also in the rapid idiom of "impressionism." Later reference will be made to this pair of landscapes. It is more certain that this trip produced the portrait of the Infanta of Spain, Doña María, Queen of Hungary (Prado).

It is likely that on Velázquez' return to Spain he was sent to Orihuela to paint *The Temptation of St. Thomas Aquinas* (Orihuela, Mus. Diocesano). It was E. Tormo y Monzó (1910) who brought it to light, attributing it to an obscure Murcian painter, Nicolás de Villacis; but J. Allende-Salazar (1925) catalogued it as a work by Velázquez. Painted with admirable facility in some parts — almost Goyaesque in the figure of the temptress — this painting marks the first instance of native audacity that Velázquez permitted himself on returning to Spain after having resided in an atmosphere of concentrated classicism.

The long span of 20 years as a courtier, between the two journeys to Italy, constitutes a great period in Velázquez' career, prodigious in portraits and single figures but scarce in large compositions. The paintings of this period are the most typical of Velázquez, equally far from the hardness of the Sevillian prologue and from the "impressionistic" splendor of the last ten years. During this middle period Velázquez executed 60 paintings, which made up almost half of his lifework. It is well to remember that these years were, at the same time, those of the disintegration of the monarchy and the political hegemony of Spain; but none of this is reflected in Velázquez' work.

From this period of creative fullness, the few pictures with religious themes, constituting a very limited series, have given rise to disquisitions about the religious and mystical sentiments of the artist. F. J. Sánchez Cantón Oviedo (1943) has written at length of Velázquez' spirituality; but his interpretation appears to be erroneous, for no Spanish painter of the 17th century was less attracted than he by sacred themes, which to him were as far removed and strange as mythology. That he was a practicing believer like almost all Spaniards of his century is beyond doubt, but this does not exclude an insensitivity to the mystical, in strong contrast to his friend Francisco de Zurbarán (q.v.). In any case, his most important creation of a religious subject is his *Christ on the Cross* (PL. 325). This theme was interpreted hundreds of times in Spain during that century, but Velázquez' reduction of the subject to a geometrically skeletal form is unique. The picture is a noble creation above the trivia of iconographic preoccupations advanced by Pacheco, who, as a functioning *asesor iconístico* (assessor of iconography) for the Office of the Inquisition in Seville, upheld the necessity of representing Christ fastened to the cross by four nails, one for each of the extremities; he had affirmed this thesis with a mediocre *Crucifixion* of his own (Madrid, Gómez-Moreno Coll.). But although Velázquez followed the iconographic lesson of

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

his father-in-law, the result was completely different; in Velázquez' painting the detail of the four nails is unimportant and easily forgotten before the naked solitude of the dead Christ. Another painting by Velázquez of the same great theme, which came to light not many years ago in the Convent of the Bernardas Recoletas in Madrid (now at the Prado), appears to be an earlier version; it is smaller in size.

The *Christ after the Flagellation Contemplated by the Christian Soul* (PL. 320) is a picture without history and practically without mention in critical works; it became part of the collection of the National Gallery, London, in 1883 but was not correctly interpreted until 1904, when Friedrich Schneider recognized it as a representation of the vision of St. Bridget of Sweden, a subject not unknown in Spain. The existence of an analogous picture by Juan de las Roelas in the Church of la Encarnación in Madrid has been mentioned; Roelas's picture is much less beautiful than Velázquez' and certainly not so unusual in composition, nor is it divided into two distinct sections. In Velázquez' canvas the figure of Christ is, in fact, a study of the nude, painted perhaps on Italian models; the beautiful boy is undoubtedly a portrait of someone close and familiar; and the angel, as D. Angulo Iñiguez (1947, pp. 83–85) has shown, is copied from Dürer's print, *The Angel with the Key of the Bottomless Pit*, although the figure is reversed.

About 10 years later Velázquez painted *St. Anthony Abbot and St. Paul the Hermit* for one of the hermitages located at the Buen Retiro. Because of its style it is a work of disputed chronology; A. L. Mayer (1913) dates it latest, as not before 1642. The controversial point in this canvas is its medieval conception, which follows the custom of representing, in one painting, various consecutive scenes of a hagiographic cycle. In the background St. Anthony is depicted with the centaur and the satyr; then he is shown calling at the grotto of St. Paul. The principal scene, that of both saints together, chronologically precedes another of the secondary scenes, that of St. Anthony kneeling before the dead body of his friend. These are iconographical elements that could have composed a Gothic panel, and it is surprising that Velázquez, so little given to fictions removed from immediate physical reality, could have arrived at this extraordinarily anachronistic medievalism. In this devotional picture the landscape, which occupies seven-eighths of the space, is rendered in delicate blue and green tones, with a subtlety and exquisiteness of palette seldom attained by the great artist. Here once more the Italian memories prevail, in the repetition of one of the compositions of Pintoricchio in the Borgia Apartments in the Vatican.

Velázquez' last picture with a religious subject is *The Coronation of the Virgin* (Prado), also of disputed date but which, in the opinion of J. Allende-Salazar (1925), should be placed about 1641 or 1642. Its scheme is hardly original, but it does follow the formula recommended by Pacheco for such iconography. It is possibly the least original painting by Velázquez; notwithstanding the central and bilateral arrangement of the sacred figures, the first glance calls to mind the same subject by El Greco and by Dürer (the latter in one of his prints), as pointed out by D. Angulo Iñiguez. More recently M. S. Soria (1953) has shown the close dependence of the Velázquez version on two prints, one by Jan Sadeler from an original by Marten de Vos and the other, possibly also a vulgarization of the De Vos, by Karel von Mallery. This work makes use of intense, bright tonalities, contrasted in an almost violent manner, exulting in a masterful boldness of palette and sureness of brushwork. The six small angels that surround Mary are of little account beside the severe and utterly serene truth with which Velázquez, with the tools of the true portraitist, depicts the Virgin, Christ, and God the Father. The great sacred integrity of the picture arises from the same dignity that is found in the portraits.

This decorum, this exalted sense of dignity, was at its greatest in *The Surrender of Breda* (*Las Lanzas*; VII, PL. 276). But before discussing this masterwork, other works that date from the same time must be mentioned, such as the splendid equestrian portraits of King Philip IV, Queen Isabel of Bourbon, and Prince Baltasar Carlos (PL. 326). In these canvases, the gallantry of the riders and the vigor of the horses, outlined against the limpid mountain landscape of the Sierra de Guadarrama, are worked out with large, sober, rigorous brushstrokes, so masterfully calculated that even the unconcealed pentimenti on the hind feet of the king's horse give an extraordinary suggestion of reality. It should be noted that the Spanish painter has always been concerned mainly with the human and the divine, paying little attention to the animal world and the landscape. With these equestrian portraits Velázquez revolutionized this traditional attitude; the horses in these paintings and the bluish landscape, so exquisitely delicate in tonality, of the Madrid mountains are as important as the riders. These portraits were much admired by Manuel de Gallegos in his *Silva topográfica* (1637). Another, very similar portrait, the one of Conde-Duque de Olivares on horseback (PL. 326) shown as a general in action, is considered to be of later date on the supposition that the battle seen in the distance refers to the siege of the plaza of Fuenterrabía in 1638.

The royal equestrian pictures were painted for the Palacio del Buen Retiro, where a large room was to be decorated with battle scenes of military triumphs gained during the reign of Philip IV. The themes to be painted were distributed among various artists: Zurbarán, Jusepe Leonardo, Carducci, Antonio de Pereda, Felix Castello, and G. B. Mayno collaborated according to their abilities. The direction of the series appears to have been entrusted to Velázquez, who reserved for himself the task of depicting the most celebrated of these triumphs, the capitulation of Breda in 1625. Velázquez had never seen Flanders, but for the veracity of the detail in the projected picture he counted on the victorious general, Ambrosio de Spínola, in whose company he had traveled to Italy in 1629.

Very simple in composition, *The Surrender of Breda* shows only the two general staffs of the contending armies behind the leading generals, the victorious and the vanquished. Maurice of Nassau is bowing and delivering the keys of the city to Ambrosio de Spínola. In the background an armed company marches by, and the city is seen in the distance. There is a parallel between this canvas and the play by Pedro Calderón de la Barca, *The Siege of Breda*, dated ten years earlier, immediately after the event. C. Justi (1889) and later E. W. Hesse (1951), studying the relation between the two works, deduced that Velázquez was familiar with Calderón's drama; the cordial meeting and conversation between the two generals had an illustrious literary precedent. The sources of the compositional scheme have been studied and recognized: J. Meier Graefe (1923) determined that the groups on the right side, supposedly somewhat altered, came from an analogous scheme in El Greco's *Expolio*, or *Disrobing of Christ*. D. Angulo Iñiguez (1947) detected precedents in Veronese's *Christ and the Centurion* and in Rubens's *Meeting after Nordlingen*. The entire composition, as P. Jamot (1934) demonstrated, is derived from *The Encounter between Abraham and Melchisedech*, one of the engravings by Bernard Salomon illustrating the *Quadrins historiques de la Bible*, by Claude Paradin, published in Lyons in 1553. Clearly visible in the engraving is the field of upright lances described by Calderón; these spikes of steel are so characteristic of the painting that it has come to be popularly known as *Las Lanzas* (The Lances).

A. Borelius (1949) recognized that the city of Breda, seen in the distance, was faithfully copied from an engraving in *Obsidio Bredana*, by Hermannus Hugo, a work published in Antwerp in 1629; Velázquez knew the engraving directly through the version that Pieter Snayers presented in his *Taking of Breda* (Prado). In spite of the numerous sources, Velázquez recreated the event with prodigious originality. Although he was personally unfamiliar with the Low Countries, he recreated a Dutch landscape with exact fidelity; and although he had never taken part in a military action, he succeeded in conveying, in the background of the picture, the terrible reality of the anguish that follows a great battle. Finally, facing the difficult theme of the meeting between a victorious soldier and a defeated one, Velázquez painted a scene of noble and seignorial magnanimity, weighted with psychological and emotional values. Most important of all, however, in *The Surrender of Breda* are its figural

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and technical aspects: the rich color; the powerful drawing; the unsurpassed collection of portraits; the natural attitudes; the masterful composition that keeps the keys to the city, the principal symbolic element, in the center of the picture, profiled against a light background. In the effort to make everything authentic, no detail was overlooked; Velázquez devoted as much attention to the secondary as to primary elements in his paintings, even at the midpoint of his career. The care for each small object continued, as in his early *bodegones*, but was refined and enriched by the artist's subtler perception. In 1655, when he painted *The Surrender of Breda*, Velázquez, scarcely 36 years old, had already reached his peak, and although he continued to gain in mastery, *The Surrender of Breda* remains an incomparable feat.

To this period belong numerous portraits in which the figure represented — whether the king, a prince, a court jester, or a dwarf — was always observed with the same impassive objectivity. The portraits (more than a dozen) of jesters and dwarfs, no doubt executed on royal commission, include those of Diego de Acedo (Prado), Sebastián de Morra (PL. 327), Antonio el Inglés (Prado), Juan de Calabazas (Calabacillas; XI, PL. 219), and Francisco Lezcano (Prado). In these portraits Velázquez was concerned mainly with the essential characteristic and with the outline of the figure; and perhap because of the difficulty in posing these unfortunates, he was forced to sharpen his gift for observation: some of these pictures show many corrections, others are unfinished, and one — the portrait of Antonio el Inglés — was provisionally attributed by Allende-Salazar (1925) to J. Carreño de Miranda.

Also from this period, or shortly before, are portraits of King Philip, Cardinal-Infante Fernando, and Prince Baltasar Carlos (all, Prado) at the hunt, seen against the landscape of El Pardo and the Sierra de Guadarrama; Velázquez was in fact the first painter to grasp the beauty of this vigorous mountain landscape. More important and successful portraits followed: that of the Duke of Modena, Francesco I d'Este (PL. 327), a profound and flattering likeness painted in Madrid toward the end of 1638; that of the great sculptor Juan Martínez Montañés (Prado), portrayed in the act of modeling a bust of Philip IV; that of Cardinal Borgia, known only through the preparatory drawing in the Academia de S. Fernando in Madrid and through several studies; that of Cardinal Astalli (known as Cardinal Pamphili; New York, Hispanic Soc.); and the fine portrait of the King during the military expedition of Fraga (New York, Frick Coll.).

Velázquez seemed able to appraise models of varying social conditions with the same degree of mental concentration and self-discipline, just as he did not establish clear-cut distinctions between classical and Christian divinities, seeing in both no more than their human incarnation. It is not known whether the dissolute man in the *Mars* (Prado) conceals a strong criticism of mythology or masks a ruffianly personality; or whether the *Menippus* and *Aesop* (both, Prado) are more than figures out of the picaresque life of Madrid. In this manner of portraiture Velázquez scarcely seems to belong to the baroque era; he leaves kings and dwarfs alike deprived of background as if to isolate them in solitude. J. Ortega y Gasset's analysis (1944) is expressed in the statement that "the repose of Velázquez is obtained and sustained to the end, thanks to a constant tension, indeed, to an unceasing struggle against his whole century."

A similar antibaroque attitude in Velázquez is manifested by his few paintings of animals and landscapes, subjects that, as already indicated, were almost totally foreign to Spanish painting. It is not to be supposed that these subjects were favorites of Velázquez; but as a servant of the king he could not refuse any commission, and with Philip IV's extravagant addiction to hunting there was ample opportunity to paint hunting scenes and animals, such as the *Head of a Stag* (Madrid, Vizconde de Baiguer Coll.). *La Tela Real*, or *Philip IV Hunting Wild Boar* (London, Nat. Gall.), shows the types of human landscape, swelling with action and full of life, that is the most characteristically Spanish version of this genre. Given by Ferdinand VII to Lord Cowley, this painting was considerably restored after being damaged in the palace fire of 1734. One of Velázquez most captivating works, it was possibly done in collaboration with his son-in-law, Juan Bautista Martínez del Mazo. This collaboration, indicative of the important stature of Martínez del Mazo, is evident in another masterful landscape by Velázquez, the *View of Saragossa* (Prado). Here, however, although the collaboration is generally recognized, there is no agreement as to the attribution of the different parts. A. de Beruete (1898) and J. Allende-Salazar held that the figures in the foreground were by Velázquez, while the landscape itself, which W. Stirling-Maxwell (1855) considered an anticipation of Canaletto, was the result of Martínez del Mazo's collaboration. At present the contrary opinion seems to hold: the sunny background of the Aragonese city is so masterfully executed that it should be attributed to Velázquez. Nevertheless, most of the figures in the foreground also merit this attribution.

The study of the gradual development of Velázquez' style must follow a chronological order, because, if his complicated formative period (which ended in 1630 during the first voyage to Italy) was followed by a long period of mature development, then only in 1649, beginning with the second voyage to Italy, did the search for a personal style begin, a theory not sustained by observation of the artist's personality. It is true that his brushstrokes grew freer, gaining in assurance and precision, and that his color sense was perfected, so that he dispensed with impasto, letting each hue stand by itself in individual dots of color. All this, however, does not suffice as an explanation. Velázquez, in his personal artistic development, was discovering impressionism, which the more perspicacious of his contemporaries had already noted in his style. As early as 1629, Francisco Gómez de Quevedo (little versed in questions of art but a wise observer), in his *Al pincel*, had spoken of the *manchas distantes* in Velázquez' works. Before the second trip to Italy, this "separate spot" technique, known in modern terminology as divisionism, was already recognized as the essence of a personal style. Obviously this style needed to be developed, and this was realized with the second voyage to Italy.

During his second Italian journey Velázquez produced some exceptional works: the portrait of Pope Innocent X (PL. 324), the one of Juan de Pareja, and the two landscapes of Villa Medici (PL. 323). The first one chronologically (1650) is the portrait of Juan de Pareja, the servant who accompanied him on the trip — a servant, but also a colleague, whose style differed so from that of the master that he cannot really be called a pupil. (In fact, except for half a dozen pictures signed by Pareja, little is known about him). Velázquez painted this portrait before that of the Pope to "loosen up the hand," which implies that for a year and a half, since he had begun preparations for the voyage, he had not been at work. Exhibited at the Pantheon in Rome, the portrait of Pareja aroused great interest; even beside the brilliance of the red that lights up the portrait of Innocent X, the Pareja portrait is in no wise inferior. The latter is a more precise and strict portrait, manifesting the close relationship between the artist and the model, while the Doria Pope appears more introverted and retired, as he must have seemed to Velázquez during the brief audience granted. Innocent X, then 75 years old, was a secretive and reserved old man, often vulgar and surly. All this was caught by Velázquez in the time allowed for the sitting, short but enough to fix the traits of the stubborn head so well that it coincides completely with the bust by Bernini (II, PL. 277), even though the latter was more kind to his model. The extraordinary portrait seems painted without beginning or end, in a moment of inspiration. "It has the enchantment of the immediate," said C. Justi (1889) perspicaciously. Much later, Reynolds (in a letter dated June 23, 1786, to the Duke of Rutland) judged it "one of the first portraits in the world," a judgment that refers not only to the force of the physical portrait but also to something for which the great English painter himself strove, the unsought-for pomp that envelops the Pope — unsought for, because the old Doria Pope merely consented to sit at ease in his armchair before the Sevillian. Even a quick glance at this marvelous picture will reveal the mastery in the nuances of the reds of the cape, biretta, and chair and the white of the alb. "Too real" seems to have been the comment, half-satisfied and half re-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

proachful, of the Pope; but he did not fail to reward the painter, giving him a gold medal, with his effigy in half-relief, on a gold chain. Palomino, who supplies this information, adds that Velázquez took a copy of this portrait with him to Spain; possibly this copy is the one formerly in The Hermitage, Leningrad, and now in the Mellon Collection of the National Gallery, Washington, D.C.

The two landscapes of Villa Medici (both, Prado) were for a long time thought to be works from the year 1630, simply because Velázquez had resided in that palace during his first stay in Rome. C. Justi upheld this dating, but V. von Loga, in his translation (1909) of A. de Beruete's book on Velázquez, called attention to the fact that the loose and synthesizing brushstroke, the concept of the work (more like a color sketch), and the interplay of light correspond to a more advanced period that could only be the year 1650. This opinion was upheld by A. L. Mayer (1913), J. Allende-Salazar (1925), E. Tormo y Monzó (1940), and E. Lafuente Ferrari (1943). Surely Velázquez went back to visit his residence of twenty years before and was captivited by the splendid panorama of cypresses seen through the loggia and by the contrasts offered by the beautiful Renaissance architecture against some rough scaffolding and boards. Lafuente Ferrari has given these two pictures, alike in size and in concept, the titles *Morning* and *Evening*, according to the dominant lighting of each picture.

Both these pictures are valuable intimations of Velázquez' capabilities had he been free of his palace duties, which also prevented a longed-for trip to Paris. During the next ten years Velázquez, with increasing excellence, painted no more than two pictures a year on the average, perhaps because, in his undeviating search for perfection, he retouched and corrected previous works, the majority of which were always accessible to him in the palace. At present it is thought that Velázquez himself retouched and perfected his own finished works, which for this reason present difficult problems of chronology.

These problems are totally absent in his work of the last ten-year period, some 20 paintings, for the most part somewhat repetitious court portraits: three likenesses of Queen Mariana of Austria (Prado; Paris, Coll. Maurice de Rotschild; Lugano, Switzerland, Thyssen-Bornemisza Coll.), four of the Infanta María Teresa (Met. Mus., Jules S. Bache Coll.; New York, R. Lehman Coll.; Louvre; Vienna, Kunsthist. Mus.), and five of the Infanta Margarita (II, PL. 190; two others, Vienna, Kunsthist. Mus.; Prado; Louvre). In addition there are two portraits of Philip IV (Prado; London, Nat. Gall.) and a portrait of the little Prince Felipe Próspero (PL. 328).

To this period (1651) belongs one of Velázquez' most impressive works, *The Toilet of Venus* (*The Rokeby Venus*; PL. 329), which was formerly thought to be connected with the *Mercury and Argus* (1659; Prado). This last was an overdoor for the Hall of Mirrors in the palace, where it was accompanied by similar ones, now lost (*Psyche and Cupid*, *Venus and Adonis*, *Apollo and Marsyas*); Argus, badly lit in the darkness of the cave, appears with indistinct features, not even half sketched, but suggested with such precision that the beholder supposes them to be there and sees them.

It was formerly believed that *The Toilet of Venus* was another overdoor for the palace, but in reality Velázquez painted it for Gaspar Méndez de Hare, Marqués de Eliche. It entered the National Gallery, London, in 1905 and five years later a group of English critics and painters suggested that the picture was not by Velázquez but by Martínez del Mazo or by Mengs; the issue was raised again in 1930, and the painting was examined radiographically. Not only is *The Toilet of Venus* indisputably an authentic work by Velázquez, but it is also one in which the Italian experience is clearly manifested, allowing it to be dated as close to the second Italian voyage as 1651, when the work was first mentioned, in the *Libro primero del menaje de la casa del Excmo. Sr. D. Gaspar Méndez de Haro....* This Italianism is not Giorgionesque or Titianesque; rather it consists in a natural beauty less artificially assembled and prepared in spite of its unequivocably baroque pose. Unavoidably, much has been written about its great similarity to a nude of a Negress by Rembrandt, in which the positions of the torso and the legs coincide with those in Velázquez' *Venus*. Rembrandt's nude, however, could not have influenced Velázquez, because the etching by the Dutch painter is dated 1658, seven years after Velázquez' beautiful picture had been placed in the house of the Marqués de Eliche. The similarities, therefore, merely indicate the coincidental employment of the same baroque posture by two of the greatest painters of the century. Nevertheless, it is certain that this nude, in a posture so baroquely Italian, was inspired by a Nordic model, as pointed out by M. S. Soria (1953) — the *Venus and Adonis* by the Dutch Anthonie van Blocklandt (van Montfoort), undoubtedly known by Velázquez through an engraving published by P. Galle.

In the later paintings the stylistic perfection was apparently obtained without effort or struggle. To this period belong two masterworks, *The Family of Philip IV* (PLS. 330, 331) and *Las Hilanderas* (PL. 332; II, PL. 193).

The Family of Philip IV, more commonly known as *Las Meninas*, has received only praise. The first "monograph" dates from 1724; Palomino, in Chapter VII ("In which is described the most illustrious work, by Don Diego Velázquez"), unmistakably identifies the personages and the room represented; with artistic integrity he considers its qualities and adds the opinion of Luca Giordano, who called the canvas a "theology of painting." Most of the later critics have succeeded merely in repeating the praise. Worthy of mention, however, are three monographs, those by V. von Loga (1909–10), M. Alpatoff (1935), and F. J. Sánchez Cantón (1943), and the paragraphs dealing with this painting in the numerous studies on Velázquez, of which the most important are those by W. Stirling-Maxwell (1855), C. B. Curtis (1883), and C. Justi (1889).

The title by which the canvas is more commonly known today, *Las Meninas*, did not appear until 1843, in the Prado Museum catalogue, which emphasized the two *meninas* (little ladies-in-waiting) instead of the main subject of the picture, Princess Margarita María of Austria (1651–73). The little princess, then five years old, stands between María Agustina Sarmiento, kneeling, who offers her water, and the other *menina*, Isabel de Velasco. To the left stands Velázquez before his easel, in the act of painting the royal couple whose images are reflected in the mirror in the background; to the right, next to Isabel de Velasco, are the monstrous dwarf María Bárbola and a smaller dwarf, Nicolasito Pertusato, who is teasing a dog. In back stand two figures: the woman is Marcela de Ulloa, while the identity of the man is unknown. In the far background is seen the Queen's *aposentador*, José Nieto Velázquez, possibly a relative of the artist. The scene is set in the so-called "prince's room," which is decorated with two pictures, copies of Jordaens and Rubens by Martínez del Mazo; this room was in fact Velázquez' palace studio. The charming intrusion of the little princess and her suite of servants into the studio has been depicted.

Because of the improvisational nature of *Las Meninas* it is useless to search for iconographic precedents, which played such an important role in the preparation of other paintings by Velázquez. M. Alpatoff (1935), studying the composition, has pointed out that the head of the Infanta occupies the exact center of the canvas, whose surface has been rigorously subdivided; this leads to the supposition that Velázquez knew the golden section and the divine proportion, certainly learned in Italy. In this light, the eulogy by C. Justi (to the effect that "one of the most original creations in modern painting is, more than any other, the result of a moment captured by chance") loses some of its force. Furthermore, the subject matter — i.e., the invasion of the studio by the little girl and her suite — is in itself secondary to the extraordinary domination suggested in the unity of the surrounding, the spatial depth linking the different planes, the measured luminous balance of the whole, and the reproduction of the atmosphere. F. J. Sánchez Cantón (1943), in explaining the implications of this overwhelming tour de force, concludes by considering *Las Meninas* a negation of time, a permanence of "History."

Las Hilanderas (*The Spinners*) also bears a title of relatively recent date. Actually this work was painted, apparently in 1657, for Pedro de Arce, in whose inventory it was recorded in 1664

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

under the title *The Fable of Arachné*, that later investigations have proved to be the correct one. But this title was either lost or not understood when the picture became royal property in the 18th century. In 1794 it was called *Las Hilanderas*, and under this title it entered the catalogues of the Prado. Critics of the 19th century and many 20th-century ones saw in it nothing more than an interior of the tapestry factory of S. Isabel in Madrid, with five employees at work in the foreground and, in the background, two ladies, undoubtedly customers, inspecting a tapestry hanging on the wall. These same critics rightly observed that the problems of atmosphere were resolved as excellently in this work as in *Las Meninas*, perhaps even bettered by a less uniform light, an element analyzed successively by C. Justi (1889), A. Borelius (1951), and E. Lafuente Ferrari (1943), who compared the luminous central rectangle to the landscapes of Villa Medici. Justi praised the work on the basis of its realism, and Lafuente Ferrari pointed out that for a work so clearly baroque there is a lack of hierarchic arrangement of the figures in the action represented. Later critics held that if a dominant element existed in the painting it was the luminous background.

Careful study of *Las Hilanderas* has proved it to be of a most complicated iconography. Philip Hendy, in his catalogue (Boston, 1941) of the Isabella Stewart Gardner Museum, pointed out that the tapestry in the background of Velázquez canvas represented Titian's *Rape of Europa* (PL. 102), which during the 17th century hung in the Madrid palace, where it was copied by Rubens. This mythological background sufficed to lend a classical accent to a picture that seemed to show no more than the interior of a tapestry factory. In 1947, D. Angulo Iñiguez revealed that the two principal spinners in the foreground had a role similar to the Michelangelesque *ignudi* of the Sistine Chapel. A year later the same critic identified the figures of the action taking place against Titian's tapestry: the story is the struggle between Pallas and Arachne, contained in Book VI of Ovid's *Metamorphoses*, one of the classical books that Velázquez had in his library. With this interpretation everything is explained, including the bass fiddle resting close to Pallas (because, according to the pseudoclassical superstitions of the Renaissance, music was a cure for the bite of the spider, *Arachne*). Through an extremely complex baroque caprice Velázquez placed the essential story in the background; he obscured his chief actors by placing them against the Titian tapestry, so that they seem to the figures in the tapestry. The figures in the foreground, the authentic spinners, although merely complementary to the action, continue to be, pictorially, the chief actors in one of the most astounding creations of the great painter.

The bulk of Velázquez' production after *Las Hilanderas* consists of portraits, including those of Prince Felipe Próspero and the Infanta Margarita (both, Vienna, Kunsthist. Mus.). Another portrait of the Infanta Margarita (Prado, No. 1192), dating from 1660, is the artist's final painting; and it is very possible that the hands and the face were done by Martínez del Mazo. However, the splendid chromatic spectacle of the dress, in rose and silver, executed with the rapid impressionistic touch to which the master had inclined since 1650, is certainly the work of Velázquez. It is one of the most enchanting and harmonious of Velázquez' pictures, even more charming because it was never finished. It is said that this is the portrait that Velázquez is painting in *The Family of the Artist* (Vienna, Kunsthist. Mus.), by Martínez del Mazo. This is not possible, however, as M. L. Caturla (1944) has pointed out, because the female figure that Velázquez is painting there is dressed in green; it must therefore have reference to a lost portrait.

SOURCES. F. Pacheco, Arte de la pintura, su antiguedad y grandezas, Seville, 1549 (several later eds., the latest by F. J. Sánchez Cantón, Madrid, 1956); V. Carducho, Diálogos de la pintura, Madrid, 1633; M. Boschini, Carta del navegar pitoresco, Venice, 1660; J. Martínez, Discursos practicables del nobilísimo arte de la pintura (ed. Carderera y Solano, Madrid, 1866; new. ed., Y. Gallego, Barcelona, 1950).

BIBLIOG. The principal bibliographical indexes on Velázquez: H. Vollmer, ThB, s.v.; E. du Gué Trapier, Velázquez, New York, 1948, pp. 406–19; H. Soehner, El estado actual de la investigación sobre Velázquez, Clavileño, IX, 1951, pp. 23–29; B. de Pantorba, Velázquez, Madrid, 1955, pp. 259–76; J. A. Gaya Nuño, Bibliografía crítica y antológica de Velázquez, Madrid, 1963. Secondary: A. Palomino de Castro y Velasco, El Parnaso español pintoresco laureado, in El museo pictórico y escala óptica, vita CVI, III, Madrid, 1724; J. Céan Bermúdez, Diccionario histórico de los mas ilustres profesores de las Bellas Artes en España, V, Madrid, 1800, pp. 155–80; W. Stirling-Maxwell, Velázquez and His Works, London, 1855; C. B. Curtis, Velázquez and Murillo, New York, London, 1883; G. Cruzada Villaamil, Anales de la vida y de las obras de Diego de Silva Velázquez, escritos con ayuda de nuevos documentos, Madrid, 1885; C. Justi, Velázquez und sein Jahrhundert, Bonn, 1889 (Sp. ed., Madrid, 1953, with a study by J. A. Gaya Nuño, Despues de Justi, Medio siglo de estudios velazquistas, pp. 799–972); A. de Beruete, Velázquez, Paris, 1898 (Eng. tran. by H. E. Poynter, London, 1906; Ger. trans. by V. von Loga, Berlin, 1909); E. Fauré, Velázquez, Paris, 1903; H. Knackfuss, Velázquez, Munich, 1905; J. R. Mélida, Los Velázquez de la casa de Villa Hermosa, Revista de Archivos, Bibliotecas y Museos, IX, 1905, pp. 89–98; A. de Beruete, La Venus del espejo, Cult. Española, I, 1906, pp. 156–66; P. Lafond, Velázquez, Paris, 1906; S. L. Bensusan, Velázquez, London, New York, 1907; A. F. Calvert, Velázquez, London, New York, 1908; V. von Loga, Hat Velázquez radiert? JhbPreussKSamml, XXIX, 1908, pp. 165–68; V. von Loga, Las Meninas, ein Beitrag zur Ikonographie des Hauses Habsburg, JhbKhSammlWien, XXVIII, 1909–10, pp. 171–99; J. Gestoso, Un monograma y varias interpretaciones, B. de la Soc. española de Excursiones, XVIII, 1910, pp. 129–34; E. Tormo y Monzó, Villacis: Una incognita de nuestra historia artística, B. de la Soc. española de Excursiones, XVIII, 1910, pp. 225–65; A. de Beruete, El Velázquez de Parma, Retrato de Felipe IV pintado en Fraga, Madrid, 1911; E. Tormo y Monzó, El Salón de Reinos del Buen Retiro y el poeta del palacio y del pintor, B. de la Soc. española de Excursiones, XIX, 1911, pp. 22–24, 85–111, 191–217, 274–313; XX, 1912, pp. 60–64; E. F. Aman-Jean, Velázquez, Paris, 1913; A. de Beruete y Moret, A Hitherto Unknown Velázquez, BM, XXIV, 1913, pp. 127–28; A. L. Mayer, Velázquez, Munich, 1913 (2d ed., New York, 1940; 3d ed., Paris, 1941); A. de Beruete y Moret, Velázquez, Barcelona, 1914; V. von Loga, Velázquez, Klassiker der Kunst, Berlin, 1914; R. Davies, Velázquez, London, 1914; M. Gómez Moreno, El Cristo de San Plácido, Pacheco se cobra de un descubierto que tenían con el Velázquez, Alonso Cano y Zurbarán, B. de la Soc. española de Excursiones, XXIV, 1916, pp. 177–87; A. Bréal, Velázquez, Paris, 1919; H. L. Kehrer, Velázquez, Munich, 1920; J. Moreno Villa, Velázquez, Madrid, 1920; Marqués de Villaurrutia, El Papa de Velázquez, Arte Esp., V, 1920, pp. 61–76; A. L. Mayer, Einige unbekannte Arbeiten des Velázquez, ZfBk, LVI, 1921, pp. 36–39; A. de Beruete y Moret, La paleta de Velázquez, Madrid, 1922; J. Meier Graefe, Spanische Reise, Berlin, 1923; J. Allende-Salazar, Velázquez, Stuttgart, Berlin, 1925; E. Rodríguez Sadia, Velázquez, Madrid, 1925; F. J. Sánchez Cantón, La librería de Velázquez, Homenaje a Menéndez Pidal, Madrid, 1925, pp. 379–406; E. V. Lucas, Velázquez, New York, 1926; R. Longhi, Un San Tommaso del Velázquez e le congiunture italo-spagnole tra il '500 e il '600, Vita Artistica, II, 1927, pp. 4–11; A. L. Mayer, Das Original der "Küchenmagd" von Velázquez, Der Cicerone, XIX, 1927, pp. 563–64; L. Justi, Das Jagbild des Velázquez in der Londoner National Gallery, RepfKw, L, 1929, pp. 255–59; A. L. Mayer, Ein unbekanntes Männerbildnis von Velázquez, Pantheon, IV, 1929, pp. 334–36; C. Terasse, Velázquez, Paris, 1931; P. Jamot, Shakespeare et Velázquez, GBA, XI, 1934, pp. 122–23; M. Alpatoff, Menin'i Velaskesa, Iskusstvo, I, 1935, pp. 123–36; G. Rouchès, Velázquez, A Catalogue Raisonné of the Pictures and Drawings, London, 1936; G. P. F. Grappe, Velázquez, Paris, 1940; E. Tormo y Monzó, Un resumen de Velázquez, B. de la Soc. española de Excursiones, XLIV, 1940, pp. 135–50; A. Muñoz, Velázquez, Rome, 1941; F. J. Sánchez Cantón, Cómo vivía Velázquez, Inventario descubierto por don F. Rodríguez Marín, AEArte, XV, 1942, pp. 69–91; J. Faria, Velázquez, Buenos Aires, 1943; R. Gómez de la Serna, Velázquez, Buenos Aires, 1943; E. Lafuente Ferrari, Velázquez, London, New York, 1943; N. MacLaren, Velázquez: The Rokeby Venus, London, 1943; J. Ortega y Gasset, Velázquez: Sechs farbige Wiedergaben nach Gemälden aus dem Prado-Museum, Bern, 1943; F. J. Sánchez Cantón, La espiritualidad de Velázquez, Oviedo, 1943; F. J. Sánchez Cantón, Velázquez, Las Meninas y sus personajes, Barcelona, 1943; J. de la Encina, Velázquez, Mexico, 1944; E. Lafuente Ferrari, Velázquez, Barcelona, 1944; J. Ortega y Gasset, Velázquez als Hofmaler, Werk, XXXI, 1944, pp. 31–32; Marqués del Saltillo, En torno a "Las Meninas" y sus personajes, Arte Esp., XIII, 1944, pp. 125–33; E. du Gué Trapier, Velázquez, New Data on a Group of Portraits, Notes of the Hispanic Soc., IV, 1944, p. 37; F. J. Sánchez Cantón, New Facts about Velázquez, BM, LXXXVII, 1945, pp. 289–93; D. Angulo Iñiguez, El "San Antonio Abad y San Pablo Ermitaño" de Velázquez, Algunas consideraciones sobre su arte de componer, AEArte, XIX, 1946, pp. 18–34; M. L. Caturla, El coleccionista madrileño don Pedro de Arce, que poseyó Las Hilanderas de Velázquez, AEArte, XIX, 1946, pp. 292–304; L. Farque, Velázquez, Paris, 1946; J. López-Rey, On Velázquez's Portrait of Cardinal Borja, AB, XXVIII, 1946, pp. 220–24; F. Angulo Iñiguez, Velázquez, como compuso sus principales cuadros, Seville, 1947; A. S. Tiggs, Velázquez, New York, 1947; D. Angulo Iñiguez, Las Hilanderas, AEArte, XXI, 1948, pp. 1–19; XXV, 1952, pp. 67–84; M. S. Soria, Some Flemish Sources of Baroque Painting in Spain, AB, XXX, 1948, p. 252; E. du Gué Trapier, Velázquez, New York, 1948; A. Borelius, Études sur Velázquez, Linköping, 1949; R. Dos Santos, El subjetivismo del arte de Velázquez, Revista de Ideas Estéticas, VII, 1949, pp. 3–22; F. Ribeiro, Velázquez, Rio de Janeiro, 1949; C. de Tolnay, Velázquez, Las Hilanderas and Las Meninas, An Interpretation, GBA, XXXV, 1949, pp. 21–38; R. Longhi, Velázquez, 1630, La rissa all'ambasciata di Spagna, Paragone, I, no. 1, 1950, pp. 28–34; J. Ortega y Gasset, Papeles sobre Velázquez y Goya, Madrid, 1950; A. Borelius, Velázquez, Stockholm, 1951; E. W. Hesse, Calderón y Velázquez, Clavileño, X, 1951, pp. 1–10; P. Ridal y Bernaldo de Quirós, El Cristo del Sacramento pintado por Velázquez, Madrid, 1951; G. Galassi, Velázquez, Wiesbaden, 1952; J. A. Gaya Nuño, Historias viejas en torno a la Venus del Espejo de Velázquez, Clavileño, XVII, 1952, pp. 43–46; J. P. Pita Andrade, Los cuadros de Velázquez y Mazo que poseyó el séptimo Marqués del Carpio, AEArte, XXV, 1952,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

pp. 223–36; G. Jedlicka, Velázquez, Bern, 1953; Marqués de Lozoya, La Rendicion de Breda, Barcelona, 1953; M. S. Soria, La Venus, Los Borrachos y la Coronación de Velázquez, AEArte, XXVI, 1953, pp. 269–84; M. Salinger, Velázquez, New York, 1954; M. S. Soria, Las Lanzas y los retratos ecuestres de Velázquez, AEArte, XXVII, 1954, pp. 93–108; M. L. Caturla, La doda de Doña Ynéz, nieta de Velázquez, Madrid, 1955; J. Ortega y Gasset, Velázquez, Madrid, 1955; Velázquez y la Velazqueño (exhibition cat.), Madrid, 1960; E. d'Ors, Tres horas en el Museo del Pardo, Madrid, 1963, pp. 50–59; J. López-Rey, Velázquez, A Catalogue Raisonné of his Œuvre, London, 1963; J. Camón Aznar, Velázquez, Madrid, 1964.

Juan Antonio GAYA NUÑO

Illustrations: PLS. 320–332.

VELDE, HENRY VAN DE. Belgian painter and architect and a pioneer designer, teacher, and theoretician of the modern movement (b. Antwerp, Apr. 3, 1863; d. Zurich, Oct. 25, 1957). The extraordinary diversity of van de Velde's activities in the arts stems directly from his central insistence on an integrated reforming of the whole human environment. He pursued this mission resolutely over a long career that straddled Belgium, France, Germany, and Holland during a period of two world wars. For Henry van de Velde there were not countries but a continent, not arts but art, not styles but rather "rational conception" and "pure form."

He began as a neoimpressionist painter and in 1888 became a member of Les XX, the remarkable Brussels group that exhibited George Seurat's *Island of La Grande Jatte* in 1887; Paul Cézanne and Vincent van Gogh in 1890; posters by Jules Chéret, books by Walter Crane, and Paul Gauguin's pottery and polychrome wood reliefs in 1891; and Maurice Denis, Paul Signac's portrait of Fénéon, a poster by Henri de Toulouse-Lautrec, ceramics by Auguste Delaherche, and a project for an embroidery by van de Velde in 1892. The completed embroidery was exhibited the next year, and in 1894 van de Velde's lecture, "L'art futur" (published as *Déblaiement d'art*), predicted the end of easel painting, criticized the term "minor arts," hailed the power of the machine, and called for a meaningful and organic relationship between art and life.

Impelled by social and moral considerations, van de Velde, totally and tirelessly dedicated, became over the next six decades a European presence — writing, lecturing, teaching, and playing a major role in the seminal Deutscher Werkbund. A prodigious reader, van de Velde was influenced by John Ruskin, William Morris, E. E. Viollet-le-Duc, and Prince Kropotkin, as well as by Japanese art, by Charles Henry, and by the whole synthetist-symbolist current with which he was linked in Les XX. Van de Velde denounced the successive 19th-century revivals of historical styles and called for a new, modern style, using new forms, new materials, and the new industrial techniques. Functionalism was essential for beauty, but not every functional object was necessarily beautiful. Van de Velde saw beauty not as a property of any particular material or technique in itself but rather in the appropriateness and sensitivity with which it was used. In 1902 he prophesied "a great future" for iron, steel, aluminum, and even such misused products as cement, celluloid, and linoleum, and he wrote, "The engineers stand at the entrance to the new style, and the principle of logic is its basis."

An abstract pastel of the early 1890s (Otterlo, Netherlands, Rijksmus. Kröller-Müller) and book designs of 1892 and 1893 show van de Velde's style to be characterized by a unique abstraction that sets him apart from his contemporaries. This abstraction grew out of his intellectual and theoretical approach to the rationalization of structure and the dynamic function of line and ornament; it was the logical outgrowth of the theories of Charles Henry, Seurat, and the symbolists, but van de Velde anticipated Kandinsky (q.v.) by two decades.

Convinced as he was of the necessity for a unified harmony in the environment, soon after his marriage in 1894 van de Velde proceeded to design and build his own house and the fittings and furniture for it (Bloemenwerf, near Brussels, completed early in 1896; I, PL. 467). He had studied painting in Antwerp and in Paris (with Carolus-Duran); as architect and designer he was self-taught. In 1895 a visit from Julius Meier-Graefe, the German critic, and Siegfried Bing, the Paris dealer in Japanese art, brought van de Velde a commission to do three complete rooms for Bing's Maison de l'Art Nouveau, a gallery that opened in Paris in December, 1895. These rooms were shown again in Dresden in 1897 and had a revolutionary impact on the decorative arts in Germany, where they immediately established van de Velde as a major figure. As a result he is generally associated with Art Nouveau (q.v.), which takes its name from Bing's gallery, despite the fact that his furniture is unornamented and achieves its effects rather by the taut energy of the structural lines of the bare wood. As Siegfried Giedion has put it, "Van de Velde's earliest work pointed farther into the future than Horta's house in the Rue de Turin" (*Space, Time and Architecture*, 3d ed., Cambridge, Mass., 1952, p. 292). In his writings van de Velde repeatedly denounces the meaningless ornament and modish decorative excesses that came to be identified with Art Nouveau or Jugendstil. In contrast, Edmond de Goncourt's term "yachting style" for van de Velde's rooms captures the essence of their fresh and spare rationality. Van de Velde was led to the design of books, textiles, ceramics, silver (I, PL. 469; VI, PL. 278; VII, PLS. 325, 342), and jewelry and even to the reform of women's dress; and wherever ornament is present it is abstract and organic, energizing form with the active play of positive and negative shape which also characterizes the three-dimensional forms of his architecture and which he called "dynamography." In his *Kunstgewerbliche Laienpredigten* of 1902 van de Velde wrote, "A line is a force" and "a force which traces the energy of its maker"; while this concept of line is derived from his devotion to van Gogh and the symbolists, it also looks forward to the futurists (see CUBISM AND FUTURISM) and Jackson Pollock (q.v.).

In the years following the success of his rooms at the Dresden exhibition of 1897, van de Velde's career centered in Germany. His posters, packaging, and advertising designs for the Tropon-Werke in 1898 were an early instance of an artist's collaboration with industry. Van de Velde exhibited at the Munich Sezession in that same year and in 1900 moved to Berlin. Over the next two years he designed the interior of the Folkwang Museum (now the Karl-Ernst-Osthaus Mus.) at Hagen and worked with the Krefeld textile industry on redesigning its fabrics, also designing dresses and lecturing on the reform of women's clothing. In 1902 van de Velde was appointed artistic adviser to the Grand Duke of Saxe-Weimar; he lived in a house of his own design in Weimar (I, PL. 467) until World War I. In Weimar, as director of the Kunstgewerbeschule, he revolutionized the teaching of design and crafts and created a meeting ground for the artist-designer, the craftsman, and the industrialist. He had earlier given courses in Antwerp and Brussels, but in Weimar he organized workshops where students of the various crafts worked together in the study of color, line, and the esthetics of form and ornament. Van de Velde designed the new buildings for the Weimar Neubau Kunstschule (1904) and the Kunstgewerbeschule (1906–07); the Kunstschule, with its unornamented and rational straight-line façade and wide rectilinear window panels that curve into the mansard roof, prefigures the exterior of Peter Behrens's A.E.G. Turbinenfabrik in Berlin (V, PL. 103). When van de Velde left Germany, it was on his recommendation that Walter Gropius (q.v). was named director of the two schools, which merged to become the Bauhaus School. Pevsner (1963) points out that van de Velde's program was actually more advanced than that of the Bauhaus in its early years.

During his Weimar period van de Velde also designed the Nietzsche-Archiv, a house for Count Kessler, and other buildings in Germany and abroad. His role in the design of the Théâtre des Champs-Elysées in Paris (1911–13) with Auguste Perret has been the subject of controversy (see *Geschichte meines Lebens*, 1962, pp. 327–40); it remains undisputed that the decision to build in concrete was van de Velde's. Earlier he had visited and written on the Greek theater at Syracuse and discussed with Gordon Craig and Max Reinhardt a project for a circular theater at Weimar that was never built. In 1914 he built the concrete theater for the Werkbund Exposition at Cologne (now destroyed; see V, FIG. 231), which made an important break-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

away from the single-perspective proscenium stage and whose supple plastic curves influenced the design of Eric Mendelsohn for the Einstein Tower in Potsdam (V, PL. 104, FIG. 236). The purpose of the Deutscher Werkbund, which was founded in 1907 to raise the artistic level of crafts and industry, was van de Velde's own central purpose. At the Werkbund meetings in 1914 he was the spokesman for the artists (including Gropius and Bruno Taut) who reacted to Hermann Muthesius's call for standardization of designs with the protest that the artist is essentially a fervent individualist who will never freely consent to the sterilizing effect of an imposed canon that inhibits his response to new situations.

With the beginning of the war that same year, van de Velde's position in Weimar was ended. He wrote during the war years and in 1917–19 lived in Switzerland, making such friends there as Ernst Ludwig Kirchner and Romain Rolland. Van de Velde knew an extraordinary number of the more important European figures over a period of several generations. He was a friend of Constantin Meunier and of the socialist Emile Vandervelde. In Brussels, where Les XX was a center for symbolist writers as well as artists, among van de Velde's associates were Mallarmé and Verlaine, Toulouse-Lautrec, Camille Pissarro, Paul Signac, and Maurice Denis. Later, in the Weimar years, there were not only such colleagues as Behrens and Gropius in the Werkbund but also the lively circles of Count Kessler and Elisabeth Förster-Nietzsche, which included Edvard Munch, Hugo von Hofmannsthal, Rainer Maria Rilke, and André Gide.

In 1920 van de Velde became architect to the Kröller-Müller family in Holland, an association that led to the design of the Rijksmuseum Kröller-Müller in Otterlo (1937–53). Functional and beautiful in its forest setting, this is surely the most visited of van de Velde's buildings, and critics have unanimously praised its gracious dignity, clarity, and spatial flow.

Van de Velde returned to his native Belgium in 1925 and became professor of architecture at the University of Ghent and director of the Brussels Institut Supérieur des Arts Décoratifs, the latter especially created for him by King Albert I and the socialist minister Camille Huysmans. In the late 1920s and the 1930s van de Velde did much building in Belgium, notably the library for the University of Ghent, and also a large rest home in Hannover. He designed the superstructure and interiors of new metal railway trains and the channel boat *Prince Baudouin* in 1933–34 (the Kaiser's opposition had cost him a commission to design an ocean liner for the Hamburg-America line in 1903). The major responsibility for the Belgian pavilions at the Paris Exposition Internationale in 1937 and the New York World's Fair of 1939–40 was van de Velde's. He was attached to the office of the Belgian Minister of Public Works in 1935, and he continued in this post and as director of his school in Brussels during World War II.

At the age of eighty-four, in 1947, Henry van de Velde left Belgium, settling in Oberägeri, near Zurich, where he lived with his daughter Nele for the next ten years, writing his memoirs, the center of a devoted circle that included Alfred Roth, Johannes Itten, and Hans Curjel and such visitors as Alvar Aalto and Ernesto Rogers (*Casabella*, no. 237, 1960). Curjel edited the memoirs and in 1962 published a German translation as *Geschichte meines Lebens* (not yet published in the original French). In 1959 the Henry van de Velde-Gesellschaft (in the Karl-Ernst-Osthaus Mus.) in Hagen and the Association Henry van de Velde in Brussels were founded.

SELECTED WRITINGS. The list of van de Velde's books and articles is a long one, the articles extending from appearances in *L'art moderne*, *Pan*, and *La revue blanche* in the 1890s to *Werk* in the late 1940s. Among his most important works are the following: Déblaiement d'art, Brussels, 1894; Die Renaissance im modernen Kunstgewerbe, Berlin, 1901; Kunstgewerbliche Laienpredigten, Leipzig, 1902; Les formules de la beauté architectonique moderne, Weimar, 1917, Brussels, 1923; Les formules d'une esthétique moderne (1902–12), Brussels, 1932; Pages de doctrine (1917–39), Brussels, 1942; Newness and Novelty, Mag. of Art, XLI, Dec., 1948, pp. 296–300; Henry van de Velde, Extracts from His Memoirs, 1891–1901, ed. and trans. P. Morton Shand, Arch. Rev., CXII, Sept., 1952, pp. 143–55; Zum neuen Stil (a selection), ed. and trans. H. Curjel, Munich, 1955 (bibliog.); Geschichte meines Lebens, ed. and trans. H. Curjel, Munich, 1962 (bibliog.).

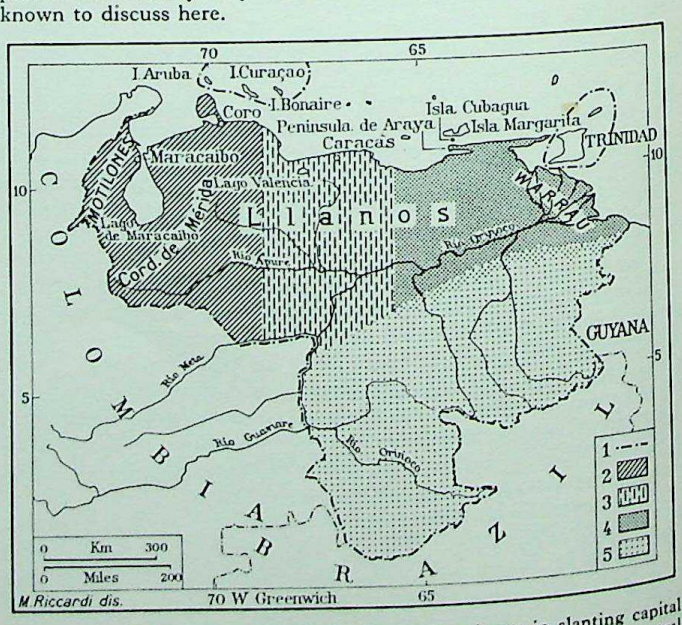
Monographs: K. E. Osthaus, Van de Velde, Leben und Schaffen des Künstlers, Hagen, 1920; M. Casteels, Henry van de Velde, Brussels, 1932; H. Teirlinck, Henry van de Velde, Brussels, 1959; K. H. Hütter, Henry van de Velde in Weimar, Berlin, 1965; A. M. Hammacher, Le monde de Henry van de Velde, Antwerp, Paris, 1967. *Critical literature*: B. Zevi, Storia dell'architettura moderna, 2d ed., Turin, 1953; C. Rességuier, Function of Ornament as Seen by Henry van de Velde, J. Royal Arch. Inst. of Canada, XXXI, Feb., 1954, pp. 33–37; C. Rességuier, Die Schriften Henry van de Veldes (Zurich Diss.), New York, 1955; E. L. Kirchner, Briefe an Nele und Henry van de Velde, Munich, 1961; B. Bradford, Van de Velde's Own House, Arch. Rev., CXXXIV, Aug., 1963, pp. 133–35; N. Pevsner, Gropius and Van de Velde, Arch. Rev., CXXXIII, Mar., 1963, pp. 165–68; L. Mumford, The Wavy Line versus the Cube (from Arch., Dec., 1930), Arch. Record, CXXXV, Jan., 1964, pp. 111–16; R. Schmutzler, Art Nouveau, New York, 1964. *Exhibition catalogues*: Kunstgewerbe Museum, Zurich, Um 1900, 1952, Henry van de Velde, 1957; Karl-Ernst-Osthaus Museum, Hagen, Der junge van de Velde und sein Kreis, 1959; Museum of Modern Art, New York, Art Nouveau, 1960; Württembergischer Kunstverein, Stuttgart, Henry van de Velde, 1963; Palais des Beaux-Arts, Brussels, 1963; Rijksmuseum Kröller-Müller, Otterlo, 1964 (bibliog.).

Libby TANNENBAUM

VENEZUELA. The Republic of Venezuela was discovered by Spanish explorers in 1499; the country threw off colonial control in 1823. It is now an independent federal republic of 20 states and three territories bounded by Colombia on the west, Brazil on the south, and Guyana on the east, while to the north it reaches the Caribbean Sea. The southern forest area of the country is practically unexplored, but the western, central, and eastern areas have revealed numerous archaeological remains belonging to a succession of periods. The population is made up mainly of Spanish, Indian, and Negro ethnic groups (see SOUTH AMERICAN CULTURES).

SUMMARY. Prehistoric and protohistoric cultures (col. 732): *Western area*: *a. Joboid series; b. Dabajuroid series; c. Tocuyanoid series; d. Tierroid series. Central area*: *a. Barrancoid series; b. Valencioid series. Eastern area*: *a. Manicuaroid series; b. Saladoid series.* Contemporary indigenous production (col. 735). Colonial and modern art (col. 736): *Painting; Architecture. Centers of artistic interest.*

PREHISTORIC AND PROTOHISTORIC CULTURES. Prehistoric Venezuela is divisible into three areas: western, central, and eastern (FIG. 732). The western area includes the Maracaibo basin, the Venezuelan Andes, and the adjacent parts of the Llanos (plains), and the coast. The Netherlands Antilles islands of Aruba, Curaçao, and Bonaire also belong culturally to this area. The central division extends from the middle Orinoco River Valley northward through the central Llanos and the Valencia and Caracas basins to the coast. The eastern area comprises the lower part of the Orinoco River Valley, the eastern third of the Llanos and the coast, and the islands immediately offshore, including the former British colony of Trinidad. The southern part of the country may constitute a fourth area but is too little known to discuss here.



Venezuela, principal centers (main Indian groups shown in slanting capital letters). *Key*: (1) Modern national boundaries; (2) western area; (3) central area; (4) eastern area; (5) forest area.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

It has been possible to distinguish three epochs; Paleo-Indian, Meso-Indian, and Neo-Indian, which correspond respectively to the Paleolithic, Mesolithic, and Neolithic periods of the Old World. Radiocarbon dates for the Paleo-Indian epoch range from 15,000 to 12,000 B.C.; the Meso-Indian epoch is fixed by radiocarbon dating between 5000 and 1000 B.C.; and the Neo-Indian epoch between 1000 B.C. and the arrival of Columbus in A.D. 1493. For each epoch Rouse and Cruxent (1963) have differentiated a number of cultures named after typical sites and have grouped these cultures into lines of development called "series." In some cases a people has produced a series by developing a succession of cultures. Other series are the result of acculturation: one group of people has transmitted customs and art forms to a second group; the second group has passed them on to a third group, and so on. Each series has been named by adding the suffix "-oid" to the name of a typical culture.

Western area. Four major series are presently recognized in western Venezuela: Joboid (from El Jobo in Falcón state), Dabajuroid (from Dabajuro, near Coro, in Falcón state), Tocuyanoid (from Tocuyano, in the Barquisimeto area in Lara state), and Tierroid (from Tierra de los Indos, in the mountainous part of the Barquisimeto area, Lara state). All four appear to have originated there. The first three subsequently spread eastward into other parts of Venezuela but reached their highest development in the west.

a. Joboid series. So far as is known, the first people to settle Venezuela were hunters who arrived during the Paleo-Indian epoch. Most of their remains belong to a Joboid series. The earliest sites of this series have yielded only crude stone choppers, which would have been useful in the production of wooden spears for hunting the mastodon and other large game upon which the Paleo-Indians depended for food. Later sites also contain large unifacially or bifacially chipped blades, which may possibly have been hafted on thrusting spears; and the latest sites, dating from the close of the Paleo-Indian epoch and the beginning of the Meso-Indian epoch, have smaller, more finely made projectile points. Most of the sites are concentrated in the state of Falcón in western Venezuela, but the latest remains come mainly from the Guiana Highlands of eastern Venezuela, as if the Joboid Indians had taken refuge there.

The Joboid series lacks a true form of art, such as the cave paintings and bone carvings of the contemporaneous Aurignacian-Magdalenian people of Europe, but its artisans had a rudimentary interest in design, as is evidenced by the finish and the shapes of their blades and projectile points. These are rather finely rechipped along the edges, sometimes in serrate form, and tend to be leaf-shaped. At the very end of the Paleo-Indian epoch, the Joboid artisans developed a new type of point, with stem and triangular blade; it was this form which survived into the Meso-Indian epoch in the Guiana Highlands.

b. Dabajuroid series. By the beginning of the Meso-Indian epoch, the mastodon and other large game had become extinct and the Meso-Indians found it necessary to develop new sources of food. Those on the coast turned to fishing and the gathering of shellfish, and they left large piles of shells along the shores of Venezuela and on the nearby islands, to which they were drawn by their exploitation of marine resources. Little has been done with these shell heaps in western Venezuela; they are therefore discussed below, in the section on the eastern area, where they are better known. The Meso-Indians of the interior came to depend upon fruits and vegetables, which they gathered wild, though they soon began to cultivate them in a primitive way. They also began to make pottery, unlike the contemporaneous fishermen on the coast. They gradually improved their agricultural techniques until farming became the principal means of subsistence, at which point it may be said that they passed from the Meso-Indian to the Neo-Indian form of life.

These developments are best illustrated at the site of Rancho Peludo near the Colombian border, where a new, Dabajuroid series had come into existence by 2000 B.C., according to radiocarbon analysis. The Dabajuroid series had a remarkably long life. Beginning in the Meso-Indian epoch, while farming was still rudimentary, it persisted throughout the Neo-Indian epoch. Late in that epoch it spread southward into the Andes, northward to the Netherlands Antilles islands of Curaçao, Aruba, and Bonaire, and eastward along the coast as far as the Peninsula of Araya and Margarita Island in eastern Venezuela.

The earliest Dabajuroid pottery, of the Meso-Indian epoch, is surprisingly elaborate. It comprises not only bowls and ollas, sometimes resting on tall, perforated, annular bases, but also burial urns. The bottoms of many vessels have been roughened by impressing fabrics into the wet clay, and some necks are corrugated. Decoration consists of appliqué strips and gashes or punctations, occasionally portraying human faces. The later pottery, of the Neo-Indian epoch, also has bulging hollow legs and complex geometric designs painted in black or red (or both) on a white background, which may be the result of influences from the Tocuyanoid series, discussed below. Human or animal *adornos* and figurines of clay are also present in the later sites; they continue the earlier tradition of appliqué features, although the "coffee-bean" eye had become prevalent.

c. Tocuyanoid series. This series centers around the modern city of Barquisimeto at the foot of the Andes in western Venezuela, whence it extends southeast into the Llanos and northeast to the coast of central Venezuela around Maiquetía, the airport for Caracas. Its pottery bears some sort of relationship to that of northern Colombia (q.v.), but this remains to be investigated. It is known only that the Tocuyanoid series was fully developed in Venezuela by about 300 B.C. and that it persisted through the early and middle Neo-Indian periods. Its remains consist almost entirely of pottery, which is characterized by hollow bulbous legs extending up the sides of the vessels almost to the rim; simple modeling and painting of human faces and of snakes; and elaborate curvilinear designs, either incised or painted in red or black (or both) on a white background.

d. Tierroid series. During the late Neo-Indian period the Tocuyanoid series gave way throughout most of the area of its distribution to a new, Tierroid series, which is also to be found in the high Andes of Venezuela. Tierroid pottery lacks the Tocuyanoid incision and modeling but continues its tradition of bulbous legs (though not in so exaggerated a form) and its polychrome painting, which becomes more angular.

The Tierroid people were apparently responsible for most, if not all, of the monuments and ceremonial artifacts found in the places where they lived. On the Llanos they constructed mounds and causeways (*calzadas*), not so much for esthetic reasons as to provide refuge in time of floods. In the Andes they produced tombs (*mintoyes*) consisting of stone-lined shafts leading to burial chambers; caves were also used as places of burial and worship. These have yielded the greatest variety of artistic objects in Venezuela: effigy vessels and incense burners of clay; figurines and amulets, made of both clay and stone; and the so-called "bat-wing" pendants of stone. Both human and animal forms are represented and are modeled or sculptured in greater detail than those of the Tocuyanoid series. It may be supposed that this is the result of influences from Colombia, since resemblances to the art of that country are strong.

Central area. In the central area the Paleo-Indian epoch is known only from a few scattered projectile points of the Joboid types, already discussed; and the Meso-Indian epoch only from preliminary studies of the coastal shell heaps. The earliest Neo-Indian remains are those of the Tocuyanoid series, which seems to have intruded from western Venezuela about the time of Christ. This series was eventually succeeded by several other polychrome series, which are too localized to discuss here. The two major central series, Barrancoid (from Los Barrancos, on the lower Orinoco River) and Valencioid (from Lake Valencia), are both characterized by unpainted pottery.

a. Barrancoid series. This is in two parts: one in the Valencia basin and on the adjacent coast of central Venezuela, where the Tocuyanoid series had previously been; and the other around the delta of the Orinoco River in eastern Venezuela. There is reason to believe that both these segments are intrusive; perhaps the series developed from a third, as yet undiscovered, segment in the central part of the Orinoco basin, farther south and west. This series had reached the lower part of the Orinoco River Valley by 800 B.C. and was in central Venezuela by A.D. 250, according to radiocarbon dates. It flourished in both areas during the early and middle Neo-Indian period and then became extinct, except for a small remnant on the central coast.

Barrancoid pottery has solid annular bases and rim flanges, which were incised with curvilinear designs. It is also distinguished by elaborately modeled and incised figures of human beings and animals on the vessel wall or on lugs attached to the rim. Clay pipes bearing similar designs occur in association with the central part of the series, but there are no freestanding figurines, except for one specimen found on the Orinoco; nor, curiously, is the art much reproduced in materials other than clay. Archaeologists have been attracted to the Barrancoid pottery by the artistry and complexity of its decoration and have seen resemblances to the art of various other parts of the New World — that of the Mayas in Yucatán, of Chavín civilization in Peru (q.v.), and of certain Meso-Indians of Colombia, for example. The significance of these resemblances remains to be determined; the prehistory of the series in Venezuela must be studied before its broader relationships can be evaluated.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

b. Valencioid series. The Barrancoid series was succeeded throughout most of the central area by a new series named after the Valencia basin. This basin is noted for its mounds, which were constructed partly for burial purposes and partly in order to raise the houses above the level of floods. The pottery of the mounds consists of bowls decorated with tiny biomorphic lugs; collared jars bearing human faces; and animal effigies. The features are done in appliqué work rather than modeling, and the coffee-bean eye is typical. Incised designs are simple and rectilinear. The Valencioid people also made burial urns, figurines, and pipes of clay. The figurines typically portray women, some with babies on their backs, and have broad flat heads. There are also carved amulets of stone and shell.

Because the Valencioid material was the first to be excavated it has come to be regarded as the classic Venezuelan form of art, but it is not the most advanced. It may be considered a degeneration from Barrancoid art, tempered by influences from the ceramics of the Llanos and western Venezuela, to which it must yield in artistic quality.

Eastern area. The Paleo-Indian epoch is represented in the eastern area only by a few scattered finds of Joboid projectile points, to which reference has already been made. There is a single Meso-Indian complex of the Manicuaroid series (from Manicuare, on the Araya peninsula); and two Neo-Indian complexes of the Saladoid (from Saladero, near Los Barrancos, on the lower Orinoco) and Barrancoid series, the second of which has already been discussed in connection with its occurrence in the central area.

a. Manicuaroid series. The Meso-Indian fishermen of the coast are best known from excavations in shell heaps on the peninsula of Araya and the islands of Cubagua and Margarita. These have been radiocarbon-dated between 2500 B.C. and A.D. 500, when the Manicuaroid series gave way to the Saladoid series. The Manicuaroid people made projectile points of bone and shell rather than stone. They turned increasingly to shell for the production of artifacts: the lower levels of the middens contain only tools and utensils, such as hammers, cups, and later gouges, while the upper levels also have ornaments, including incisor-shaped pendants, several of which are transversely incised. One site has yielded a crude stone petroglyph, consisting of an irregular arrangement of small pits.

b. Saladoid series. According to radiocarbon dates, the Saladoid series had made its appearance in the middle and lower Orinoco River Valley by 1000 B.C. Soon afterward it was split in two by the intrusion of the Barrancoid series, one part remaining in the middle Orinoco Valley and the other part moving out through the delta of the Orinoco River to the east coast and the island of Trinidad. Both parts persisted through the early and middle Neo-Indian period before giving way to other series, which need not be discussed here since they are of lesser importance.

The typical Saladoid vessel is gracefully shaped like an inverted bell and is decorated with tabular lugs, simple curvilinear incisions, or geometric designs painted in white on a red background. After the Saladoid people came into contact with the Barrancoid potters, they began to make modeled and incised lugs. They produced no ceremonial objects but are probably responsible for most of the petroglyphs and rock basins in the Orinoco basin.

The Saladoid people introduced Neo-Indian culture to the islands of the eastern Caribbean. They colonized the West Indies during the early and middle Neo-Indian period and reached Margarita Island by A.D. 600. They seized Margarita from the Manicuaroid people, only to yield it to the Dabajuroid Indians, as already noted.

CONTEMPORARY INDIGENOUS PRODUCTION. Most of the Indians of the western, central, and eastern areas have been assimilated into the Spanish population. They remain distinct only along the Colombian border, where the Guajiras and Motilones still carry on their native crafts, and in the Orinoco delta, which is the home of the Warrau Indians. There are larger numbers of tribes in southern Venezuela, remote from the areas of European settlement.

The Indians are particularly skilled in making dugout canoes, which they sell on the general market in Venezuela. They also produce good basketry, and most still make pottery, though it is poor in comparison with the prehistoric pottery. The Guajira Indians, who have become herders, are noted for their colorful native clothing.

Irving ROUSE

BIBLIOG. L. R. Oramas, Apuntes sobre arqueologia venezolana, Proc. of the Second Pan-Am. Cong., I, Washington, 1917, pp. 138–45; A. Jahn, Los aborígenes del occidente de Venezuela, Caracas, 1927; M. Briceño Iragorry, Ornamentos funebres de los aborígenes del occidente de Venezuela, Caracas, 1928; C. Osgood and G. D. Howard, An Archaeological Survey of Venezuela, Yale Univ. Pub. in Anthr., XXVII, 1943; A. Kidder II, The Archaeology of Northwestern Venezuela, Pap. Peabody Mus. of Am. Archaeol. and Ethn., Harvard Univ., XXVI, I, 1944; A. Lisandro, Datos etnográficos de Venezuela, Caracas, 1945; J. M. Cruxent, Artifacts of Paleo-Indian Type, Maracaibo, Zuilia, Venezuela, AmAnt, XXVII, 4, 1962, pp. 576–79; I. Rouse and J. M. Cruxent, Venezuelan Archaeology, New Haven, 1963.

COLONIAL AND MODERN ART. *Painting.* During the colonial period, painters limited themselves to the execution of crude copies of religious paintings imported by European missionaries. Only toward the beginning of the 19th century was a local style of painting created, simple in expression with a grace born of popular feeling. The most distinguished painter in this style was Juan Lovera, who was also founder of the first local school of painting. His pupils included his son Pedro, Antonio J. Carranza, Carmelo Fernández, and Joaquin Sosa, who were also teachers in the first art institutes founded by the state.

Toward the middle of the 19th century there arose an authentic artistic movement whose representatives were educated in Europe and were bound to French and Italian academic tradition. The cold, severe style of this period lacks life in spite of the artists' feeling for the historical and popular subjects of the paintings. Martin Tovar y Tovar (1828–1902), founder of the classical movement, painted chiefly portraits and large historical paintings for the decoration of public buildings, including the dome of the Capitol. Arturo Michelena, an excellent draftsman, was a follower of Tovar in his allegorical-historical manner and practiced a rigid classicism. Cristóbal Rosa (d. 1954), on the other hand, although formed in a similar artistic climate, was strongly influenced by French impressionism. His paintings, always inspired by local historical events or social problems, reveal a new sensitivity, particularly in his use of color, that anticipates modern trends. However, such artists as Herrera Toto and Tito Salas, teachers at the Academia de Bellas Artes, carried the academic tradition into the 20th century.

During the first years of the 20th century a new generation, reacting against the academic school, formed an independent group, the Circulo de Bellas Artes, which included not only painters but avant-garde poets and writers. The painters of the Caracas landscape school also received their training within the sphere of the Circulo de Bellas Artes, emulating the impressionists in their rendering of the Venezuelan scenery; the works of Edmundo Monsanto (founder of the group), of the more contemplative and decorative Rafael Monasterios, and of Manuel Cabré are characterized by violent chromatic contrasts and chiaroscuro. The treatment of light is basic also in the style of other landscape painters, such as Luis Alfredo López Méndez, Marcelo Vidal, Próspero Martínez, and Armando Reverón.

In 1918 the Circulo de Bellas Artes was dissolved and the individual artists followed different paths, all open, however, to contemporaneous European artistic trends. The local schools were considerably influenced in this period by Emilio Boggio (trained in Paris), the Romanian Samys Mützner, and the Russian Nicolás Ferdinandov, all of whom were active within the sphere of neoimpressionism. The Venezuelan artists most strongly influenced by avant-garde currents included Rafael Ramón González, Antonio Alcántara, Bernardo Monsanto, and Marcos Castillo; among those more attached to the local tradition or working toward a free personal expression were Francisco Narváez, Elisa Elvira Zuloaga, and Juan Vicente Fabbiani.

In 1936 the Escuela de Artes Plásticas y Artes Aplicadas "Cristóbal Rojas," modeled on the Bauhaus, was founded in Caracas and placed under the direction of Edmundo Monsanto. Local and foreign artists who formed part of the school included Héctor Poleo, Armando Barrios, Pascual Navarro Velásquez, Alejandro Otero Rodríguez, Mateo Manaure, Mario Abreu, and Oswaldo Vigas, all identified with contemporary international trends. At the Venice Biennale of 1962, works were exhibited by Alejandro Otero Rodríguez (b. 1921), Jesús Raphael Soto (b. 1923), Mercedes Pardo (b. 1922), Carlo Cruz-Díez (b. 1923), Omar Rafael Carreño (b. 1927), Alirio Oramas (b. 1924), Manuel Quintana Castillo (b. 1928), and Oswaldo Vigas (b. 1926), all resident in Paris, and by the Berlin residents Mario Abreu (b. 1918) and Manuel Espinoza (b. 1937); almost all these artists work in an abstract style.

Architecture. The radical renewal of the country, which is bound to the phenomenon of urbanization typical of developing countries, has made Venezuela a leading nation in the field of modern South American architecture, but it has also contributed decisively to the disappearance of earlier buildings; only a few buildings, repeatedly restored or entirely rebuilt, survive to give an idea of the baroque colonial style. These early buildings usually consisted of an architectural unit built round a central patio, behind which were other secondary patios and gardens. The main patio was surrounded by

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

a portico of low-vaulted arches supported on Tuscan piers (*panzudos*), with the inner walls painted in lively colors imitating the Spanish ornamental tiles, or *azulejos*. Later, as gardens and secondary patios were eliminated to make room for construction and as subsidiary buildings were attached to the main architectural unit, the houses lost their original structural unity. The result was the creation of untidy and heterogeneous building complexes (*barriadas*), which still characterize certain old quarters of Caracas, for example.

In the first decades of the 20th century experiments were made, especially in Caracas, in new architectural styles, mostly inspired by European revival styles; only a few examples worthy of note survive. Today, the adoption of modern criteria of town planning and of architecture has resulted in a building revolution that has completely altered the face of numerous Venezuelan centers, such as Coro, El Tocuyo, Guanare, Mérida, Cumaná, and Píritu, which like Caracas preserve little trace of the colonial past. This revolution is the work of a group of Venezuelan and foreign architects including Carlos Villanueva (b. 1900), Oscar Niemeyer (q.v.), Graziano Gasparini, Carlo Scarpa, Diego Carbonell, and many others. Model villas by Carbonell are to be seen in the suburbs of Caracas, especially Altamira. Gasparini has been particularly successful in his work at Macuto and in the social centers of the Paraguana Peninsula, with their white façades in rustic *intonaco* and their blue windows and corridors protected by wooden grilles that provide the internal ventilation, necessitated by the climate.

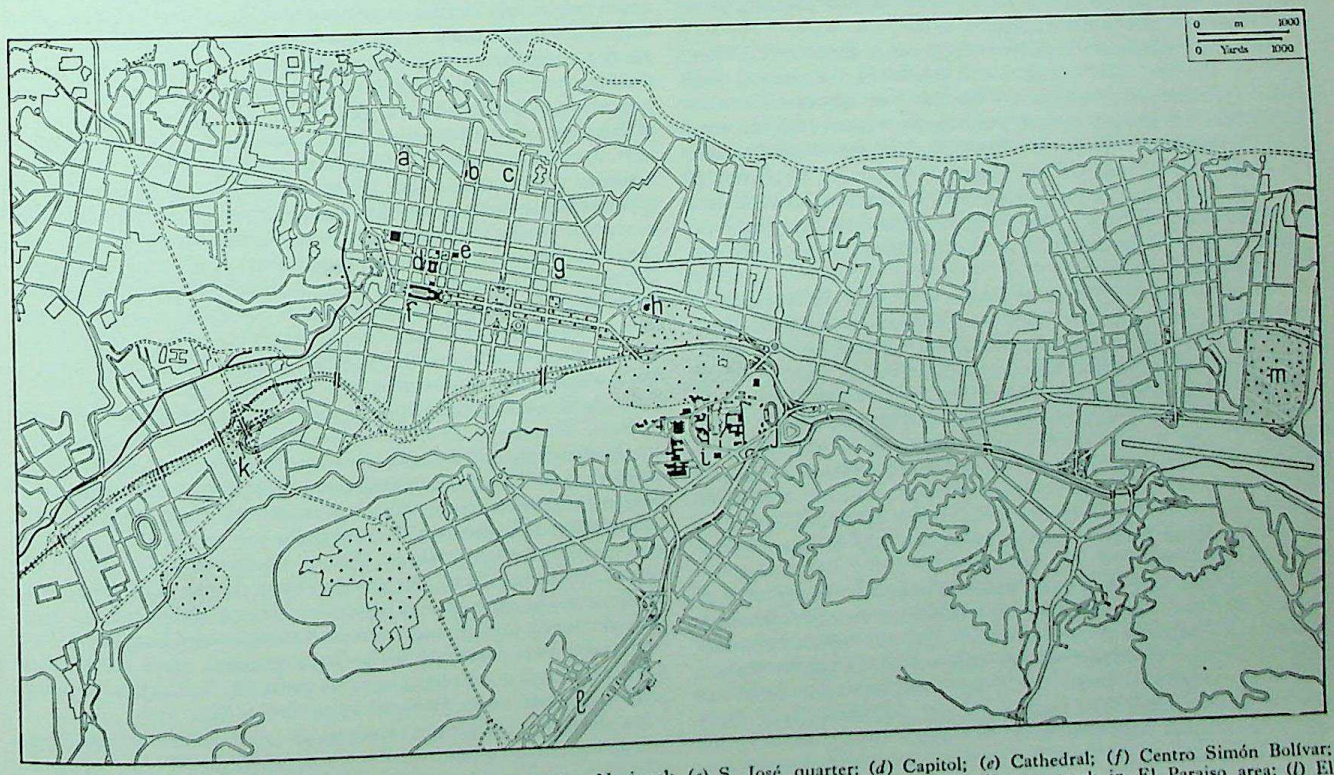
BIBLIOG. M. Solà, Historia del Arte hispano-americano, Barcelona, 1935; M. Rotival, Urbanisme au Venezuela, Arch. d'aujourd'hui, 1950–51; G. Dihel, Evolution de la peinture vénézuélienne, La Rev. fr., IV, 1954, pp. 65–70; G. Ponti, Articles on architecture in Venezuela, Domus, 1954, 295, pp. 1–14, 299, pp. 17–22, 1955, 303, pp. 8–15, 304, pp. 2–6, 307, pp. 2–8, 309, pp. 1–2, 1956, 317, pp. 2–20, 323, pp. 4–14, 1959, 357, pp. 4–5, 359, pp. 11–14; G. Gasparini, Templos coloniales de Venezuela, Caracas, 1957; G. Kubler and G. Soria, Art and Architecture in Spain and Portugal and Their American Dominions, 1500–1800, Harmondsworth, 1959; Cat. Venice Biennale XXXI, Venice, 1962.

Centers of artistic interest. Caracas. The capital of Venezuela, Caracas was founded in 1567 by Diego de Losada with the name of Santiago de León de los Caracas after a local Indian tribe. Its plan (FIG. 737) was based on straight lines with the streets oriented toward the four cardinal points. The town was rebuilt after the violent earthquakes of 1753 and 1812, and most of the examples of colonial architecture have disappeared. Another reason for the disappearance of remains of the past is the transformation of the city due to the enormous increase in population immediately after World War II. No religious buildings survive from the colonial period with the exception of the Cathedral, with its lovely façade, the Church of S. Francisco, noted for its colonial altars, and the Candelaria church, all considerably rebuilt. Of the civil architecture, inspired by the houses of southern Spain, only a few elegant portals in plateresque style and some patios remain (either modified or transformed at a later date), such as those of the Javier (1736), Granja, and Miranda houses, the Chavez College of 1783, and the houses in the La Pastora and S. José quarters.

In the center of town is Plaza Bolívar containing a bronze statue of the national hero. In 1938 the architect Cipriano Dominguez completely transformed this area (Centro Simón Bolívar) and surrounded the Plaza with administration buildings in the "international style," skyscrapers, and imposing commercial buildings. The Centro Bolívar is divided by a main artery running on four levels, three of which are subterranean. Other public buildings distinguished by an extremely modern functional style are the Capitol (with paintings in the Elliptical Salon), the Panthéon Nacional (containing Bolívar's tomb), and the various ministries built since 1936. Recently several imposing architectural complexes have given Caracas the appearance of a city of the future. Outstanding among these is University City (Ciudad Universitaria), by Villanueva, with large buildings for the individual faculties, library, and auditorium; there are murals and windows by Fernand Léger, sculpture by Jean Arp, a mobile by Alexander Calder, and statues by Henri Laurens. Here painting, sculpture, and stained glass are completely integrated in a coherent architectural complex of great buildings. Also notable are the Museum of Fine Arts by Niemeyer; the skyscrapers of the Centro Polar; the Teatro del Este by Vegas and Galia; the Maracay, Humboldt, and Tourism hotels; the Casa Monagas Club by Vegas and Galia; the Junco Country Club by V. Garatti; the pavilion of the Angloven Automobile Showrooms by Vegas and Galia; the new stands of the National Stadium by Villanueva; and the recent Banco Obrero housing complex, also by Villanueva, with its lively multicolored façades. In the suburbs are the San German building by Graziano Gasparini, the Villa Planchart by Giò Ponti (1953), Villa Villanueva, and the Church of St. Anne at El Junco.

Interesting art collections are to be found in the Museo de Arte Colonial, the Museo Nacional de Bellas Artes, and the Galeria de Arte Contemporaneo.

BIBLIOG. C. R. Villanueva, La Caracas de ayer de hoy, Caracas, 1943.



Caracas, plan of center. (*a*) La Pastora quarter; (*b*) Panthéon Nacional; (*c*) S. José quarter; (*d*) Capitol; (*e*) Cathedral; (*f*) Centro Simón Bolívar; (*g*) Candelaria quarter; (*h*) Museo Nacional de Bellas Artes; (*i*) University City; (*j*) National Stadium; (*k*) race track in El Paraiso area; (*l*) El Valle quarter; (*m*) National Park.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Maracaibo. The city was founded in 1571 by Alonso Pacheco under the name of Nueva Zamora and was destroyed by pirate attacks in the 17th century. Today the town is a great industrial center with oil refineries and a busy port. There are a few survivals of the colonial period, and near the docks are some interesting adobe houses. The great urban development dates from 1910. Modern constructions in the international architectural style include the Zulia University buildings and the merchant marine academy.

Mérida. The capital of the state of Mérida, this city possesses a few colonial buildings and many impressive modern ones such as those of the University of the Andes (founded 1785). The Museo del Estado de Mérida, at the University, contains an interesting collection of paintings.

Valencia. Founded by Alonso Diaz Moreno in 1555, this was the capital of Venezuela in the years preceding the War of Independence. As an important political and cultural center, the city has today completely transformed its appearance since its adoption of modern town-planning and architectural methods. In this, Valencia follows the example of numerous other towns of Venezuela — particularly Caracas. The capital of the state of Carabobo, Valencia preserves an 18th-century Cathedral; also of note are the Capitol and the Municipal Theater.

Francesco Negri Arnoldi

Illustrations: 2 figs. in text.

VERMEER, Jan (Johannes). Dutch painter (b. Delft, 1632; christened Oct. 31 of same year; d. Delft, 1675, buried Dec. 15).

The belated acknowledgment of Vermeer's greatness can be traced to a lack of appreciation of his art during the 17th century that was reflected in works by S. van Hoogstraeten (*Inleyding tot de Hooge Schoole der Schilderkonst*, Rotterdam, 1678) and A. van Houbraken (1718–21). Vermeer is not mentioned in the first of these works, which names his presumed teacher, Carel Fabritius (q.v.); in the second, Vermeer's name appears without comment. Van Houbraken's source was a description of Delft by Dirck van Bleyswijk (1667, p. 859), in which Vermeer's name appeared, with the year of his birth, in a list of Delft artists living at that time. The same work (p. 854) contains a poem by A. Bon on the death of Fabritius that ends with an evocation of Vermeer as the phoenix who would rise to succeed the master.

An 18th-century description of the town of Delft by R. Boitet, which deals extensively with local artists of the second half of the 17th century, mentions Fabritius but ignores Vermeer. Biographies of Dutch artists published in the 18th century (J. C. Weyerman, *De Levens-beschryvingen der Nederlandsche Konst-schilders*, 4 vols., The Hague, Dordrecht, 1726–69; J. van Gool, *De nieuwe Schouburg der Nederlantsche Kunstschilders en Schilderessen*, 2 vols., The Hague, 1750–51) also ignored Vermeer. He is named in one contemporary source (B. de Monconys, 1665, II, p. 149).

Vermeer's father, Reynier Jansz Vos, who later became known as Reynier van der Meer or Vermeer, was admitted to the Delft guild in 1631 as an art dealer; it can be presumed (see below) that after his father's death in 1655 Jan assumed direction of the art shop. On Apr. 5, 1653, Vermeer married Catharina Bolnes, daughter of a wealthy Catholic family from Gouda. On Sept. 29 of the same year Vermeer became a master painter of the Delft guild; he made a down payment on the admission fee and paid the balance in 1656. During the years 1662–63 and 1669–70 he was one of the heads of the guild. Other documents speak both of money borrowed and of security offered by the artist.

Documents that appeared after the artist's death are of special interest; they include the artist's inventory, although it does not include a list of his own paintings, and documentation of the measures taken by his widow and his trustee Anton van Leeuwenhoek to satisfy the artist's creditors. In 1676 Vermeer's widow stated that because of the war with the French her husband had been unable to earn money and that, in order to feed his eleven children, he had had to sell at a loss those works which he had purchased as an art dealer. Many of his paintings — and not only those of his later period — must have been in his possession at his death (though in 1663 De Monconys either was not able or was not permitted to see even one of these); this fact probably contributed to the obscurity in which Vermeer's work was shrouded both in Delft and elsewhere. The Delft printer Dissius (d. 1695) owned 19 paintings by Vermeer, which he had probably acquired when the artist's property was sold at auction (Mar. 15, 1677); no description or catalogue of this auction has been found, but there exists a catalogue of a second auction in Amsterdam (May 16, 1696) in which the paintings are described (G. Hoet, *Catalogus of Naamlijst van schilderyen*, The Hague, 1752–70). They were sold together with another painting that belonged to the art dealer Diego Duarte (F. Muller, *De Oude Tijd*, Haarlem, 1870, p. 397). This catalogue is a valuable document; with the exception of five paintings, all the works mentioned in it can be identified as paintings that are now well known. In 1677 the art dealer J. Coelenbier (Columbier) had in his house at Haarlem 26 paintings that had belonged to Vermeer; he was charged with selling them for the benefit of one of the late artist's creditors. Most of these works probably originated in Vermeer's art shop.

A cautious interpretation of all reliable data leads to the conclusion that from the time that he entered the guild Vermeer painted very little, perhaps only one or two paintings a year. The fact that he, like many other artists, often borrowed money during his lifetime is not necessarily an indication of hardship. In all likelihood he was quite capable of keeping himself and his family decently, with the support of his mother-in-law, who was wealthy (as can be ascertained from documents), and through his activity as an art dealer. It was only toward the end of his life in 1672 that the French invasion completely ruined his business. A high value was set on what he sold, or rather what his widow disposed of after his death in order to pay their debts; for instance, the baker Hendrik van Buyten accepted two genre pieces by Vermeer in lieu of a sum of 617 florins due for "bread supplied." Both the fact that he had credit at the baker's for such a long time and for such a large amount of money and the estimate of the value of the two paintings testify to the esteem enjoyed by the painter as a citizen and as an artist.

Why was so little notice taken of Vermeer? Surely the reason could not merely be that he painted so little. Carel Fabritius, who was killed accidentally at the age of thirty-two, left fewer works, yet his reputation was well established in the 17th century, extending even beyond Delft. It must have been that Vermeer painted mainly for his own pleasure or for that of a small circle of friends. More than was usual in the 17th century, he must have held himself aloof from the normal social relationship between patron and artist. Even before Thoré (Bürger; 1866) expressed his enthusiasm for the artist (he discovered several neglected works), some individual connoisseurs, dealers, and amateur collectors had come to appreciate Vermeer's greatness. Lebrun judged him "un très grand peintre" (*Gallerie des peintres Flamands, Hollandais et Allemands*, II, Paris, 1792, p. 49); R. van Eynden and A. van den Willigen called him "the Titian among the modern painters of the Dutch school" (*Geschiedenis der vaderlandsche schilderkunst*, I, Haarlem, 1816, p. 164); and C. Immerzeel mentions "in the Hague . . . a splendid piece painted by him. Bought in 1822 for 2,900 florins" (*De levens en werken der Hollandsche en Vlaamsche Kunstschilders*, III, Amsterdam, 1843, p. 180). Contemporary art historians have rectified Thoré's incorrect attributions of various works to Vermeer [there are several Dutch painters called Vermeer (or van der Meer; ThB, XXXIV, pp. 261–76), whom Thoré confused with the Delft artist], paintings and documents have been discovered and studied, a chronology has been established, falsifications have been detected, and iconographic and stylistic problems have been resolved. As a result of these investigations, some have taken a more critical view of the artist's work (A. Berendsen, *Verborgenheden uit het oude Delft*, Zeist, 1962, p. 89).

Presently 35 paintings have been recognized as authentic works by Vermeer (A. B. de Vries, 1948; V. Bloch, 1954; L. Gowing, 1962), but doubts persist regarding the authenticity of two of these pieces (*Young Girl with a Flute* and *The Girl with a Red Hat*, both, Washington, D.C., Nat. Gall.). Some

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

16 of the paintings are signed (P. Johansen, 1920, pp. 195 ff.); and two are dated: *The Procuress* (1656; PL. 334) and *The Astronomer* (1668; Paris, Coll. Baron Édouard de Rothschild). The counterpart of this piece, *The Geographer* (PL. 339), has a date, 1669, which was added later and which probably is a retracing of the original date that had vanished from the canvas. No drawings are known, although there have been serious attempts to ascribe drawings to Vermeer (E. Plietzsch, 1939, p. 2; J. Q. van Regteren Altena, *Holländische Meisterzeichnungen des siebzehnten Jahrhunderts*, Basel, 1948, pl. 43; J. Q. van Regteren Altena, 1960, p. 175).

The warm colors of *The Procuress* and the diffuse chiaroscuro and sensitive modeling of the surface clearly relate it to works of the school of Rembrandt (by Nicolaes Maes, q.v.; Christoph Paudiss; and Barent Fabritius) of the period 1650–60. In any case, it seems likely that Carel Fabritius, who worked at Delft 1652–54, familiarized Vermeer with this tradition. A unique and apparently characteristic element of Vermeer's artistic vision is the use of pure yellows and reds, as in the garments of the figures in *The Procuress*; these colors reappear in the Oriental rug in the foreground of the picture. It has repeatedly been asserted, because of its composition with half figures, that the subject was derived from the Utrecht school, but the argument is not convincing. *Christ in the House of Martha and Mary* (PL. 334) must have been painted before *The Procuress*, and in it a revival of an Italianism derived from Utrecht is noticeable, especially in the Italianate pose (cf. works of Andrea Vaccaro in Naples). A sense of form and color closely related to that of Hendrick Terbrugghen (q.v.; cf. II, PL. 186) and Jan Baptist Weenix is also present. When this painting, which was signed, was discovered in 1901, its possible attribution to Johann van der Meer of Utrecht was considered, and this theory is still defended by Swillens (1950, p. 163).

The third painting that belongs to the (presumed) earliest group of Vermeer's works is *Diana and Her Companions* (The Hague, Mauritshuis). The signature, which was almost invisible in 1895, became more legible after a careful restoration in 1954, though it is still badly deteriorated (A. B. de Vries, *B. of the Rijksmuseum*, II, 1954, pp. 40–42). Although the surface has suffered, the harmony of yellow, red, and blue characteristic of Vermeer is so evident that one might draw the conclusion that the work was painted shortly before *The Procuress*. Swillens (1950, pp. 157–61, pl. 33) holds that it is probably by Reynier Jansz Vos, Vermeer's father; opposed to this attribution is J. G. van Gelder (*Oud-Holland*, LXXI, 1956, p. 245). Van Regteren Altena (1960) has tried to expand the number of early Vermeer paintings by including certain newly ascribed pieces, of which the most noteworthy is an interior with a woman refusing a glass of wine (London, Nat. Gall., No. 2552), painted in Delft probably about 1660.

However one interprets the artist's earliest work, it remains impossible to identify Vermeer's teacher by stylistic analysis. Perhaps Vermeer learned the craft from a painter in Delft who did not, however, inspire him as an artist. An explanation that would reinforce the concept of Vermeer as a unique artist would be that he drew his inspiration from the art of the past with which he came in contact through his father's art shop and through engravings.

Regarding the chronology of Vermeer's paintings, apart from the earliest ones, which remain difficult to date, contemporary art historians are generally in agreement. Only Valentiner (1932) and Malraux (1952) differ: Valentiner dates a greater number of paintings to the earliest period because they are assumed to have preceded certain works of P. de Hooch (q.v.), which must be dated about 1655; Malraux places a great many of Vermeer's greatest creations in the 1660s and 1670s, basing his theory on the assumed ages of the figures in the paintings, whom he believes represent members of Vermeer's family.

Before 1660 and immediately after the artist had executed his youthful works, he is assumed to have done the following paintings: *A Girl Asleep* (PL. 333), *Girl Reading a Letter* (Dresden, Gemäldegal.), and the *Officer and Laughing Girl* (PL. 335). The painting in Dresden is noteworthy for its combination of splendid, warm colors [the dark green curtain and the still life recall the work of Willem Kalf (cf. V, PL. 313)], with the luminous construction of the space surrounding the figure. What Carel Fabritius had initiated in a modest way and with simple subject matter in *The Goldfinch* (V, PL. 324) was elevated by Vermeer into an art that expressed human dignity. In *A Girl Asleep*, the still life in the foreground is balanced by the light and dark surfaces of the background, with its many verticals and horizontals, and by a perspective view typical of Delft art, as in the popular interiors by P. van Hooch (cf. V, PL. 317). The father of this art of perspective was, again, Carel Fabritius, whose ability had already been recognized by his contemporaries.

The *Officer and Laughing Girl* is also a miracle of perspective within the limited area of the tiny room where the pompous officer, who is seen from the back and placed in the shade, sits in front of the laughing girl. For the first time, in this work, Vermeer achieved complete limpidity; and for the first time he employed the *pointillé* technique, using small grainy touches of paint to break up the light. This same technique relates three other paintings to this one: two views of Delft and *The Cook* (PL. 335). *The Cook* is, perhaps, Vermeer's most artfully constructed and most penetrating interpretation of an everyday scene. The pans, jars, baskets, and loaves can be regarded as abstract forms without prejudice to the realistic content of this work. The light is even more radiant and bright than in the *Girl Reading a Letter*. In opposition to other scholars, the author would place *The Lacemaker* (Louvre) in the same period as *The Cook*, reasoning that the tight *pointillé* and the strong coloring are too violent and open to belong to the artist's later periods. The girl in each painting, wholly absorbed in her activity of the moment, seems to express the same conception and the same observation of domestic work and bliss. The sober construction and perfect harmony of color transform the simple subject into a work of absolute beauty.

The above-mentioned two views of the town — *The Little Street* (PL. 336) and *View of Delft* (IX, PL. 20) — were probably painted in the same period. They are impressive for their sense of striking photographic authenticity: it is possible that Vermeer used a camera obscura. But more important than the observation of a charming subject is the structure of the paintings — the purity of horizontals and verticals, the succession of colored rectangles that intersect the flowing accents of movement in the foreground. At the middle of the 17th century there was a tendency in Dutch art toward a classicistic, balanced structure and a range of light colors. Vermeer's particular talent fused this tendency with the grainy splendor of his colors and added an intense feeling of space and depth, no matter what the limits of this space — the narrow interior of a tiny room or the expanse of a quiet Delft canal.

All the other known paintings by Vermeer are interiors or portraits; the portraits are of a genrelike or at least unofficial nature. The people who are depicted in these whitewashed rooms, against light walls on which are hung large paintings or maps, pose in a cautious, reserved fashion, with music or a glass of wine, writing or reading a letter. The *Young Woman Reading a Letter* (after 1660; Amsterdam, Rijksmus.) repeats the motif of the Dresden painting of a similar subject. The theme in the Amsterdam work is so concentrated as to achieve an effect of monumental simplicity. The lines of chair and table delimit the figure in space; the map on the wall serves to break up the surface. The *Woman with Water Jug* (Met. Mus.) has more complicated spatial effects with stronger color accents; these indicate an earlier period (before 1660). A similar difference exists between two interiors, *Man and Woman Drinking Wine* in Berlin (Mus. Dahlem) and *Girl with Wine Glass* in Brunswick (Herzog-Anton-Ulrich-Mus.), although in both paintings the artist used the half-open window adorned with a small coat of arms as an exhilarating element. Among the rich interior compositions, in which the colorful furniture contributes to the suggestion of depth, are the music scenes (London, Buckingham Palace, Royal Colls.; Boston, Gardner Mus.). In these paintings the figures are placed against the rear wall, framed by musical instruments, mirrors, and paintings. Eisler (1916) has attempted to date Vermeer's works according to the artist's

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

treatment of space, while Plietzsch (1939, p. 38) sees the artist as a man obsessed by the idea of conquering the dimension of depth in his paintings.

The Letter (II, PL. 210), however refined in its perspective and large number of interrelated subjects, is less remarkable than the *Girl Reading a Letter* in Dresden or the more simply conceived *Letter Writer* in Ireland (Russborough, Co. Wicklow, Sir Alfred Beit Coll.), *Mistress and Maid* (New York, Frick Coll.), and *Letter Writer* in Nassau (Lady Oakes Coll.). The three last-named pictures belong to the late period of the artist's activity. Sometimes the refinement depends more on a very delicate technique that uses changing colors than on a complicated structure. The *Lute Player* (Met. Mus.) is another example of slacker and softer brushwork. That this group of paintings dates from the end of the 1660s is proved by their stylistic affinity with *The Astronomer* in Paris and *The Geographer* in Frankfurt, in which the refinement of the treatment of light and materials (e.g., the folds of the rug) attains a level of sensitivity and a wealth of nuances that, although lacking in earlier paintings, were foreshadowed in *A Woman Weighing Gold* (PL. 337) and the *Girl with a Pearl Necklace* (Berlin, Mus. Dahlem). Vermeer's sober and precise rendering of space persisted into his late period, as is evident in the *Young Woman Standing at a Virginal* (PL. 338). The similar *Young Woman Seated at a Virginal* (London, Nat. Gall.) is an example of perfect treatment of the surface combined with a complete lack of expressiveness. The *Young Woman with Guitar* (London, Kenwood, Iveagh Bequest) is also a painting of great refinement, but it lacks the vigorous structure of the artist's earlier work.

Vermeer seems to have preferred genre — people playing music, reading or writing letters, enjoying leisure or work — and he carefully placed his figures in rooms, even when the space of these rooms is suggested only by the expanse of a yellow wall (as in *The Lacemaker*). Light and air give depth to his scenes, which are composed with great attention to detail. In the *Head of a Young Girl* (PL. 340) in The Hague and the similar portrait of a young girl in Houston (Charles B. Wrightsman Coll.), there is no clear delimitation of space; the colors are incredibly pure and the soft skin is unbelievably delicate; the eyes of the two girls catch the light, as do the pearl earrings they wear.

Vermeer cannot be regarded merely as a painter of genre scenes, although his ability in this field was extraordinary. The *Allegory of the New Testament* (PL. 339) and *The Painter in His Studio* (detail, PL. 338) are among the works that have attracted particular attention in recent years for their iconography. As early as 1914 Barnouw demonstrated that Vermeer's allegory in the first painting is based on the description of Faith in Cesare Ripa's *Iconologia* (1593; Dutch trans., 1644), particularly on the description of the Catholic faith; this would indicate that the artist lived in a Catholic environment or at least that his works were commissioned by Catholics. Apart from the symbols drawn from Ripa's work, the artist stressed the Catholic interpretation in the large painting of the Crucifixion in the background, a freely conceived copy of a painting by Jacob Jordaens. This painting does not fall within the framework of 17th-century Dutch allegorical art. It is not an allegory in the usual sense of the word but is rather the rendering of an interior (executed with the artist's customary refined sense of space) in which a model representing Faith is placed and in which certain selected objects acquire a symbolical importance that transcends the genre approach. It is sometimes difficult in this work to distinguish between veiled symbolism and sheer ingenuity of technique: is the crystal globe a symbol of the pure faith or is it merely a device to reflect light and distort perspective?

In the auction in Amsterdam on May 16, 1696, was included one of Vermeer's 21 paintings, "The Portrait of Vermeer in a Room with various accessories, most daintily painted by himself." If this painting is the same as a work in which the Art of Painting was depicted (given in 1676 by Vermeer's widow to her mother and, notwithstanding her protest, sold publicly on Mar. 16, 1677, by Anton van Leeuwenhoek, trustee of Vermeer's estate), this would prove that as early as twenty years after Vermeer's death the original title of the painting had been forgotten. The rediscoverers of Vermeer's art in the 19th century rightly in the meantime had been added the signature of P. de Hooch).

Modern art historians have considered *The Painter in His Studio* with special interest, and their conclusions have influenced the modern view of Vermeer's art. De Tolnay's (1953) thesis to the effect that this painting contains an allusion (in the map of the United Provinces) to a return to a beautiful past, when artists enjoyed princely privileges in the Netherlands, has no methodological or historical foundation. Sedlmayr's (1962) interpretation, according to which the Art of Painting here symbolizes Holland's glory, is no more convincing. In Ripa there is a clue to the mystery of the central figure: the model who is being painted is Clio, the Muse of history. The painter paints history — or would it be more exact to say that he is inspired by history? History, crowned with laurel, becomes almost a symbol of fame. However differently Van Gelder and Emmens (1958) and Steneberg (1957) interpret Clio and the objects in the painting, Vermeer's work is an allegory of the art of painting and not a straightforward representation of the artist's studio. The "Burgundian" costume worn by the painter was intended to take him out of the 17th century and to give him an archaic look. This work is undoubtedly one of the most successful illusionistic representations of space ever achieved by Vermeer. The curtain blowing upward is halfway between illusion and reality, while the chair, table, and tiles punctuate the perspective depth of the painting with a vigorous brightness of color and form. Swillens (1950) believed that he could reconstruct Vermeer's actual studio on the basis of the faithful rendering in this and other paintings. He and Hulthén (1949) came to the conclusion that the artist was sitting at his easel at a short distance from his model, and this resulted in a marked foreshortening that seems to draw the viewer into the space depicted. This exaggerated artificial perspective, together with the intense color and light, was a departure from everyday realism.

Since the Vienna painting has been interpreted as an allegory, the question arises as to whether other of Vermeer's genre pictures may have a deeper, or at least a different, significance. Could it be that *The Geographer* and *The Astronomer* are allegories of the application of human thought to the problems of the earth and the universe? Do the paintings and maps that adorn Vermeer's interiors have a symbolical significance? *The Woman Weighing Gold*, in which the subject stands in front of a painting of the Last Judgment, may represent Vanity; the *Girl with a Pearl Necklace* may perhaps allude to Luxury.

A. P. de Mirimonde (1961) has attempted to interpret the numerous music scenes as representations of profane love, a theme Vermeer had treated straightforwardly in his youth in *The Procuress*. It cannot be a mere coincidence that the musicians in the music scene in Boston (Gardner Mus.) are depicted below a copy of Dirk von Baburen's *Procuress* (II, PL. 187). A reference to love can be seen in the chivalrous offering of a glass of wine, in the writing or reading of a letter, in the presence of a second instrument that will be played by someone who is yet to arrive. Vermeer's evasive style, however, precludes a too-literal interpretation. Moreover, his genre paintings lack the anecdotal and picturesque details that make the domestic, bourgeois, and human art of his contemporaries so comprehensible and amusing. Perhaps the essential difference lies in the fact that Vermeer never was (and never wanted to be) a slave to the relations between client and artist. Because of this his art became less familiar and realistic but rose above that of his contemporaries as a pure expression of Dutch classicism. His artistic vision, his treatment of color and light, and his technique are less bound to his own period and environment than those of any other Dutch artist.

Nothing is known of any apprentices of Vermeer, and it is difficult to ascertain how great the influence of Vermeer's art was upon the younger artists of that period. De Vries points out that several talented contemporaries of Vermeer (e.g., Caspar Netscher) independently developed a similar classical style. Gabriel Metsu's *The Letter Received* and his *Young Man Writing a Letter* (both, Russborough, Co. Wicklow, Ireland, Sir Alfred Beit Coll.), a painting by Jacob Ochtervelt, and a few works by Cornelius de Man and Michiel van Musscher show clear traces

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

of direct influence, although none of these artists completely abandoned the bourgeois genre with its taste for anecdote. The rediscovery of Vermeer in the 19th century extended to a number of artists, many of whom, such as Claus Meyer (1856–1919), were but slavish imitators of the master. The renewed interest in Vermeer's limited production led to the appearance of many forgeries of his work (V, PL. 236; see FALSIFICATION AND FORGERY). Hans van Meegeren (1889–1947), a less than mediocre Dutch painter, produced one of the most successful forgeries of Vermeer's work in the *Christ at Emmaus* (Rotterdam, Mus. Boymans-Van Beuningen).

However, with regard to attributions, the only unresolved problem concerns the *Portrait of a Woman* (Budapest, Mus. of Fine Arts). The portrait of a man in Brussels (Mus. B. A.) is surely by Nicolaes Maes. A drawing signed by Jan Casteleyn so closely resembles the male portrait in The Hague (Foundation of Nederlands Kunstbezit) that it is possible to attribute the painting to that almost-unknown artist (A. Welcker, *Oud-Holland*, LXI, 1946, pp. 150–54).

BIBLIOG. *Sources*: B. de Monconys, Journal des Voyages, II, Lyons, 1665; D. van Bleyswijk, Beschryvinge der stadt Delft, II, Delft, 1667; A. van Houbraken, De Groote Schouburgh der Nederlandtsche Konstschilders en Schilderessen, 3 vols., Amsterdam, 1718–21; F. D. O. Obreen, Iets over den Delftschen schilder Johannes Vermeer, Arch. voor Nederlandsche Kunstgeschiedenis, IV, 1881–82, p. 289 f.; A. Bredius, Iets over Johannes Vermeer, Oud-Holland, III, 1885, pp. 217–22; A. Bredius, Nieuwe Bijdragen over Johannes Vermeer, Oud-Holland, XXVIII, 1910, pp. 61–64; A. Bredius, Italiaansche Schilderijen in 1672 door Haagsche en Delftsche Schilders beoordeeld, Oud-Holland, XXXIV, 1916, pp. 88–93; A. Bredius, Schilderijen uit de Nalatenschap van den Delftschen Vermeer, Oud-Holland, XXXIV, 1916, pp. 160–61; L. G. N. Bouricius, Vermeeriana, Oud-Holland, XLII, 1925, pp. 271–73; E. Neurdenburg, Johannes Vermeer, Oud-Holland, LIX, 1942, pp. 65–73; A. van Peer, Was Jan van Meer katholiek?, Katholiek Cultureel Tijdschrift, II, 1946, pp. 468–70; E. Neurdenburg, Nog enige opmerkingen over Johannes Vermeer van Delft, Oud-Holland, LXVI, 1951, pp. 34–44; A. van Peer, Rondom Jan Vermeer van Delft, Katholiek Cultureel Tijdschrift Streven, IV, 1951, p. 615; A. J. J. M. van Peer, Drie collecties schilderijen van Jan Vermeer, Oud-Holland, LXXII, 1957, pp. 92–103; A. J. J. M. van Peer, De Doop van Jan Vermeer, Arch. van de Geschiedenis van de Katholieke Kerk in Nederland, II, 1960, p. 229.

General: T. E. J. Thoré (W. Bürger), Van der Meer, Paris, 1866; C. Hofstede de Groot, Beschreibendes und kritisches Verzeichnis, Esslingen, 1907, I, p. 585 f. (Eng. ed., London, 1907, p. 579 f.); C. Hofstede de Groot, Jan Vermeer en Carel Fabritius, Amsterdam, 1907–30 (Eng. trans., E. H. Wyche, Amsterdam, 1909); V. N. Lazaref, Vermeer, Moscow, 1933; E. Plietzsch, Vermeer van Delft, Munich, 1939 (2d ed.); E. Trauscholdt, ThB, XXXIV, pp. 265–75 (with bibliog.); A. B. de Vries, Jan Vermeer van Delft, Amsterdam, 1948 (2d ed.; Eng. ed., New York, 1948); P. T. A. Swillens, Johannes Vermeer, Painter of Delft, Utrecht, 1950 (with bibliog. and reproductions of documents); A. Malraux, Vermeer de Delft, Paris, 1952; V. Bloch, Tutta la pittura di Vermeer di Delft, Milan, 1954 (Eng. ed., New York, 1963); L. Goldscheider, Jan Vermeer, London, 1958; L. Gowing, Vermeer, New York, 1962; V. Bloch, Vermeer, Paris, 1966; In the Light of Vermeer, The Hague, Paris, 1966 (cat.). *Special problems*: A. J. Barnouw, Vermeers zoogenaamd "Novum Testamentum," Oud-Holland, XXXII, 1914, pp. 50–54; M. Eisler, Der Raum bei Jan Vermeer, JhbKhSamml des allerhöchsten Kaiserhauses, XXXIII, 1916, pp. 213–91; P. Johansen, Jan Vermeer van Delft. À propos de l'ordre chronologique de ses tableaux, Oud-Holland, XXXVIII, 1920, pp. 185–99; W. R. Valentiner, Zum 300. Geburtstag Jan Vermeers, Oktober, 1932, Pantheon, X, 1932, pp. 305–24; L. Huyghe, Vermeer et Proust, L'Amour de L'Art, XVII, 1936, pp. 7–15; B. Nicolson, Vermeer's "Lady at the Virginals," London, 1946; J. Q. van Regteren Altena, Een jeugdwerk van Johannes Vermeer, Oud-Holland, LXXV, 1960, pp. 175–94; A. P. de Mirimonde, Les sujets musicaux chez Vermeer de Delft, GBA, 6th ser., LVII, 1961, pp. 29–52; C. Seymour, Jr. Dark Chamber and Light-filled Room: Vermeer and the Camera Obscura, AB, XLVI, 1964, pp. 323 ff.; A. Lessing What is Wrong with a Forgery, J. of Aesthetics, XXIII 1965, pp. 461 ff.; H. Schwartz, Vermeer and the Camera Obscura, Pantheon, XXIV, 1966, pp. 170 ff. *The Allegory of Painting*: K. G. Hulthén, Zu Vermeers Atelierbild, Konsthistorisk Tidskrift, XVIII, 1949, p. 90 f.; H. Sedlmayr, Der Ruhm der Malkunst, Festschrift f. Hans Jantzen, Berlin, 1951, p. 160 f.; C. de Tolnay, L'Atelier de Vermeer, GBA, 6th ser., XLI, 1953, pp. 265–72; K. E. Steneberg, Vermeers Målarfilosofi, Symbolister, I, 1957, p. 125; J. G. van Gelder and J. A. Emmens, De Schilderkunst van Jan Vermeer, Utrecht, 1958; K. Badt, Modell und Maler von Jan Vermeer, Cologne, 1961; H. Sedlmayr, Jan Vermeer, "De Schilderkonst," Hefte des Kunsthist. Seminars der Universität, Munich, 7–8, 1962. W. Hager, Vermeer van Delft: Die Malkunst, Stuttgart, 1966.

Horst GERSON

Illustrations: PLS. 333–340.

VERONESE, PAOLO (PAOLO CALIARI). Italian painter (b. Verona, 1528; d. Venice, 1588). His birth date, documented by a Veronese registry entry of 1529 stating that Paolo, the last of five sons of one Gabriele *lapicida*, was then one year old, is confirmed by an obituary notice in the Church of S. Samuele (Venice) testifying that he died in 1588 at the age of sixty. C. Ridolfi (1648) says that Gabriele Caliari taught his son to model in clay. Although Vasari states that Veronese studied under Giovanni Caroto, V. Borghini (1584) considers him a pupil of Antonio IV Badile; Borghini's view is strengthened by a document of 1541 which refers to "Antonius Badilus pictor q. Hieronymi" and which mentions a "Paulus ejus discipulus seu garzonus." At an early age Veronese absorbed, in the artistic atmosphere of Verona, the teachings of a pictorial culture backward in comparison with that of Venice but nonetheless quite original in its coherent taste, tending to heighten color by juxtaposition and by a breaking-up of light. Veronese became part of an avant-garde group of painters that included Domenico Riccio (known as Brusasorci), Bernardino India, G. B. Zelotti, and Paolo Farinato, who turned their backs on the past to accept the new mannerist style that had taken over in Mantua with Giulio Romano (q.v.) and his collaborators, among them Francesco Primaticcio (q.v.). In Verona, moreover, not only had the classicism of Raphael (q.v.) taken root (through the Emilian painters), but also there developed a fashion for the Michelangelesque (through prints). C. Ridolfi in 1648 pointed out the importance of the Emilian painters, especially Parmigianino (q.v.), in the formation of Veronese's style.

The early years of Veronese's artistic activity are marked by a series of works tending toward a mannerism filtered through his personality and transformed into something new and original by his special feeling for color. One of Veronese's earliest works, a canvas with the daughter of Jairus, painted in 1546 for the Church of S. Bernardino in Verona, has been lost. The small Bevilacqua-Lazise altarpiece, with St. John the Baptist, St. Louis of Toulouse, and patrons paying homage to the Virgin (Verona, Mus. di Castelvecchio), painted in 1548 or shortly thereafter, may be considered Veronese's first known work, since it is difficult to confirm the same date for the *Christ among the Doctors* (Prado), as proposed by M. Levey (1960). Since the Bevilacqua-Lazise altarpiece, notwithstanding its spatial structure, still evidences a scholastic orientation, there is no clear and decisive documentation of Veronese's taste before 1551. In the portrait of Francesco Franceschini, dated 1551 (Sarasota, Ringling Mus.), Veronese used Brescian schemes to balance the figure in space; but in the fresco decoration of Sanmicheli's Villa Sorenza, Treville di Castelfranco Veneto, executed together with G. B. Zelotti (a decoration of which only fragments remain; Castelfranco, Cath. sacristy; Venice, Seminario Patriarcale; Vicenza, Mus. Civ.), he brought a breath of innovation to the intellectual concept, which moved closer to the mannerism of Mantua (Giulio Romano) and Emilia (Parmigianino). In the altarpiece executed perhaps in 1551 or shortly thereafter for the Giustiniani Chapel of the Church of S. Francesco della Vigna, Venice, Veronese was more circumspect, turning to the balanced Titianesque structures of the Pesaro altarpiece, but with a more decisive formulation of color in tonal areas. In 1552 Veronese, working beside Brusasorci, Farinato, and Battista Agnolo del Moro, painted the *Temptation of St. Anthony* for the Cathedral of Mantua (Caen, Mus. B. A.), in composition a genuinely manneristic work with clear Michelangelesque elements. The following year Veronese had a clamorous success in the Palazzo Ducale in Venice, introduced by the mediocre mannerist Giovanni Battista Ponchino (champion of the Michelangelesque in the Veneto region) and the untalented imitator Zelotti. In these early years of the 1550s Veronese and Zelotti worked more or less in the same idiom, based on similar cultural premises and on the same work program, so that for a few years they advanced side by side; yet, while the former renewed himself each day, the latter developed in an academic decorative direction. On the ceilings of the Sala del Consiglio dei Dieci (1553), with the Jupiter striking the Vices with his bolts and the Youth and Old Age, the *sottinsù* foreshortenings (designed to be seen from below) in the manner of Giulio Romano are allied to the Michelangelesque; in the detail of the girl bending forward, however, is

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

revealed all of Veronese's refined coloring, reaching a peak of originality in the presentation of Juno bestowing her gifts on Venice. The figures, skillfully foreshortened, create, against the blue of the sky, clearly distinct zones of color that, juxtaposed, generate a blinding luminosity in which shadow itself becomes color. In the compartments of the Sala dei Tre Capi (ca. 1554) the images assume the aspect of sudden apparitions, while columns of glowing clouds diagonally traverse the sky, accentuating the unstable rhythm of the composition.

In the Church of S. Sebastiano, Venice, Paolo Veronese comes to the fore no longer as a subordinate worker, as in the Palazzo Ducale, but with the authority of a master. The ceilings of the sacristy (1555), those of the church (1556), and the frescoes of the nuns' tribune (1558) testify to a considerable enrichment of Veronese's pictorial idiom. In the Coronation of the Virgin (sacristy) the luminosity is intensified through the use of complementary colors. In the surrounding Evangelists an exquisitely manneristic formal tension is accentuated; they are articulated according to a principle that was to become fundamental to the style of Veronese: a dilation of the surfaces with controlled exaggeration so that the figures present the greatest possible areas of color, standing out against the blue background. On the ceiling of the church (the story of Esther) Veronese developed a system of construction with a lowered perspective, rigorously organizing the structure of the groups, daringly foreshortened and treated as faceted prisms set against a sky split in two by the plumb line of the architecture. The structurally complex *Coronation of Esther* was followed, in the *Triumph of Mordecai* (PL. 341), by a spectacular contrast between the foreground, with the figures and horses, and the background, with the tiny figures, almost dissolved in *plein air*, realized by a few strokes of light.

Together with basically decorative perspective works, Veronese was producing altarpieces, small devotional works, portraits, and broadly narrative paintings. To this period belong the delicate allegories for the ceiling of the Capitoline Museum (Rome); the Madonna and Child with St. Peter and a female martyr (PL. 342), Raphaelesque in its formal harmony; and the Holy Family with St. George and the infant John the Baptist (Oxford, Ashmolean Mus.).

On June 3, 1555, Veronese signed the contract for the altarpiece (a Transfiguration) for the high altar in the Cathedral of Montagnana, to be completed for Christmas of the following year. The group of Apostles below, realized with a manneristic formal approach, is balanced above by the Christ between prophets and angels, bathed in a halo of yellow light that, reflected in the garments of the figures, almost makes the group float insubstantially. The same rhythms, the same principle of ribbing and spatial segmentation that can be observed in the ceilings of S. Sebastiano, have been perfected in the tondos (1556–57) of the Biblioteca Vecchia di S. Marco, Venice. The balanced division of the vault of a small room in the Palazzo Trevisan in Murano (ca. 1556–58) allows the divinities, which symbolize the four elements, to be foreshortened against the open skies, while other figures, seated on the cornices counterbalance them, anticipating some of the brilliant perspectives of the decoration of Villa Barbaro (now Volpi) at Maser, near Treviso.

Contemporaneous with these are new portraits: Conte Giuseppe da Porto with his son Adriano (PL. 344), Contessa Lucia da Porto with her daughter Porzia (ca. 1556; Baltimore, Walters Art Gall.), a gentleman against a landscape (Budapest, Mus. of Fine Arts), and the *Portrait of a Lady* ("Bella Nani"; PL. 344). The full-blooded, stately portraits of Titian (q.v.) and the bewitching and intimate ones of Tintoretto (q.v.) are countered by Veronese's serene and elegant ones, in which the pictorial values are enhanced by a freshness that springs from the direct impression made by the model. But Veronese's serene naturalism is transfigured by the richness of his colors and the elegance of his compositional framework. The various narrative paintings are generally inspired by episodes from the Old and New Testaments, following the fashion created a decade earlier by Tintoretto, using complex and dramatic scenic devices. One of the oldest canvases (ca. 1553–54), rather small in size, is the *Noli me tangere* (London, Nat. Gall.), of a subtle Parmigianino-like elegance, significant for the rhythm that binds the figures to the architectural background. The two large scenes of the Presentation in the Temple (Dresden, Gemäldegal.) and the Anointing of David (PL. 345) can be dated in the middle of the 1550s. They are perhaps followed by the *Christ among the Doctors* (Prado), which bears the stylistically unacceptable date of 1548 (see above).

Veronese tried to conceive his compositions on a large scale, giving smaller proportions to his figures and at the same time relating them to monumental architectural scenographic settings. In the frescoes of the nuns' tribune in S. Sebastiano (St. Sebastian before Diocletian and the death of St. Sebastian, finished on Dec. 8, 1558, together with the entire wall strip), the compositional structure becomes more agile, more loosely articulated. On Oct. 26, 1558, Veronese presented the designs for the organ case and loft, of an austere Palladian classicism, realized, according to the inscription, by one "Domenego Marangon." Then in 1559 he painted the two shutters, with the Presentation of Christ in the Temple on the exterior and the Pool of Bethseda on the inside; in these scenes, however, the figures are of large proportions, bound to one another in alternating rhythms. Between 1559 and early 1561 Veronese executed the altarpiece for the high altar, with the Virgin, surrounded by angels making music, appearing to St. Sebastian and other saints, a work in which is evident a refined command of lighting and back-lighting.

Apparently shortly before this altarpiece Veronese painted the *Christ at Emmaus* (Louvre) and the *Feast in the House of the Pharisee* (Turin, Gall. Sabauda), executed for the Convent of SS. Nazaro e Celso in Verona. In the former, following Tintoretto's example, Veronese introduced his contemporaries into the Biblical scene, narrated with great naturalness. The latter is one of Veronese's masterworks (the perfect state of preservation of the canvas permits an appreciation of the entire complex chromaticism). In scenes like these, and in particular in the Turinese one, there is no focal point: the crowd is placed all along the stage, with each figure bound to its neighbor through reciprocal overlapping, balanced and counterbalanced effortlessly. Each element of the composition is singled out by its tonality, realized through distinct and pure colors, set side by side according to a contrapuntal principle that was occasionally complementary. Reflections and highlights pervade and bind the entire composition, animating it and heightening the solar luminosity of the entire work. The architectural elements, which Veronese undoubtedly assimilated from his contacts with Sanmicheli, Palladio, and Sansovino, become valid chromatic supports, sustaining the entire composition as it spreads out into the airy horizons. Veronese, in contrast to Venetian tonal painting, which is organized on scales of warm tones in masses and glazes and which in Titian melts into a burning and liquid material, creates a cosmos of crystalline structures, where the air is rarefied and where the colors glow with an absolute clarity.

D. von Hadeln (ThB, s.v.) logically supposed that the payment made to Veronese in 1560 by the Biblioteca Vecchia di S. Marco refers to the two figures of philosophers which belong with others by Tintoretto and G. Schiavone and which are characterized by their resplendent sense of color.

C. Ridolfi (1648) corroborates the tradition according to which Veronese went to Rome at the invitation of Girolamo Grimani, procurator for S. Marco. This trip, as detailed by L. Coletti (1939), would have taken place in the spring of 1562. Significant is Ridolfi's remark that Veronese went "not so much to see the pomp of the court, as was the common custom, but as a painter to see the magnificent buildings, Raphael's paintings, Michelangelo's sculpture. . . ." Undoubtedly the Roman sojourn, in addition to confirming his early infatuation with Michelangelo, permitted him to enjoy the Raphaelesque classicism with greater conviction.

L. Coletti holds that Veronese had begun the decoration of the Villa Barbaro (now Volpi) at Maser, which Palladio had built for the brothers Daniele and Marcantonio Barbaro, immediately after his return from Rome. E. Arslan (1962), for

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

plausible reasons, attributes the execution of the frescoes to 1561, confirming a recent supposition of R. Pallucchini (1960). The Maser decoration should be considered a *punctum saliens* of Veronese's artistic activity. The villa, one of Palladio's masterpieces, is modulated in such a way as to adapt itself to the slope of the hill and to appear spatially articulated in a series of scenographic viewpoints (cf. VIII, PLS. 434, 435). Veronese brilliantly understood this spatial rhythm, and his fresco cycle constitutes a marvelous critical interpretation of it. Beyond a complex architectural framework, which can almost certainly be attributed to Veronese's brother Benedetto, comprising fluted columns, trabeations, caryatids, and cornices, Veronese conceived open spaces illusionistically breaking through the curtain walls and opening the ceiling to reveal glimpses of the sky. The interior of the villa is transformed into a space open toward skies peopled with allegorical figures (XIII, PL. 351) and toward imaginary lands strewn with classical ruins. Veronese interpreted classical mythology with a modern approach to nature, an endless spatial dimension within which light and atmosphere triumph; this artistic concept, although pervaded by a Pandean spirit, is marked by a flawless serenity, set off in the frame of the luxuriant Venetian countryside.

For N. Ivanoff (1961), who studied the subject matter of the decoration of Maser (unquestionably suggested by Daniele Barbaro), the paintings celebrate the serene rural life that Marcantonio and his family led in the villa. In the Sala dell'Olimpo (VIII, PL. 102) divine Wisdom descends from heaven, expressing with a gesture the grace and protection accorded to the Barbaro brothers; around her are mythological divinities symbolizing the planets according to medieval astrological tradition. In the two lunettes of the Sala dell'Olimpo Veronese conjured up figures to represent Spring (PL. 345) and Summer with Autumn, and in these he provides perhaps the best example of his method of composing in successive ligatures of monumental rhythms. A placid extension of forms and a slow unfolding of poses characterize the felicitous harmony of these two representations. To the imaginary fables on the ceiling and on the lunettes Veronese added, without the slightest disturbance to the unity of the composition, episodes that he could have observed in the villa. Under the ceiling, on one side of the gallery, appear Donna Giustiniani Barbaro (PL. 346), wife of Marcantonio, with an old nurse and a child, and, on the other side, two youths, perhaps the older sons of Barbaro, one of whom holds back a dog trying to get at a monkey. Only through manneristic techniques could such apparently contrasting elements become a stylistically homogeneous vision.

The landscapes in the Sala dell'Olimpo are of a very high quality. Direct and generous brushwork brings together various elements, realizing complex scenographic compositions of a heightened luminosity, always enhanced by the architectural framework. Veronese's attitude toward nature was neither realistic nor, for that matter, impressionistic. As E. Tea (1954) points out, his art was always mnemonic, the daughter of mannerism. The landscapes of Maser are, in fact, bound to an evocation of the airy Alpine foothills, of M. Grappa and the valley of the Piave, and of Lake Garda, but they are elaborated with a technique of montage in which the given natural element is incorporated and modified by an imaginative, strongly stylized structure. At Maser, then, Veronese created an ample decorative landscape of joyous fantasy in a new dimension of the Humanist fable, in which vestiges of antiquity reemerge in nature, renewed by the presence of man.

In the adjoining rooms Veronese represented, in the *Mystical Marriage of St. Catherine*, the "worldly forces, transient and decaying, with which Time and Passion attack" and, in the Holy Family, "spiritual forces, secure and eternal, which triumph. . . ." In the Crociera the female musicians, illusionistically represented in niches, symbolize the harmony of creation. In the rooms overlooking the plain, the intensity of color reaches its climax in the ceiling frescoes, which praise the pleasures of man (Bacchus revealing the mysteries of wine; the allegory of Venus).

Veronese had collaborators at Maser, including his brother Benedetto, but it is hard to identify them individually, for they were faithful executors of what the master, at the height of his powers, drew out on the plaster. Sinopias have not been found at Maser, which means that the image, roughly set down in a sketch or drawing, was fixed in the immediacy of the colors on the fresh plaster with rapidity and an unerring sureness of vision.

Closely related to the frescoes of Maser are the organ shutters of the Church of S. Geminiano, Venice (1558–61; Modena, Gall. Estense), and the small altarpiece with the Baptism of Christ (Church of the SS. Redentore, for a chapel dedicated in 1561). The *Preaching of John the Baptist* (Rome, Gall. Borghese) can readily be placed in this phase of Veronese's activity. It is one of his most moving works of chromatic invention.

The *Martyrdom of SS. Primus and Felician* (Padua, Mus. Civ.), executed for the Abbey of Praglia, and perhaps the altarpiece with the Virgin and saints (Venice, Accademia), formerly in the sacristy of S. Zaccaria, date from 1562. On March 30 of the same year final payments were made for the three altarpieces executed for the Abbey of S. Benedetto Po, only two of which are extant, one showing the consecration of St. Nicholas as bishop of Myra (London, Nat. Gall.) and the other a Madonna with St. Antony Abbot and St. Paul the Hermit (New York, W. P. Chrysler, Jr., Coll.). In Veronese's sacred subjects he introduced majestic figures of saints, felt in all their dignity and splendor, but it is still a classical splendor, lacking the rhetorical display of the baroque.

On June 6, 1562, Veronese contracted with the Benedictine monks of the Abbey of S. Giorgio Maggiore in Venice for the *Marriage at Cana*, a canvas finished in September, 1563 (the receipt for the final payment is dated Oct. 6), which passed to the Louvre early in the 19th century. Veronese, who (according to A. M. Zanetti, 1771) introduced several contemporaries into the banquet scene, transformed the Biblical event into a sumptuously worldly occasion, staged with grandeur, multiplying the station points and opening out the space in various perspective planes; in fact, in increasing the grandeur of the scenic layout he endangered the organic structure. Compared to the banquet itself, the upper part beyond the railing appears freer, with moving figures that are silhouetted against the sky or stand out against the buildings, bathed in light.

Later than the Maser frescoes and prior to the allegories in the National Gallery in London are several mythological compositions, such as *Venus and Adonis* (PL. 344) and *Venus and Mercury before Jupiter* (Florence, Coll. Contini Bonacossi), that reecho the spirit of Titian's "poems." This is a genre particularly in harmony with Veronese's serene and joyous spirit, realized with a felicity of color in an increasingly rarefied luminous atmosphere.

Toward the middle of the 1560s Veronese developed a more lively taste, and his pictorial idiom achieved a new vigor that enabled him to realize even more adventurous compositions, almost as if Tintoretto's examples had taken hold of him. A more daring concentration of luministic and pictorial structural effects is seen in the ceilings painted for the Church of the Umiltà, Venice (now in the Cappella del Rosario in SS. Giovanni e Paolo), representing the Annunciation, the Adoration of the Shepherds (reduced to an oval), and the Assumption. It is probable that in this case, as in the *Marriage at Cana* now at the Louvre, Benedetto helped his brother. But the daring perspectives and the prebaroque quality of the architectural backgrounds can be credited only to the scenic fantasy of the master himself.

The Family of Darius before Alexander (ca. 1565; XII, PL. 83), a composition magnificently balanced in its scenographic structure and realized with a resplendent rhythm of chromatic areas, is related to the canvases of the main chapel of S. Sebastiano, unfortunately badly preserved, which can also be dated about 1565. In this painting an exquisitely ornamental fantasy enters the narrative with a solemn air, in that grand manner, that *grand goût*, which was to reach its climax in the baroque style. Somewhat later is *Christ and the Centurion* (Prado), similar in structure and equally intense in its psychological narrative key.

The two paintings executed for churches in Verona can be considered contemporaneous and can be related to Veronese's

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

stay in his native city on the occasion of his marriage to Elena Badile, daughter of the painter (Apr. 17, 1566). The Marogna altarpiece in the Church of S. Paolo is still in the original chapel of 1565, and *The Martyrdom of St. George* (PL. 350) is in S. Giorgio in Braida. The latter is astonishingly well preserved; its scenic layout, with its low station point, takes into consideration its position in the curved apse that focuses the attention as one enters the church. While the group on the ground, with the brigands around the Christian hero, is brought to the fore by an accentuated chromatic tension, the heavenly apparition, melting into the luminosity, moves off in such a way as to give the impression that the entire scene is about to whirl around backward. *The Martyrdom of St. Mennas* (X, PL. 493) closely follows the scenographic scheme of the *St. George. St. Barnabas Healing a Sick Man*, painted for the Church of S. Giorgio in Braida, Verona (Rouen, Mus. B. A.), shows the same agitated coloristic rhythm. According to V. Zanetti (1866), the *St. Jerome in the Wilderness*, now in S. Pietro Martire in Murano, was executed in 1566. The landscape here is interesting: a colder atmosphere, which anticipates the approaching dusk, characterizes the pink and blue of the sky. The same effects can be observed in the Baptism of Christ on the altar of the parish church of Latisana (Udine), dated June 11, 1567. Related to the Marogna altarpiece is the *Madonna with Saints* (Louvre), which possesses the intimate quality of an ex-voto. The *Portrait of a Lady* (Douai, Mus. Municipal) is not much later than the Donna Giustiniani at Maser, but the *Man in Black* (Florence, Pitti) and the portrait of Alessandro Contarini (or Daniele Barbaro; Dresden, Gemäldegal.) are to be placed in the second half of the 1560s.

The cycle of canvases executed toward 1572 for the Cuccina family, formerly the pride of the Este family in Modena, is now in the Gemäldegalerie of Dresden. This group of works constitutes a masterly example of composition through the juxtaposition of brilliant colors, rhythmically alternated through the expansion of the surface of the figures, contrasting the colder stretches of sky against which the silvery buildings stand out. In the *Cuccina Family Commended to the Virgin* (PL. 345) the figures are arranged according to the demands of the composition and according to dignity and age. In this case, too, Veronese's ability to make the human image live with uninhibited naturalness is still subordinate to an organic pictorial idiom almost polyphonic in its alternation of chromatic zones in light and in shade, enlivened by brilliant juxtapositions but bound together by reciprocal and intricate reflections. In the Cuccina canvases Veronese began an evident modification of his colors: the crude glitter of a mosaiclike luminosity was gradually replaced by tones in harmony with a crepuscular atmosphere. The background architecture takes on new importance and its Palladian whiteness is tinged with silver reflections. After 1570 there were frequent examples of night scenes in Veronese's work; but unlike Tintoretto, Veronese did not weaken the brilliance of his colors; rather, he exalted them in a still richer selection of subtle and vibrant tones with results that bring to mind Jacopo Bassano.

Toward 1570 Veronese had returned to the theme of the great feasts, executing one with Christ in the house of the Pharisee for the Convent of S. Sebastiano, now in the Brera, and another with the same subject for the Servite monastery, now in the Louvre. In both, the aid of his workshop is evident. He painted the *Feast of Gregory* in 1572 for the refectory of the Monte Berico cloister in Vicenza (unfortunately in poor condition) and the *Feast in the House of Levi* (PL. 348; VI, PL. 67), dated Apr. 20, 1573, for SS. Giovanni e Paolo, Venice (now in the Accademia), justly considered as the high points of his monumental composition. The splendid arcades that frame the banqueters in the latter canvas coordinate the unfolding of the pictorial events, characterized by a tonal tension that is both sustained and vibrant. Evidently the worldly sumptuousness of these feasts, or suppers, raised the suspicions of the religious authorities, particularly tense at this time because of the Lutheran heresy. Suspected of heresy for certain irreverences allegedly present in the *Feast in the House of Levi* (originally titled *Last Supper*), Veronese appeared before the tribunal of the Inquisition on July 28, 1573. The minutes of the interrogation, which took place before the Santo Uffizio, testify to his candid simplicity; he proclaimed himself obedient to the inner needs of creator and artist: "Io fazzo le pitture con quella considerazione che è conveniente, ch'el mio intelletto può capire. . . . Nui pittori si pigliamo licentia, che si pigliano i poeti e i matti. . . ." Ordered to modify various elements within three months, he evaded this sentence, which would have wounded his artistic conscience, by changing the title of the work.

Also from 1573 is the *Adoration of the Magi*, painted for the Church of S. Silvestro, Venice (London, Nat. Gall.); in this canvas the setting of the classical architectural elements, contrasting with the humble shed, balances the rhythm of the figures. The strong "afternoon" color of the London canvas contrasts with the nocturnal coloring of the *Adoration of the Magi* in the Church of Sta Corona, Vicenza (PL. 347). Thematically the two resemble each other, but in their pictorial interpretation they are quite different. In the Vicenza *Adoration*, datable to the end of the 1570s, the falling night gives the scene a more intimate emotive quality. The tones have the luminosity of precious stones, while the background scene of the procession of the Magi reveals a richness of impasto that anticipates the baroque. The Vicenza scene shows the loving care for background detail, no longer a matter of the simple decorative episodes of summary type so common around 1560, but of figural elements that play an important part in the organization of the scene, realized with minute but precious flicks of the brush.

Veronese arrived at this new style after having gone through an "apprenticeship" oriented toward the realization of small canvases. In the *Allegory of the Battle of Lepanto* (ca. 1571; Venice, Accademia) this new sensitivity was already taking shape. It characterizes works of small format but great breadth of conception, such as the *Resurrection of Christ* (Dresden, Gemäldegal.) and the *Calvary* (Louvre), in which Veronese translated a Tintoretto-like idea with "a breath of emotion almost always lost in the large scenographic apparatus of suppers or martyrdoms" (A. Venturi, 1928). Other such works are the *Mars and Venus* (Turin, Gall. Sabauda, Coll. Gualino) and the *Rape of Europa* (Milan, Coll. Rasini), in which the exquisitely subtle transparencies enlivened by a flicking brushstroke anticipate Watteau. A print by Marcantonio Raimondi was the chance inspiration for the extremely elegant *Vision of St. Helen* (London, Nat. Gall.), a marvelous example of contained and essential intensity.

As Veronese gained renown, the work of his studio increased. Although his brother Benedetto (1538–98) was his official helper (his sons Carlo and Gabriele were still very young), numerous other collaborators frequented his workshop, including his nephew Alvise dal Friso (Luigi Benfatto). The marks of preponderant collaboration are evident in the Madonna with donors (1573) executed for the Church of S. Pietro Martire, Murano (Mus. Vetrario), as well as in the *Martyrdom of St. Justina* (1575; X, PL. 507), in which Benedetto's collaboration has been verified. Another collaborative work is the *Marriage at Cana* (which documentary evidence dates 1579–80) painted for the Convent of S. Teonisto at Treviso (Rome, Palazzo di Montecitorio).

In these years Veronese seemed to develop a more sumptuous pictorial vein, expressed in refined color schemes whose imaginative tones bathe in myth the aspects of contingent reality. A significant work is the four allegories of love in the National Gallery, London, whose *sottinsù* perspectives generate formal rhythms that are among Veronese's most harmonious. From this period, the second half of the 1570s, is also the *Mystical Marriage of St. Catherine* (Venice, Accademia). The same richness of pictorial layout is encountered in the *Rape of Europa* (Venice, Palazzo Ducale), in which, however, the studio collaborated. Rich and exuberant as was Veronese's inspiration at this time, it was always governed by a restraint, by a sense of elevated harmony, by a control that was still of the Renaissance.

The ceilings of the Sala del Collegio of the Palazzo Ducale (1575–77) sing out with a renewed pictorial joyousness. A com-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

panion piece to them is the great wall canvas with Sebastiano Venier at the feet of the Virgin, undoubtedly executed with the help of Veronese's workshop. In the allegorical paintings on the ceiling (especially in *Dialectic*, PL. 350), which are attributed to the master himself (although in some the hand of Benedetto can be recognized), appear some of the purest structural simplifications, reverberating in sheer color against the blue of the sky.

The allegorical narratives painted between 1576 and 1584 for Rudolph II are on an equally high level. Various fragments of the composition with Mars and Venus, known from a copy, have been indicated by F. Zeri (1959) and G. Briganti (1960). The superb canvases with the *Choice of Hercules* (PL. 349) and *Wisdom and Strength*, probably from the story of Hercules (both, New York, Frick Coll.), were painted at this time. The *Mars and Venus* (perhaps mistitled) of the Metropolitan Museum, New York, as well as *Venus Disarming Cupid*, now in a private collection in Switzerland, correspond to the figural spirit of the mythological allegories, simultaneously erotic and moralizing, painted for the court of Prague. The touching *Venus and Adonis* (Prado) also belongs to this phase of Veronese's activity, which is marked by elegant and harmonious rhythms that recall Titianesque classicism. With these simplified compositions Veronese left behind him the moment of pleasing decorative works in which he had produced the *Mystical Marriage of St. Catherine* and the *Rape of Europa* at the Palazzo Ducale, Venice.

A still clearer example of the new orientation, based on a more profound knowledge of expressive colors, is the Crucifixion in S. Lazzaro dei Mendicanti, Venice, mentioned by F. Sansovino in 1581. A new vein of pathos that makes use of the melancholy tonalities of late afternoon gives color to a whole series of masterpieces. Large religious compositions executed for S. Niccolò dei Frari toward 1582 (*Temptation of Christ*, Brera; *St. Francis Receiving the Stigmata*, Venice, Accademia) and others of smaller size (*Hagar and Ishmael*, *Christ and the Samaritan Woman*, *Susanna*, all, Vienna, Kunsthist. Mus.) are related to one another in the coherent development of the landscape elements. An extreme elegance marks such paintings as the *Finding of Moses* in the Prado (PL. 349) and another of the same title in Dijon (Mus. B. A.), the *Sacrifice of Isaac* (Prado), the evocative *Christ in the Garden* (Brera), and the *Rape of Deianira* and *Venus and Adonis* (both, Vienna, Kunsthist. Mus.).

In isolated figures, such as the *Magdalen* (1583; Prado) and the *Lucretia* and the *Judith* (Vienna, Kunsthist. Mus.), the color harmony is intensified by luministic effects of a slightly tenuous subtlety. In the last years of his activity Veronese could still create noble works of religious art: the Virgin with St. Luke (after 1581; Venice, S. Luca), the Pietà with saints (before 1584; Venice, S. Giuliano), and the Pietà in Leningrad (Hermitage; also before 1584). In works destined for the provinces, such as the Assumption executed in 1586 for the Church of S. Antonio Abate, Pesaro (Dijon, Mus. B. A.), even though signed by Veronese, the assistance of his workshop (in this case, of his son Carlo) is preponderant. Perhaps the highest and most stringent example of this composition with forms held together by contrasts of light and shade in a luministically defined space is the *St. Pantaleon Healing a Sick Boy* (1587; PL. 350), to be considered the artist's last masterpiece. It should be remembered, however, that before 1585 Veronese had still been able to realize, with the aid of the studio, a work as solidly decorative as the ceiling (the Triumph of Venice) for the Sala del Maggior Consiglio of the Palazzo Ducale.

On Apr. 19, 1588, Veronese died "de punta e de febre" in his house on Salizzada S. Samuele, only eight days after having fallen ill at a religious ceremony in Treviso.

A painter of manneristic training such as Veronese could not but take advantage of all the possibilities offered by graphic means to put his compositions on paper according to the full rhythm of his imagination. Sources assure us that Veronese drew a great deal. An inventory of his family's possessions in 1682 lists 94 monochromes, 126 charcoal and black-chalk drawings, and 620 sketches, some in pen and some in chalk, as well as some motifs in monochrome.

Especially in the 17th century more finished drawings, similar to monochromes, done with brush on colored paper, were much in demand. C. Ridolfi (1648) lists some of this type in the possession of Cristoforo and Vincenzo Muselli in Verona. On the back of some were written phrases such as "I should like to reproduce this" or "If I had time I should like to paint this." The Tietzes (1944) wonder if these drawings did not constitute a collection of patterns or motifs for clients. Evidently Veronese's workshop, which after his death functioned under the name of *haeredes Pauli*, must have used these patterns. Certainly the sketches, drawn mostly in pen and sometimes tinted, are appreciated more nowadays. With a fluid, broken, and airy line Veronese feverishly sought not only to fix the framework of the figures according to a typical rhythm of movement but also to group them into a compositional structure and, through chiaroscuro, to determine the chromatic values that were later to be translated into sumptuous color on canvas. In these sheets the sudden swift mark, exquisitely mannerist, becomes obsessive at times in its search for poses and situations. Unquestionably these are Veronese's freest and most spontaneous graphic works. His work also includes formally completed drawings for isolated figures, mostly in charcoal. As the Tietzes observe, these various types of drawings pose diverse problems regarding their authenticity; the patterns and the finished figure drawings were the most copied by his school and by imitators.

In its formation Veronese's art drew a decisive facet of its character from mannerism, which Giulio Romano and Parmigianino had spread in northern Italy, and also felt the fascination for the Michelangelesque, which had been imported to the Veneto by Ponchino. Yet it is evident that his later work did not preserve that mannerist tension which characterizes the work of his contemporary Jacopo Tintoretto; rather, the emotive force of the colors redeemed the abstract and tormented composition common to the *maniera*. Veronese never repudiated his basic training but continued to use it insofar as form was concerned, that is, as a framework for his imaginative coloristic interpretation, eventually reaching the point where all formal elements were subordinated to his luminous, ever more temporalized tones. From his sunny "afternoon" coloring, as Baudelaire termed it, he passed to the more moving crepuscular and nocturnal tones that permitted a more decided definition of luminous space. Veronese's art may thus be considered the last great voice of the Italian Renaissance. After its initial period his expression is constantly classical in intonation (even though in later years more pathos entered into it), but his classicism is never a veiled academicism. It is rather a marvelous force capable of idealizing and transfiguring each element of expression in terms of an imaginative and serene harmony.

The greatest colorists of the European baroque turned to Veronese for inspiration, interpreting his message from a sensual and hedonistic point of view. In the 17th century Bellori (1672) spoke of figures by Rubens "executed with the intention of Paolo Veronese." Velázquez himself turned to the examples of the master when he wanted to tone down the Caravaggesque chiaroscuro so as to create his unmistakable atmospheric medium. Those currents of Italian 17th-century art which were not influenced by the Caravaggian reform paid full tribute to Veronese's art: from Scarsellino to the Carraccis (q.v.) and Francesco Maffei. It was not only Pietro da Cortona (q.v.), with his profoundly baroque decorativism, who was in debt to Paolo Veronese, but also Luca Giordano, who transformed the course of his painting, following Veronese's example.

The 18th century profited from the fanciful lightness of touch and from the skillful decorative schemes used by the master. Sebastiano Ricci, through his study of Veronese, was able to clarify his own painting, freeing it from the gloom of 17th-century chiaroscuro. Certain refined subtleties of Veronese's late period did not escape Watteau (q.v.), but it was Tiepolo (q.v.) who provided the most original and imaginative interpretation of Veronese's art, beginning with the prodigious early frescoes of the Palazzo Arcivescovile in Udine.

The romantics — notably Delacroix (q.v.) — and later modern artists, from Manet to Cézanne (qq.v.), studied Veronese's

CC-0. Agamnigam Digital Presevation Foundation Chandigarh

paintings with renewed awareness, discovering anew the internal laws that governed the lyrical world of the artist.

SOURCES. Anselmo Guisconi (Francesco Sansovino), Tutte le cose notabili e belle che sono in Venetia, Venice, 1556; Vasari; A. Palladio, Quattro libri dell'Architettura, Venice, 1570; F. Sansovino, Venezia città nobilissima et singolare, Venice, 1581; V. Borghini, Il Riposo, Florence, 1584; A. Valerini, Le bellezze di Verona, Verona, 1586; G. B. Armenini, De' veri precetti della pittura, Ravenna, 1587; G. P. Lomazzo, Idea del Tempio della pittura, Milan, 1590; C. Ridolfi, Le maraviglie dell'arte, Venice, 1648; F. Scannelli, Il Microcosmo della pittura, Cesena, 1657; M. Boschini, La carta del navegar pitoresco, Venice, 1660; M. Boschini, Le minere della pittura, Venice, 1664; G. P. Bellori, Le Vite de' pittori, scultori ed architetti moderni, Rome 1672; M. Boschini, Le ricche minere della Pittura veneziana, Venice, 1674; L. Scaramuccia, Le finezze de' pennelli italiani, Pavia, 1674; M. Boschini, I gioielli pittorici, virtuoso ornamento della città di Vicenza, Vicenza, 1676.

BIBLIOG. J. von Sandrart, Teutsche Academie der Edlen Bau-, Bild-, und Mahlerey-Künste, Nuremberg, 1675–79; B. Dal Pozzo, Le vite de' pittori veronesi, Verona, 1718; C. N. Cochin, Voyage d'Italie, Paris, 1756; A. M. Zanetti, Varie pitture a fresco de' principali maestri veneziani, Venice, 1760; F. Algarotti, Saggio sopra la pittura, Bologna, 1762; A. M. Zanetti, Della pittura veneziana e delle opere pubbliche dei veneziani maestri, Venice, 1771; L. Lanzi, Storia pittorica dell'Italia, Bassano, 1795; D. M. Federici, Memorie trevigiane delle opere del disegno, Venice, 1803; G. P. Zabeo, Elogio di Paolo Veronese, Venice, 1813; P. Biagi, Elogio di P. Caliari, Atti dell'Accademia di Belle Arti di Venezia, 1815; G. A. Moschini, Guida per la città di Venezia, 2 vols., Venice, 1815; E. Delacroix, Journal, Paris, 1822–63; E. Cicogna, Delle inscrizioni veneziane, Venice, 1824–53; F. Zanotto, Pinacoteca dell'I. R. Accademia di Belle Arti, Venice, 1830–32; L. Crico, Lettere sulle belle arti trevigiane, Treviso, 1833; J. Ruskin, Modern Painters, London, 1843–60; J. Ruskin, The Stones of Venice, London, 1851–53; F. Zanotto, Il Palazzo Ducale di Venezia, Venice, 1853–61; F. Waagen, Treasures of Art in Great Britain, 3 vols., London, 1854; J. Burckhardt, Der Cicerone, Basel, 1855; M. D'Azeglio, Armonia e colorazione di Paolo Veronese, Studi Storici, II, 1861, pp. 419–58; V. Zanetti, Guida di Murano..., Venice, 1866; C. Blanc, Histoire des peintres, École vénitienne, Paolo Veronese, Paris, 1868; A. Aleardi, Sullo ingegno di Paolo Caliari, Atti della R. Accademia di Belle Arti di Venezia, 1872; G. Scolari, Del celebre quadro di Paolo Caliari: La Famiglia di Dario, Verona, 1875; C. Blanc, Les fresques de Véronèse au Château de Masère près Trévise, GBA, XVII, 1878, pp. 385–400, XVIII, 1878, pp. 126–42; J. Lermolieff, Die Werke italienischer Meister in den Galerien von München, Dresden und Berlin, Leipzig, 1880; P. Caliari, Paolo Veronese, sua vita ed opere, Rome, 1888; C. Yriarte, Paul Véronèse, Paris, 1888; D. Zannandreis, Le vite dei pittori, scultori e architetti veronesi, Verona, 1891; B. Berenson, The Venetian Painters of the Renaissance, London, New York, 1894; F. H. Meissner, Paolo Veronese, Bielefeld, Leipzig, 1897; G. Biadego, Intorno a Paolo Veronese, Atti del R. Ist. Veneto di Scienze, Lettere e Arti, 7th ser., X, 1898–99, pp. 99–111; Venturi, IX, 4, pp. 745–953; P. Fry, Paolo Veronese, London, 1903; A. Bell, Paolo Veronese, London, 1905; B. Berenson, The North Italian Painters of the Renaissance, New York, London, 1907; D. von Hadeln, ThB, s.v.; D. von Hadeln, Beiträge zur Geschichte des Dogenpalastes, JhbPreussKSamml, XXXII, 1911, pp. 11–33; D. von Hadeln, Wann ist Paolo Veronese geboren?, Kunstchronik, N.S., 1911, pp. 257–60; D. von Hadeln, Pictures by Veronese from the Collection of Kaiser Rudolf the Second, Art in America, 1913, pp. 234–44; D. von Hadeln, Veronese und Zelotti, JhbPreussKSamml, XXXV, 1914, pp. 168–220, XXXVI, 1915, pp. 97–218; R. Bratti, La Cena di Paolo Veronese al Museo del Louvre, Nuovo Archivio Veneto, N.S., XVIII, 1910; D. von Hadeln, Die Vorgeschichte von Tintoretto, Paradies im Dogenpalast, JhbPreussKSamml, XL, 1919, pp. 119–25; E. Tea, Il cromatismo di Paolo Veronese, L'Arte, XXXII, 1920, pp. 59–75; E. Tea, Il ritratto di Pase Guarienti attribuito a Paolo Veronese, L'Arte, XXXII, 1920, pp. 195–99; T. Borenius, A Group of Drawings by Paolo Veronese, BM, XXXVIII, 1921, pp. 54–59; D. von Hadeln, Two Portraits by Paolo Veronese, BM, XLV, 1924, pp. 209–10; F. Ingersoll-Smouse, Quatre Véronèse en Angleterre, GBA, IX, 1924, pp. 96–100; D. von Hadeln, Drawings by Paolo Veronese, BM, XLII, 1925, pp. 298–304; A. M. Brizio, Note per una definizione critica dello stile di Paolo Veronese, L'Arte, XXIX, 1926, pp. 213–42; L. Coletti, Paesi di Paolo Veronese, Dedalo, VI, 1926–27, pp. 377–410; G. Fiocco, Paolo Veronese und Farinati, JhbKhSammlWien, N.S., I, 1926, pp. 123–36; D. von Hadeln, Some Portraits by Paolo Veronese, Art in America, XV, 1926–27, pp. 239–52; D. von Hadeln, Venetianische Zeichungen der Spätrenaissance, Berlin, 1926; F. Ingersoll-Smouse, Les Pietà du Véronèse, GBA, XIV, 1926, pp. 21–26; L. Coletti, La villa Giacomelli a Maser, L'Illustrazione della Marca Trevigiana e delle Dolomiti, July, 1927 (review by A. M. Brizio, L'Arte, XXX, 1927, pp. 282–83); F. Ingersoll-Smouse, L'œuvre peinte de Paul Véronèse en France, GBA, XVI, 1927, pp. 211–35; P. H. Osmond, Paolo Veronese, His Career and Work, London, 1927; A. Venturi, Studi dal vero, Milan, 1927, pp. 216–26; G. Fiocco, Paolo Veronese, Bologna, 1928; N. Gabrielli, Gli affreschi di Maser, L'Arte, XXXI, 1928, pp. 157–75; D. von Hadeln, Pictures Left by Paolo Veronese in His Studio, BM, LIII, 1928, pp. 3–4; G. Loukomski, Les fresques de Paolo Véronèse et de ses disciples, Paris, 1928; A. Venturi, Paolo Veronese, per il IV centenario della nascita, Milan, 1928; G. Fiocco, Ein Familienbild von Paolo Veronese, Pantheon, II, 1929, pp. 297–99; T. Borenius, Two Venetian Cinquecento Drawings, BM, LVI, 1930, pp. 104–07; G. Fiocco, New Portraits of Paolo Veronese, Pantheon, VI, 1930, pp. 545–47; D. C. Rich, An Unpublished Veronese in Chicago, Pantheon, VII, 1931, pp. 20–23; B. Berenson, Italian Pictures of the Renaissance, Oxford, 1932; L. Venturi, Contributi a Paolo Veronese, L'Arte, XXXVI, 1933, pp. 46–51; G. Fiocco, Paolo Veronese, Rome, 1934; G. Fogolari, Il processo dell'Inquisizione a Paolo Veronese, Ateneo Veneto, XVI, 1935; D. von Hadeln, Einige wenig bekannte Gemälde von Paolo Veronese, Pantheon, XIII, 1934, pp. 112–16; G. Fiocco, EI, XXVI, 1935, pp. 242–45; A. Morassi, Opere ignote o inedite di Paolo Veronese, BArte, XXIX, 1935, pp. 249–58; W. Arslan, Ancora di Paolo Veronese, B. della Soc. letteraria di Verona, Jan.–May, 1936; G. Delogu, Paolo Veronese, Bergamo, 1936; L. Foscari, Affreschi esterni a Venezia, Milan, 1936; A. Morassi, Di due opere del Veronese, BArte, XXXI, 1938, pp. 241–50; E. von der Bercken, Die Paolo Veronese-Ausstellung in Venedig, Pantheon, XXIV, 1939, pp. 247–59; C. Brandi, Visione di Paolo Veronese, Venice, 1939; A. M. Brizio, Rileggendo Vasari, Emporium, XVII, 1939, pp. 123–30; L. Coletti, Paolo a Maser, Emporium, XVII, 1939, pp. 131–38; G. Fiocco, Gloria di Paolo Veronese, Emporium, XVII, 1939, pp. 113–22; R. Gallo, Cinque quadri ignoti del Veronese alla Mostra di Venezia, Ateneo Veneto, 1939, pp. 199–204; R. Gallo, Per la datazione delle opere di Veronese, Emporium, XVII, 1939, pp. 145–52; G. Liberali, Per la rivendicazione di una grande tela a Paolo Veronese, Atti del R. Ist. Veneto di Scienze, Lettere e Arti, XCIX, 2, 1939–40, pp. 21–32; V. Moschini, Riflessi veronesiani, Emporium, XVII, 1939, pp. 139–44; R. Pallucchini, Mostra di Paolo Veronese (cat.), Venice, 1939; R. Pallucchini, Restauri veronesiani, Le Arti, II, 1939–40, pp. 26–31; M. Goering, Paolo Veronese und das Settecento, JhbPreussKSamml, LXI, 1940, pp. 100–24; T. Hetzer, Paolo Veronese, Römisches Jhb. f. Kg., 1940, pp. 3–58; E. Tietze-Conrat, Decorative Paintings of the Venetian Renaissance Reconstructed from Drawings, AQ, III, 1940, pp. 15 ff.; G. Trecca, Paolo Veronese a Verona, Verona, 1940; L. Coletti, Paolo Veronese e la pittura a Verona nel suo tempo, Pisa, 1941; E. Tea, Paolo Veronese, Milan, 1942; R. Pallucchini, Gli affreschi di Paolo Veronese a Maser, 3d ed., Bergamo, 1943; R. Pallucchini, La pittura veneziana del Cinquecento, 2 vols., Novara, 1944; H. Tietze and E. Tietze-Conrat, The Drawings of the Venetian Painters in the XVth and XVIth Centuries, New York, 1944, pp. 334 ff.; S. Harcourt-Smith, Paolo Veronese: The Family of Darius before Alexander, London, 1945; E. P. Richardson, Paolo Veronese's Mystic Marriage of S. Caterina, AQ, VIII, 1945, pp. 1–5; W. E. Suida, Paolo Veronese and His Circle: Some Unpublished Works, AQ, VIII, 1945, p. 175; R. Longhi, Viatico per cinque secoli di pittura veneziana, Florence, 1946; E. Tietze-Conrat, Not Paolo Veronese but Carletto Calieri, AB, XXVIII, 1946, pp. 53–54; E. Arslan, Nota su Veronese e Zelotti, Belle Arti, I, 1948, pp. 227–45; The "Resurrection" by Paul Veronese, BM, XCI, 1949, pp. 333–34; L. Venturi, Un'opera inedita di Paolo Veronese, Comm, I, 1950, pp. 39–40; G. Delogu, Veronese: La Cena in casa di Levi, Milan, 1951; R. Brenzoni, La prima opera di Paolo Veronese: la suocera di Pietro (Simeone) del 1546 e la sua singolare vicenda, Verona, 1953; R. Pallucchini, Veronese, 3d ed. Bergamo, 1953; E. Tietze-Conrat, Due componimenti morali di Paolo Veronese, Arte Veneta, VII, 1953, pp. 93–99; E. Tea, Paolo Veronese, Brescia, 1954; B. Degenhart, Eine Zeichnung des Paolo Veronese, MJnb, VI, 1955, pp. 207–12; G. Gamulin, Il polittico di Paolo Veronese a Verbosca, Arte Veneta, IX, 1955, pp. 86–94; G. Lorenzetti, Venezia e il suo estuario, 2d ed., Milan, 1956; M. A. Novelli, Un nuovo Paolo Veronese, Arte Veneta, X, 1956, p. 188; S. Sinding-Larsen, The Changes in the Iconography and Composition of Veronese's Allegory of the Battle of Lepanto in the Doge's Palace, Warburg, XIX, 1956, pp. 298–302; S. Béguin, "La fille de Jaïre" de Véronèse au Musée du Louvre, RArts, VII, 1957, pp. 165–69; B. Berenson, Italian Pictures of the Renaissance, Venetian School, 2 vols., London, 1957; P. Fehl, Questions of Identity in Veronese's "Christ and the Centurion," AB, XXXIX, 1957, pp. 301–02; G. Briganti, La Venere di Casa Colonna di Paolo Veronese, Arte Veneta, XII, 1958, pp. 91–96; R. Pallucchini, Scheda per un capolavoro inedito di Paolo Veronese, Paragone, IX, 101, 1958, pp. 64–68; A. Argelli, Per la storia di un quadro di Paolo Veronese, Arte Veneta, XIII–XIV, 1959–60, pp. 203–04; L. Crosato, Un nuovo putto della Soranza, Arte Veneta, XIII–XIV, 1959–60, p. 202; R. Pallucchini, Contributi alla pittura veneta del Cinquecento: Un inedito di Paolo Veronese, Arte Veneta, XIII–XIV, 1959–60, pp. 54–56; L. Vertova, Veronese, Milan, 1959; F. Zeri, Paolo Veronese: Una reliquia del Marte e Venere dipinto per Rodolfo II, Paragone, X, 117, 1959, pp. 43–46; G. Briganti, Un altro frammento del Marte e Venere di Paolo Veronese per Rodolfo II di Asburgo, Paragone, XI, 125, 1960, pp. 32–33; A. M. Brizio, La pittura di Paolo Veronese in rapporto con l'opera del Sanmicheli e del Palladio, B. del Centro Int. di Arch. A. Palladio, II, 1960, pp. 19–25; M. Levey, An Early Dated Veronese and Veronese's Early Work, BM, CII, 1960, pp. 107–11; A. Medea, Palladio, Veronese e Vittoria a Maser: Guida agli affreschi, Milan, 1960; R. Pallucchini, Palladio, Veronese e Vittoria a Maser: Gli affreschi di Paolo Veronese, Milan, 1960; E. Šafařík, Novy Veronesun obraz v národní Galerii (A New Picture by Veronese in the National Gallery), Vítvarné Uméný, 3, 1960, pp. 127–31; L. Vertova, Some Late Works by Veronese, BM, CII, 1960, pp. 68–69; P. Fehl, Veronese and the Inquisition; GBA, LVIII, 1961, pp. 325–54; N. Ivanoff, Il sacro e il profano negli affreschi di Maser, Ateneo Veneto, 1961, pp. 99–104; J. Schulz, Veronese's Ceiling at San Nicolò ai Frari, BM, CIII, 1961, pp. 241–45; W. Suida, Chiarimenti ed aggiunte all'opera di Paolo Veronese, Arte Veneta, XV, 1961, p. 99 f.; E. Arslan, Postilla ad un articolo su Giovanni Antonio Fasolo, Arte Lombarda, VII, 1st semester 1962, pp. 49–50; L. Crosato, Gli affreschi delle ville venete del Cinquecento, Treviso, 1962; S. M. Marconi, Gallerie dell'Accademia di Venezia, Opere d'arte del Secolo XVI, Rome, 1962; B. Suida-Manning, Titian, Veronese and Tintoretto in the Collection of W. P. Chrysler Jr., Arte Veneta, XVI, 1962, pp. 49–60; R. Pallucchini, Un capolavoro inedito di P. Veronese, Acropoli, 1962; J. Ziff, "Backgrounds, introduction of architecture and landscape": A lecture by J. M. W. Turner, Warburg, XXVI, 1963, pp. 138–39; F. Zava Boccazzi, Veronese, Milan, 1964; T. Pignatti, Le pitture di Paolo Veronese nella Chiesa di S. Sebastiano in Venezia, Milan, 1966; D. Rosand, Early Chiaroscuro Drawing by Paolo Veronese, BM, CVIII, 1966, pp. 421–22.

Rodolfo PALLUCCHINI

Illustrations: PLS. 341–350.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

VERROCCHIO, ANDREA DEL. Italian sculptor and painter (b. Florence, 1435; d. Venice, 1488). Data regarding the artist's birth and family can be obtained from documentation of statements to tax officials made first by his father and later by Verrocchio himself. In addition to a statement of economic hardship, another document of 1452 offers the important information that Verrocchio no longer exercised his craft as a goldsmith for lack of work.

Verrocchio's fame as a sculptor must have been fully established by 1466, because the Tribunale di Mercanzia had already commissioned him in 1463 to do the bronze group, the *Doubting of Thomas* (PL. 358), to be placed in the tabernacle executed by Donatello and Michelozzo on one of the façades of Orsanmichele, which had been surrendered by the Guelph party and from which Donatello's statue of St. Louis of Toulouse had been removed. In following years the artist's commissions increased rapidly. In 1468 Verrocchio received partial payment for a candelabrum (Amsterdam, Rijksmus.; see below) for the Sala dell'Udienza in the Palazzo Vecchio. At about the same time he probably executed the slab for the tomb of Cosimo de' Medici the Elder, who died in 1464 but was buried in S. Lorenzo in 1467. In 1472 he completed the tomb of Giovanni and Piero de' Medici in the Old Sacristy of S. Lorenzo, one of his most important works (PLS. 352, 353).

In 1476 Lorenzo and Giuliano de' Medici sold Verrocchio's bronze *David*, which is, therefore, of an earlier date, to the Signoria of Florence. His many commissions overlapped and were protracted and sometimes unfulfilled; thus it becomes difficult, if not impossible, to establish a valid chronology. The silver relief representing the Beheading of John the Baptist was commissioned for the altar of the Baptistery in 1477 and was completed in 1480. In 1477 Verrocchio's model was selected for the monument of Cardinal Niccolò Forteguerri in the Cathedral of Pistoia. In 1483 the sculptures of the Forteguerri monument were finished for the most part, but the monument was still incomplete at the time of Verrocchio's death; although work was resumed at various times, it was not until more than two centuries later that it was given a final but unsuccessful arrangement. The model of the *Doubting of Thomas* was placed in the Orsanmichele tabernacle in 1481; the completed work, in bronze, replaced it in 1483.

So extensive was Verrocchio's renown that the governing body of Venice sought him out to execute the equestrian monument to Colleoni that had been approved in 1479. The model of the horse was executed in Florence and was completed in 1481; it is not known, however, when Verrocchio settled in Venice. In his will, drawn up on June 25, 1488, he appointed Lorenzo di Credi as his executor, leaving him his Florence studio and the task of finishing the monument. The governing body of Venice did not respect his wishes, however, and preferred to entrust completion of the work to the goldsmith and sculptor Alessandro Leopardi. The statue was placed on its base in 1495 and unveiled in 1496.

It is clear from the information summarized that, in spite of the number of documented works, their chronology is uncertain because of the lapses of time, often quite long, between commission and delivery. The works followed one another in quick succession during the 1480s. Information on Verrocchio's youth is scant, and the tradition regarding his formation seems very uncertain.

Although the chronology of the body of his sculptures, taken as a whole, appears reliable, Verrocchio's activity as a painter was not only quite limited but also problematical. The only documented painting, the panel depicting the Madonna and Child with John the Baptist and S. Donato, in Pistoia Cathedral, was commissioned from Verrocchio on the basis of the will of Bishop Donato de' Medici, who died in 1474. It was uncompleted in 1485 and was mentioned by Vasari as being the work of Lorenzo di Credi, who is now generally acknowledged to have executed most of it.

Verrocchio's earliest extant work, the slab of the tomb of Cosimo the Elder, executed between 1464 and 1467, belongs to a relatively late period, considering the general precocity of Renaissance artists.

A highly significant sculptural work is the marble lavabo in the Old Sacristy of S. Lorenzo (PL. 351). The two harpies that decorate the basin, as Cruttwell (1904) points out, had a precedent in the tomb of Carlo Marsuppini in Sta Croce, and the ribbon motifs clearly recall Desiderio da Settignano. The hypothesis formulated by Thiis (1913) is therefore to be accepted as the most probable one, that is, that Verrocchio's artistic development took place subsequent to that of Desiderio, who was five years older. Middeldorf's theory (*Mitt. des Kunsthist. Inst. in Florenz*, V, 1939, pp. 209–10) that the angel on the right of the Madonna in the lunette of the Marsuppini tomb is the most direct antecedent of Verrocchio's angels, although it cannot be attributed to Verrocchio with certainty, seems to be well founded. Verrocchio later abandoned the chiseling technique characteristic of Desiderio in favor of modeling the stone almost as if it were chalk; this approach is described in the monograph by C. Kennedy and E. Wilder (1932). The originality of the forms, which are conceived architecturally, together with the polychrome effect establishes a stylistic link between the lavabo and the more famous tomb of Piero and Giovanni de' Medici, executed between 1469 and 1472 in the same sacristy (PLS. 352, 353). The bronze candelabrum identified by Valentiner (BM, LXII, 1933, pp. 328 ff.), dated 1468 (cf. *Bronzetti italiani del Rinascimento*, Florence, 1962, No. 10, cat.), is to be placed between these two works; records of various payments exist for the candelabrum, which is the first documented work of Verrocchio. Unlike the lavabo, the candelabrum is a thoughtful, stately work; however, some decorative elements, such as the bean-shaped motifs, are common to the two works. The terminal elements of the base of the candelabrum occur again in the tomb of Piero and Giovanni and are derived from the Marsuppini tomb, as is the motif of the triangular base on which the cup rests. These forms, of a cold, deliberate elegance, mark the transition from the style of the lavabo to that of the Medici tomb, which, even in its complexity, aims at a supreme formal objectivity that is enlivened by a fanciful impulse incomparable in its decorative taste.

This type of tomb had no imitations, just as it had no antecedents; it is unique in the absence of all religious symbols and human figural elements, except perhaps for the putti that decorate the vases in the arch relief. The sarcophagus is placed in the arched opening that gives onto an adjoining chapel. Thus the monument has identical façades. In the area between the sarcophagus and the intrados of the arch is a bronze grille in the form of interlaced ropes, a motif that had already been used by Michelozzo in the Church of S. Maria at Impruneta and by the pupils of Bernardo Rossellino in the tomb of Neri di Gino Capponi in Sto Spirito in Florence. Verrocchio developed and refined the motif, giving it preeminence in the space under the arch and using it to create an evocative effect. He carried the same interlace motif over onto the lid of the sarcophagus. The arch is faced with a marble relief of garlands that spring from two highly decorated vases at the base to meet at the central point, where a pyramid, emblem of Piero de' Medici, is fixed. The relief decoration consists of a luxuriant succession of leaf and ribbon motifs, repeated alternately. The general motif was inspired by Ghiberti's frieze (I, PL. 229) for Andrea da Pontedera's Baptistery door, which was of an earlier date and which contributed another important element to Verrocchio's artistic formation. The sarcophagus, like a huge jewel case, is decorated with polychrome marble, recalling the slab of Cosimo's tomb. It stands on a marble base that rests on the backs of four bronze tortoises, an unusual and bizarre motif that creates a zone of shadow at the lower part of the work. The polychrome effect created by the porphyry sarcophagus and the white marble on the lid is accentuated by the lively bronze decoration: lion's paws, oak-leaf clusters, ribbons, and a wreath. The composition is held together by the rope motif that is repeated on the lid. The sarcophagus is crowned by a bronze decoration consisting of a central element, in which the pyramid motif is repeated, with cornucopias on either side. The motifs of the lion's paws, oak-leaf clusters, and ribbons appeared earlier in the Marsuppini monument. But Desiderio's dry, almost purist decorative style was transformed by Verrocchio in his

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

work, assuming a classicizing fullness and a 16th-century abundance. This work represents the final development of that style which had appeared in the three preceding works — the slab for Cosimo's tomb, the lavabo, and the bronze candelabrum — with no trace of interruption and with a unity of inspiration that marks Verrocchio's artistic personality as highly original and the antithesis of Donatello's.

No sculpture by Verrocchio can be considered anterior to the *David* with the exception of the *Resurrection*, a relief in polychrome terra cotta (PL. 352) originally in the Medici villa in Careggi. The controversy regarding the date of the *Resurrection* is of considerable importance in reconstructing the development of Verrocchio's style. Its similarities to the artist's other works are so many and of such a nature that attribution to him has been universally accepted; doubt exists only in regard to the dating of the work. Gamba's first opinion (*L'Arte*, 1904, pp. 59–61) was that this was Verrocchio's first work, and he correctly traced its iconographic derivation from the *Resurrection* executed in 1443 by Luca della Robbia on the door of the New Sacristy of Florence Cathedral. In a subsequent article (BArte, Nov., 1931, pp. 193–98) he revised his opinion on the date, shifting it to later than 1478. Cruttwell (1904) dates the relief at about 1464, and Planiscig (1941) puts it near 1465. Those who see evidence of considerable collaboration with Leonardo da Vinci, such as Valentiner (1950), tend to date it in a later period. And, although they reject any direct collaboration with Leonardo, Dussler (ThB) dates it about 1475 and Pope-Hennessy (1958) toward the end of the 1470s.

In Verrocchio's *Resurrection* there is a greater breadth of expression and monumentality than in the crowded composition by Della Robbia; nonetheless, the style is harsher than in those works which are grouped with the *David* and which show the influence of Andrea del Castagno. The *Resurrection* is noteworthy for its richness of motifs, which combine archaic characteristics with others of the 16th century, not without a certain lack of balance that seems to confirm an early date. The two trees appear particularly archaic in style. Discussing the soldiers, Valentiner refers directly to specific drawings of Leonardo; their conception is, in fact, more monumental and lively than that of the trees. The Christ is similar to that of the *Baptism of Christ* (PL. 356), the date of which is still uncertain but is generally fixed at about 1470; however, the figure appears to be executed in a style that is more archaic than that of the figure in the *Doubting of Thomas*, the Forteguerri monument, and the terra cotta in Budapest (Mus. of Fine Arts), recently attributed to Verrocchio by Balogh (1962). Another confirmation of an early date can be had from a comparison with works dated with certainty, such as the silver relief, of the Beheading of the Baptist, and the terra-cotta angels (PL. 354) that were executed as models for the Forteguerri monument. Verrocchio's later style tended to become softer and more concerned with atmosphere, and it is difficult to concede a reversal of this tendency or the coexistence of two extremely different styles. The similarity to drawings by Leonardo, upheld by Valentiner, derives from repertories common to both their studios; the style is more in the manner of Pollaiuolo than Leonardo (A. Bertini, "L'Arte del Verrocchio," *L'Arte*, 1935, p. 441). The terra-cotta *Sleeping Youth* (Berlin, Mus. Dahlem), so similar to the figure of the soldier stretched out in the foreground of the *Resurrection* that it has been considered a preparatory study for that, has been attributed to Antonio Pollaiuolo by A. Venturi (*L'Arte*, 1926, pp. 179–81), who also attributed to Pollaiuolo the screaming figure on the left; this figure recurs in Verrocchio's repertory, and Valentiner has related it to a study by Leonardo for the *Battle of Anghiari*, but it must be remembered that Leonardo observed Pollaiuolo in addition to Desiderio and Verrocchio. The *Resurrection* from the Medici villa at Careggi is a work of Verrocchio's mature youth; in it he approached Pollaiuolo's sculptural style and at the same time generally maintained his own unmistakably personal style.

The bronze *David* (PL. 354) was executed in a style that is more complex and intellectually more refined than that of the *Resurrection*. Together with its original, delicately sculptured marble base, it reveals an exceptional elegance of presentation, thoughtful and intellectualistic in comparison with Donatello's *David* (XII, PL. 15), which is more imaginative and ingenious. The similarity of Verrocchio's style in the *David* to that of Pollaiuolo in the latter's painting of the same subject (Berlin, Mus. Dahlem) lies in a lively feeling of aristocratic arrogance, while in his ceaseless search for nuances of tone Verrocchio is related to Desiderio and is a forerunner of Leonardo but lacks his profundity. A date between 1470 and 1476 seems probable for this work.

The terra-cotta relief of the Madonna and Child from S. Maria Nuova (Florence, Mus. Naz.), although not documented, is indisputably attributed to Verrocchio and is considered typical of his technique. The scheme seems to have been derived from works by Filippo Lippi and Alesso Baldovinetti and was to be a model for others of Verrocchio's paintings. The marble relief of an identical subject at the same museum is correctly considered to be a work of his school.

The terra cotta of the Madonna and Child is closely linked stylistically to the bronze *Putto with a Fish* (PL. 355), executed for a fountain in the Medici villa of Careggi and later placed on the fountain designed by Vasari for the courtyard of Palazzo Vecchio in Florence. The influence of Desiderio is still clear in the putto's face, while the conception, enlivened by a hedonistic sense of form, develops in the 16th-century manner the effects of three-dimensionality and movement, aiming at capturing the leap of the fish in time and space. Another putto, in terra cotta (Washington, D.C., Nat. Gall.), has been attributed by Adolfo Venturi (1925) to Leonardo, but it is otherwise, with the single exception of Pope-Hennessy (1958), generally regarded as a work of Verrocchio (Busignani, 1966). It presents elements similar both to those in the relief representing the Madonna and Child and to those in the *Putto with a Fish*; the softer chiaroscuro and the attempt at a greater synthesis suffused with intimate tenderness seem to suggest a later date, and it has been supposed that the terra-cotta putto may be related to the putto, lost but recorded by Vasari, that struck the hours on the clock in the Mercato Nuovo.

The *Bust of a Lady* (PL. 357) is to be linked to the group of works subsequent to the *David*; it is not documented but is considered typical of Verrocchio's technique as a sculptor. It is, in fact, of exceptional delicacy, closely related to the busts by Desiderio but possessing greater breadth of form. Resemblances to Leonardo's so-called *Portrait of Ginevra Benci* (Washington, D.C., Nat. Gall.) are more iconographic than stylistic: there is hedonistic form in Verrocchio's work, profound psychological depth in Leonardo's, expressed with a new painterly sensitivity. The collaboration of Leonardo in the extremely beautiful hands of the marble bust has been maintained repeatedly, and it is true that in them the execution becomes more spiritual and sensitive, but the perfect unity of the conception seems to exclude this collaboration. Nonetheless, this seems to be the only example of Verrocchio's sculpture in which a supposition of Leonardo's collaboration is not unreasonable.

Among the terra-cotta busts, the only one generally considered original, though without certainty, is that of Giuliano de' Medici (Washington, D.C., Nat. Gall.), while that of Lorenzo (Washington, D.C., Nat. Gall., Kress Coll.) seems to be the work of a later artist.

In the *Beheading of the Baptist* (PL. 354), executed for the altar of the Baptistery between 1477 and 1480, the setting is conceived in perspective while the figures seem to be executed in the round, in antithesis to the Donatello relief. The two groups are balanced in an organic composition, with the executioner occupying the center; the result is an effect which is typical of later, 16th-century art and which clashes with the minutely executed and rather trite ornamental motifs. This contrast is even more disconcerting because the relief is inserted in a preexisting Gothic work. However, the artistic inspiration is varied and rich; one warrior seems to anticipate Colleoni's profile, while the design of the other's helmet recalls the controversial drawing of a warrior in profile (Br. Mus.) generally attributed to Leonardo. The type is repeated in Verrocchio's sculpture, as in the relief of Alexander the Great (Washington,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

D.C., Nat. Gall.), identified by Planiscig (1933) together with the Della Robbia copy (Berlin; Staat. Mus.) of a relief of Darius executed by Verrocchio as a companion piece to the first. The two reliefs are mentioned by Vasari as a gift from Lorenzo de' Medici to Matthias Corvinus.

The history of the monument of Cardinal Niccolò Forteguerri in Pistoia Cathedral is more complex; the exhaustive monograph by Kennedy and Wilder (1932) has demonstrated Verrocchio's major contribution in the 15th-century portions of the monument, to which additions were made in the 16th and 18th centuries. The head of Christ in the mandorla, surrounded by four angels according to a motif traditional in the 14th century but still widely used throughout the 15th century, although never completed, is worthy of consideration as an intermediate stage between the Christ of the *Resurrection* and that of the *Doubting of Thomas*. The quality of the work declines in the lower zones, although Verrocchio himself executed the fine head of the Faith figure and some parts of the figure of Hope; the figure of Charity in the center is a 16th-century work by Lorenzetto. The two terra-cotta angels in the Louvre are undoubtedly preparatory models for those of the monument, as is evident from the few variations of the finished marble angels. Only these models can give an idea of Verrocchio's over-all plan for the monument. In comparison, the small sketch of the tomb (Vict. and Alb.) appears weak and is probably a work of the studio: Berenson's attribution (1933) to Lorenzo di Credi lacks documentation, and the attribution by Wilder and Kennedy (1932) to Piero Pollaiuolo does not seem likely because of the similarities between the small model and Verrocchio's plan.

Of the other terra-cotta works, the statuette of St. Jerome (Vict. and Alb.), often disputed, is not among Verrocchio's most successful works in this medium, but its attribution to him is upheld by comparison of the figure of the saint with that of the soldier at the extreme right in the *Resurrection*.

Undocumented but universally accepted as Verrocchio's work is the *Entombment* (Berlin, Staat. Mus.; there is a copy in the predella of a Della Robbia altarpiece in the church of the Capuchin monastery in Camerino), which is one of his rarest and most important works because of its dramatic intensity. The drapery seems to imply as an antecedent that in the Forteguerri monument, but it has been simplified by a leaner, more summary style, without resorting to the archaic, to complement the pyramidal composition around the figure of Christ — a composition characteristic of the 16th century. It may be tentatively suggested that the *Entombment* belongs to the final development of Verrocchio's style in the Venetian period. Also of his mature phase are the three terra-cotta statues of the *Imago Pietatis* (Christ showing His wounds) — an attribution by Balogh (1962), who reconstructed the composition of the group: the statue of Christ in Budapest (Mus. of Fine Arts) and the two angels in Toledo, Ohio (Mus. of Art). This group, too, seems to be of a later date than the Forteguerri monument, but not so late as the *Entombment*.

Among the disputed works in marble, only the controversial relief representing the death of Francesca Pitti Tornabuoni (Florence, Mus. Naz.) is at least in part unquestionably the work of his hand. Although incomplete, the agitated scene of the lament is among the most original creations of Verrocchio and has some features in common with the Berlin *Entombment*. Francesca died in childbirth in 1477; the relief may have been executed several years later. H. Egger (*Francesca Tornabuoni und ihre Grabstätte in S. Maria sopra Minerva*, Vienna, 1934) has proved that it cannot have been, as Vasari writes, in the Church of S. Maria sopra Minerva, where Francesca's tomb had been executed by Mino da Fiesole. The other part of the relief, with the announcement of Francesca's death to her father, is a rendering by members of his school of a model by the master.

The bronze group of the *Doubting of Thomas* can be considered for its complexity and beauty the most representative work, before the Colleoni monument, of the period of the conclusion of Verrocchio's activity in Florence. In spite of the long lapse of time between commission and execution, its conception cannot have been prior to 1476–80, when documents indicate that payments to the artist became more frequent. This dating is supported not only by the stage of evolution of Verrocchio's style but also by evidence of the influence of Flemish art, particularly striking in the abundant drapery and derived from the Portinari Altarpiece of Hugo van der Goes (V, PL. 281; IX, PL. 10). The same taste for decoration appears in the leaf motifs and ornament on the tomb of Piero and Giovanni de' Medici. The broadly conceived effects of chiaroscuro give the head of Christ a phantomlike and solemn accent, while the head of Thomas is executed according to that ideal of delicate, regular beauty which appears in almost unvaried form in all Verrocchio's figures. The influence of Flemish art, observable also in the realistic attention to detail in the hands, is perfectly contained and synthesized by the style, which imposes a classical rigor on the overflowing fullness of the drapery, creating a most unusual effect. The composition has a precedent in the central group of the *Beheading of the Baptist*, but its salient characteristic is an exaltation of feeling that is resolved in lofty drama. In the *Doubting of Thomas* Verrocchio created a work which was unprecedented for monumental power of expression and which had no immediate repercussions, with the exception of some echoes in the painting of Filippino Lippi.

It is impossible to establish any date during the lengthy preparation of the Colleoni monument from the first mention of the model for the horse, executed in Florence and sent to Venice in 1481, until the death of Verrocchio, who left the work incomplete. Leopardi's contribution, in addition to the casting and execution of the base, was limited to the completion of the decorative details. While the inspiration of the Colleoni monument is the same as that of the *Doubting of Thomas*, there is a simplification of the decorative elements and a more summary execution, aimed at a more powerful and immediate synthesis. Verrocchio seems to have found a model for the face in Roman portraiture of the era of Constantine; this would account for the stiffness of certain of the features. The relation between the Colleoni monument and the "Gattamelata" of Donatello (IV, PL. 249) is analogous to that between the two Davids (see above), but the differences are more pronounced. The "Gattamelata" is resplendent with a glory that rises from the plane of human existence to the eternal, while the figure of Colleoni glows with the ephemeral force of life. Although the theme is the same as that contemporaneously treated by Leonardo in the unfinished Sforza monument, this coincidence does not lessen the radical difference between the two conceptions. Even if Verrocchio knew the studies for the mysterious background of Leonardo's *Adoration of the Magi* (IX, PL. 117), he did not share Leonardo's complex and profound stylistic endeavors, to which Pollaiuolo is much closer in his earlier design for the Sforza monument. The point of departure for Verrocchio's fantasy was the fresco of Niccolò da Tolentino (I, PL. 246) painted by Andrea del Castagno in S. Maria del Fiore about thirty years earlier. Verrocchio radically transformed this model, drawing inspiration for the face from late Roman sculpture, in a work that was to be more complex and lively than that realized by Donatello in the "Gattamelata," one that was sustained by an acute sense of drama, clear and concentrated.

Verrocchio's most famous painting is the *Baptism of Christ* (PL. 356) executed for the Convent of S. Salvi, attributed to him by Billi (1892), by the Anonimo Magliabechiano (1892), by Gelli (1896), and by Vasari (*Vite*), who also reports that Leonardo executed one of the angels, a fact already recorded by Albertini (1510). The state of the painting presents complex problems: it is unfinished, it was executed partly in oil and partly in tempera, and it was retouched in the 19th century. The most exhaustive discussion of this work is to be found in Passavant (1959). The compositional scheme is traditional, as in Baldovinetti's panel, the *Baptism of Christ* (Florence, Mus. di S. Marco), and in Pollaiuolo's representation of the Baptism in the silver reliquary from the Florence Baptistery (VI, PL. 265). The dominant group of Christ and the Baptist recalls the *Resurrection* from Careggi, both in the type of the Christ figure and in the folds of the drapery and harshness of form characteristic of Pollaiuolo. This harshness is attenuated in the painting by

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Leonardo's contributions in oil, not limited to the kneeling angel in the foreground but undoubtedly including at least the hazy landscape in the background and the pebbly shore in the foreground. Controversy surrounds the question of Leonardo's partial collaboration on the figure of Christ and on the landscape at the right, so different from the other and more in keeping with the tradition of Baldovinetti and Pollaiuolo. Except for some differences of opinion regarding the extent of Leonardo's collaboration, critics agreed, until Ragghianti's new thesis (1954), that this collaboration took place within the framework of Verrocchio's scheme, work on which was begun about 1470 but may well have been prolonged for several years as often happened in the master's workshop, and that it included the assistance of lesser helpers. According to Ragghianti, however, the principal group is the work of Botticelli. This theory is supported by a penetrating analysis that revealed the weaker marginal part of the work and recalled related Botticellian features that show the extent of the influence of Verrocchio in Botticelli's painting; however, these features are not such as to permit attribution of the *Baptism of Christ* to him. From this would follow the necessity, upheld by Ragghianti, of attributing to Botticelli the drawing of the head of an angel (Florence, Uffizi, Gab. dei Disegni e Stampe, No. 130E) because of its marked stylistic affinity with the frontal view of the angel's head in the *Baptism of Christ*. But this drawing, although attributed by Adolfo Venturi to Leonardo, is typical of Verrocchio, not only in respect to the other drawings that are correctly attributed to him but also in respect to his sculptures; its attribution to Botticelli would imply a lack of understanding of Verrocchio's artistic personality.

Among all Verrocchio's paintings, the only one really close in style to the *Baptism of Christ* is the *Madonna and Child* (PL. 360), which has a stronger sculptural sense and greater harshness of color. It seems to be more archaic in style than the *Baptism of Christ* and is prior to it, at least in the date of its completion, given the rigorously unitary character of the work. It has great similarities to Pollaiuolo's style, in the volume of the body and arms, in the timbres of the reds, in the landscape similar to that on the right-hand side of the *Baptism of Christ*. The complicated superposition of the veils of the Madonna, executed with a goldsmith's delicacy, anticipates the monumental treatment of the drapery in the sculptures of the artist's mature period, without dispelling the effect of synthesis. The Virgin's face is similar to that of the terra cotta in Florence but is superior in the strength of its expressive force.

This Madonna is Verrocchio's masterpiece in painting, and none of the other Madonnas attributed to him — the Madonna (No. 108) in the same museum; those of the Metropolitan Museum in New York, the Städelsches Kunstinstitut in Frankfurt, and the National Gallery in London — can compare with it. Currently there is a tendency to attribute the greater part of this series of Madonnas to Perugino (q.v.), in the period when he would have been in Verrocchio's studio. Whether or not one accepts these attributions, this tendency is indicative of the impossibility or at least the difficulty of firm attribution of the paintings to Verrocchio. With the exception of the Madonna at the National Gallery in London (which must be considered separately because it is more significant and complex), all these Madonnas repeat the scheme of the marble relief from Verrocchio's workshop (Florence, Mus. Naz.) more faithfully than the terra cotta in the same museum, unquestionably by his hand. In the Madonna in Frankfurt Umbrian characteristics are most evident, and the work is attributed by F. Zeri (BArte, XXXVIII, 1953, p. 136) to the Master of the Gardner Annunciation. In the painting at the Metropolitan Museum in New York the style characteristic of Verrocchio is strongly mixed with northern accents; the other Madonna in Berlin (No. 108) is the most faithful to the marble relief and is also the closest stylistically to Verrocchio, even though it lacks something of his usual vigor of form. It has been attributed to Perugino and compared with the *Madonna with Two Angels* (London, Nat. Gall.), which it resembles in the type of the Virgin's head, although it does not appear to be by the same hand.

The present tendency to attribute the London Madonna to Perugino (M. Davies, *Catalogue of the National Gallery, The Earlier Italian Schools*, 2d ed., London, 1961, suggests an attribution to Verrocchio) is not convincing because of the painting's pure Florentine character. Of the entire series, it is the highest in quality, the one that can best be attributed to the mature Verrocchio. It is the product of an evolutionary phase in the artist's development, in which he elaborated the forms of Leonardo and Lorenzo di Credi. In conflict with the attribution to Verrocchio are the refinement and the variety in the colors, which prevail over the sculptural force characteristic of the master and correspond to a style that is softer and gentler than that of the work unquestionably executed by him, in which there is present an ever-increasing dynamism. Although an attribution to the master's studio may be unsatisfactory for a painting with such salient characteristics, this is the only well-founded hypothesis. If anything, the old attribution to Ghirlandajo seems more plausible than the recent one to Perugino, as comparison with the former's early works, such as the fresco in the church at Brozzi, bears out. Moreover, insufficient importance has been given to the painting's stylistic link, remarked by Berenson (1961, I, p. 99), with the head of an angel in Berlin (Staat. Mus., No. 2790E r.) and to the even more marked stylistic connection with two drawings by Verrocchio, a Madonna with S. Giovannino and an angel and a small head of an angel (Uffizi, Gab. dei Disegni e Stampe, Nos. 445E, 212F), both hypothetically attributed by Berenson to Domenico Ghirlandajo. Another painting, *Tobias and the Angel* (London, Nat. Gall., No. 781), presents similar problems, and it has been repeatedly, but without consensus, attributed to Perugino. Passavant (1959) has attempted to prove that it is by Verrocchio himself, but the execution of the painting, notwithstanding the convulsive form, is not related to that of the master; this difference is even more evident than in the *Madonna and Two Angels*. M. Davies (op. cit.) indicates the painter of *Tobias and the Angel* as "a follower of Verrocchio," while Berenson (1961, p. 90) attributes the painting to Botticini working from a cartoon by Verrocchio.

The panel depicting the Madonna and Child with John the Baptist and S. Donato, in the Donato de' Medici Chapel in Pistoia Cathedral, is the only painting of Verrocchio's that is documented: by a letter written in 1485 by the guild of workers engaged on the building of Pistoia Cathedral to request the continuation of payments to Verrocchio and to state that the work would have been finished more than six years previously if the payments had been regular. In spite of this, Vasari (*Vite*) had already attributed the altarpiece to Lorenzo di Credi, and this position has been followed by most modern criticism, with noteworthy exceptions and limitations. The effect of the whole is indeed characteristic of the work of Lorenzo di Credi in the painterly application of the smooth, polished color; the regularity of the form, which tends to eliminate every contrast; the intense freshness of the tones, above all the greens, which create gay silvery accents; and the marked but superficial Leonardesque qualities, especially evident in the folds of the lower part of the Virgin's mantle. The figure of S. Donato has a plastic structure that distinguishes it from the other figures; but this seems to derive from a diversity in the model and is expressed within a unitary pictorial structure. Returning to a consideration of the general effect of the altarpiece in relation to the other paintings of Lorenzo di Credi, one can perhaps recognize a greater perfection of form in addition to a greater breadth of expression. Verrocchio assisted Credi not with a complete cartoon but with partial designs that served as models. This seems to be proved by a series of drawings by Verrocchio, first among them the folio containing two heads (Br. Mus., Malcolm 338, r. and v.) that are unquestionably drawings by Verrocchio; whether or not they are preparatory studies for the Virgin of the altarpiece in Pistoia Cathedral, they constitute its prototype. Despite the fact that the attribution to Verrocchio by various critics of the underlying sketch in silverpoint does not seem to be certain, the charcoal drawing for the figure of John the Baptist (Louvre) by Lorenzo di Credi is more closely linked to a Verrocchian model than the painting, which is nonetheless a faithful translation of that model. Finally,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in a drawing at the Uffizi (Gab. dei Disegni e Stampe, No. 212F, v.) Passavant (1959, p. 238) holds that he has identified a preparatory study by Verrocchio for the Infant Jesus in the altarpiece; although it seems that this drawing should be attributed to the author of the *Madonna and Two Angels* in London who executed the small head of an angel, already mentioned, on the recto of the drawing, it demonstrates the common repertory of the workshop. The altarpiece in Pistoia is a masterpiece produced by Lorenzo di Credi while he was in Verrocchio's workshop.

Among recent attributions, the *Crucifixion* in the Church of S. Maria e Angiolo at Argiano is noteworthy. Ragghianti's attribution of this work to a youthful Perugino (*L'Arte*, 1935, p. 182) has been confirmed by Zeri (BArte, XXXVIII, 1953, p. 135), who had discerned in the figure of Christ the possible collaboration of Verrocchio himself. Passavant, however, attempts to attribute the entire painting to Verrocchio. Actually, as Marangoni had seen (*L'Arte*, 1927, p. 256), the painter of the *Crucifixion* at Argiano was an eclectic who, in common with Verrocchio, possessed many of the characteristics of the styles of Andrea del Castagno and Pollaiuolo but had no real affinity to Verrocchio in either quality or style.

It is clear from a study of Verrocchio's paintings that he abandoned painting quite early in favor of sculpture, which was better suited to his artistic genius. He entrusted the execution of paintings to his pupils, assisting them by means of drawings. The only two paintings that are unquestionably his show his ties with Baldovinetti and, above all, Pollaiuolo; other elements in his works show echoes of Filippo Lippi, of whom Passavant supposes him to have been a pupil. The new sense of form that he created in his sculptures, however, had a decisive effect on the immediately subsequent development of Florentine painting.

SOURCES. P. Gauricus, De sculptura, Florence, 1504; F. Albertini, Memoriale di molte statue e pitture di Florentia, Florence, 1510; Vasari; G. Gaye, Carteggio inedito d'artisti dei secoli XIV, XV, XVI, Florence, 1839, I, pp. 367 ff.; G. Rucellai, Zibaldone, in G. Marcotti, Un mercante fiorentino e la sua famiglia, Florence, 1881; L. Landucci, Diario fiorentino (dal 1450 al 1516), ed. Del Badia, Florence, 1883; Il codice Magliabechiano, ed. C. Frey, Berlin, 1892; Libro di Antonio Billi, ed. C. Frey, Berlin, 1892; G. Santi, Cronaca rimata delle imprese del duca Federico d'Urbino, ed. H. Holtzinger, Stuttgart, 1893; C. Fabriczy, Andrea del Verrocchio al servizio dei Medici, Arch. stor. dell'arte, VIII, 1895, pp. 163–76; G. B. Gelli, Venti vite de artisti, ASI, XVII, 1896; U. Verino, De illustratione urbis Florentiae, ed. Brockhaus, in Festschrift zu Ehren des Kunsthist. Inst. in Florenz, Leipzig, 1897; A. Chiappelli and A. Chiti, Andrea del Verrocchio in Pistoia, B. stor. pistoiese, I, 1899; A. Chiappelli, Il Verrocchio e Lorenzo di Credi a Pistoia, BArte, ser. 2, V, 1925–26, pp. 49–68; R. Mather, Documents Mostly New Relating to Florentine Painters and Sculptors of the Fifteenth Century, AB, XXX, Mar. 1948, pp. 20–65; M. del Piazza and L. Guidorizzi, Gli artisti del Quattrocento nei catasti contemporanei, Comm., II, 1951, pp. 236–41; P. Murray, An Index of Attributions Made in Tuscan Sources before Vasari, Florence, 1959.

BIBLIOG. *General*: W. Bode, Denkmaler der Renaissance Skulptur Toscanas, Munich, 1892–1905; H. Mackowsky, Verrocchio, Bielefeld-Leipzig, 1901; M. Cruttwell, Verrocchio, London, 1904; M. Reymond, Verrocchio, Paris, 1906; L. Dussler, ThB, XXXIV; Venturi, VI, VII; Van Marle, XI; L. Planiscig, Andrea del Verrocchio, Vienna, 1941; J. Pope-Hennessy, Italian Renaissance Sculpture, London, 1958; G. Passavant, Andrea del Verrocchio als Maler, Düsseldorf, 1959; B. Berenson, Italian Pictures of the Renaissance, Florentine School, London, 1963; A. Busignani, Verrocchio, Florence, 1966. *Sculpture*: C. Kennedy and E. Wilder, The Unfinished Monument by Andrea del Verrocchio of the Cardinal Niccolo Forteguerri at Pistoia, Northampton, 1932 (reviews, U. Middeldorf, ZfKg, III, pp. 55 ff.; B. Degenhart, Pantheon, 1933, p. 253); L. Planiscig, Andrea del Verrocchio's Alexander Relief, JhbKhSammlWien, VII, 1933, pp. 89–96; W. Valentiner, On Leonardo's Relation to Verrocchio, Two Terracotta Reliefs by Leonardo, Studies of Italian Renaissance Sculpture, London, 1950; W. Valentiner, Rediscovered Works by Andrea del Verrocchio, Studies of Italian Renaissance Sculpture, London, 1950; B. Berenson, Disegni dei pittori Fiorentini, Milan, 1961; J. Balogh, Un capolavoro sconosciuto de Verrocchio, Acta Historiae Artium Academiae Scientiarum Hungaricae, VIII, 1962, pp. 55–98; Lenkey, An Unknown Leonardo Self-Portrait; Revision of the Authorship of the Alexander the Great Relief in the National Gallery of Art, Washington, D.C., Stanford, Calif., 1963; R. S. Stites, Leonardo scultore e il busto di Giuliano de' Medici del Verrocchio, CrArte, N.S., X, 1963, pp. 25–38, 59–60. *Painting*: J. Thiis, Leonardo da Vinci: The Florentine Years of Leonardo and Verrocchio, London, 1913; A. Venturi, Leonardiana, L'Arte, XXV, 1922, pp. 129–33, XXVII, 1924, pp. 49–57, XXVIII, 1925, pp. 137–52 (see A. Bertini, L'Arte del Verrocchio, L'Arte, 1935, p. 433); B. Degenhart, Di alcuni problemi di sviluppo della pittura nella bottega del Verrocchio, di Leonardo e Lorenzo di Credi, RArte, 1932, pp. 263–300, 403–44; B. Berenson, Verrocchio e Leonardo, Leonardo e Credi, BArte, ser. 3, V, VI, 1933, pp. 193–214, 241–64; C. L. Ragghianti, Inizio di Leonardo, CrArte, 1954, pp. 1–18, 102–18, 302–29; P. Sanpaolesi, Il "Battesimo di Cristo" del Verrocchio e Leonardo, Leonardo, saggi e ricerche, Rome, 1954, pp. 29–54.

Aldo BERTINI

Illustrations: PLS. 351–360.

VIETNAM. This name, brought into use at the beginning of the 19th century (from the Chinese Yüeh-nan), is applied to a territory that includes the basins of the Red River and of the Mekong together with the narrow coastal strip that joins them; that is to say, Tonkin, Annam, and Cochin China. This territory is at present divided into the Democratic People's Republic of Vietnam (Việt-nam Dan-chu Cong-hoa), which comprises Tonkin and northern Annam, and the Republic of Vietnam (Việt-nam Cong-hoa), which includes central and southern Annam and Cochin China. In this article, however, Vietnam has been considered in its geographic unity and divided into the three large areas in which its artistic civilization developed. The most important of these is the ancient kingdom of Champa, which stretched along the coast of southern Annam from the so-called "Annam portal" in the north to the boundary of modern Cochin China in the south (see CHAM, SCHOOL OF).

In the contemporary period, alongside persisting forms of traditional local culture, industrial and residential nuclei, airports, hospitals, and the like have developed in the principal centers according to the most modern standards of international architecture.

SUMMARY. Historical introduction (col. 766). Principal archaeological and artistic centers (col. 768): *Tonkin; Northern Annam; Southern Annam: a. Quang-nam group; b. Binh-dinh group; c. Nha-trang and Phan-rang group.*

HISTORICAL INTRODUCTION. The first kingdom constituted in what is now North Vietnam was the kingdom of Au-lac, founded in 258 B.C. by King An-du'o'ng, who established his capital at Loa-thanh ("the city of the shell"), now the village of Co-loa (Tonkin). After a short-lived existence this kingdom was replaced by the kingdom of Namviet, which was annexed to China in 111 B.C. by the Han dynasty and made into a district of Giao-chi.

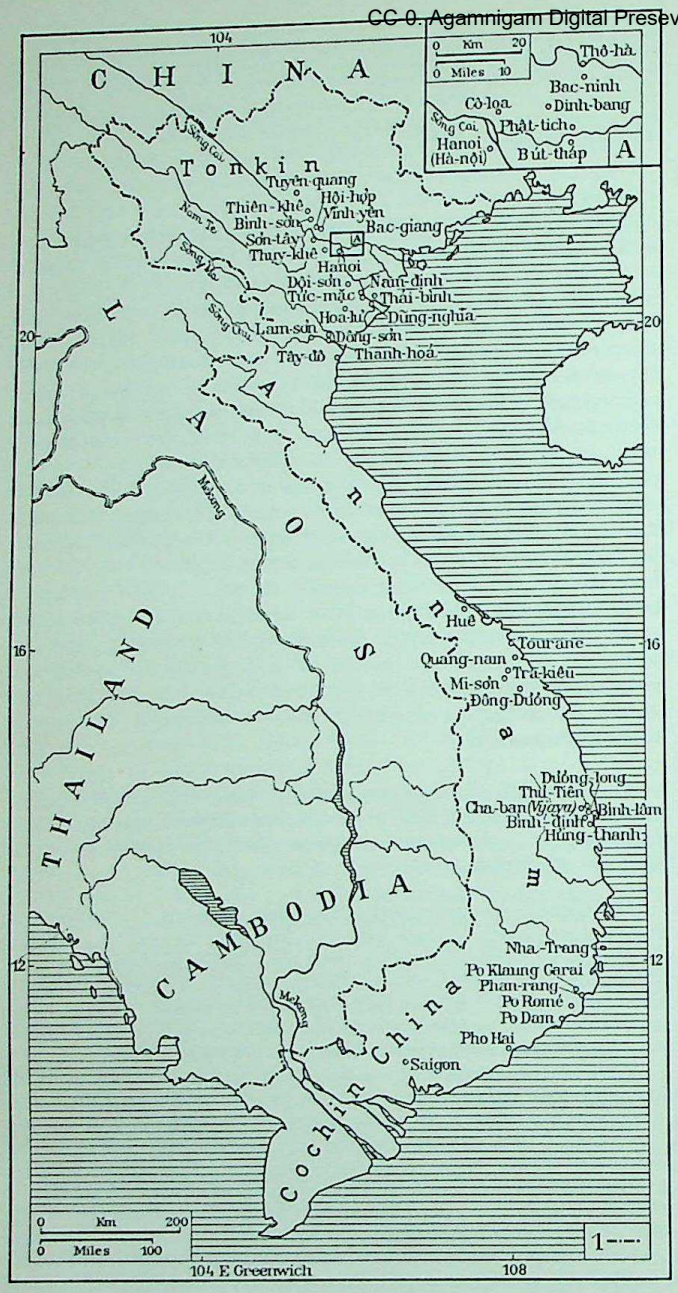
This period corresponds to the Bronze Age. It has been called the Đông-so'n culture after the site of this name in Thanh-hoa province where most of the objects connected with the culture were discovered. These objects indicate an "Indonesian" culture. The population, which was then proto-Vietnamese, lived under a feudal government and was ruled by totemistic beliefs (see TOTEMISM).

The Chinese rule that followed and persisted until the end of the 10th century left numerous archaeological remains, chiefly funerary, in Tonkin as well as in northern Annam. During this rule the successive Chinese governors established their capital in various places. First it was at Luy-lau (Bac-ninh), then at Long-bien, and in the 7th century it was transferred to Tu-thanh, which two centuries later was named Dai-la-thanh and which was apparently on the present site of Hanoi, where numerous remains have been discovered. Throughout this long period of Chinese rule, an intensive Sinological influence was exerted on the country through colonization.

Following revolts whose consequence was the defeat of the Chinese occupation forces, the country obtained its independence in 939 under the rule of Ngô-quyên, who again settled in Co-loa, the ancient capital of An-du'o'ng. After further disturbances that were rapidly quelled by Đinh Tiên-hoàng, who unified the kingdom under the name of Dai-co-viet, the capital was established at Hoa-lu, his native village. With the advent of the Lý dynasty in 1009 Hoa-lu was abandoned and the capital was shifted to Thang-long, now the city of Hanoi, which was apparently on the site of Dai-la, the old capital of the Chinese governors.

Although Buddhism (q.v.) seems to have penetrated into Tonkin toward the end of the 2d century, at the same time as Confucianism and Taoism (qq.v.), and although the Dhyāna sect was founded by Bodhidharma at the end of the 6th century, it was only in the reign and under the protection of Đinh Tiên-hoàng that Buddhism began to spread in Vietnam. But it was above all under the constant protection of the kings of the Lý dynasty that it became widespread, numerous Buddhist temples being built at this time throughout the whole realm. Although it still flourished in the reigns of the first kings of the succeeding Tran dynasty (1225–1413), who were fervent Buddhists, it began to change, first under the growing influence of

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Vietnam, principal centers of archaeological and artistic interest. *Key*: (1) Modern political boundaries.

Taoism and later because it was supplanted by the rising wave of Confucian culture. In 1400, as a result of a weakening of royal authority, a nobleman of the realm established himself as emperor under the name of Hô Quí-ly and transferred the capital to the city of Tay-do ("the capital of the west"), on the plains of Thanh-hoa (northern Annam). This seven-year interregnum led to a new Chinese invasion under the Ming dynasty in 1418, which provoked a nationalist upsurge under the leadership of Lê Lợ'i. After ten years of struggle the territory of Vietnam was liberated, and in 1428 Lê Lợ'i proclaimed himself emperor under the name of Lê Thái-tô and reestablished the capital, which he named Dong-kinh (the origin of the name Tonkin), at Hanoi, the kingdom itself being called Dai-viet. This newly founded Lê dynasty was destined to reign in Vietnam until 1789. A period of struggles against the neighboring states was followed by an era of peace and economic prosperity that favored the flowering of the arts, mainly during the reign of King Lê Thánh-tôn (1460–97). Confucianism, which had become the official doctrine, spread widely in the 15th and 16th centuries, to the detriment of Buddhism, which was the object of repressive measures that even prohibited the building of temples. However, at the beginning of the 17th century the decline of Confucianism, which had become a stultifying influence, favored a new upsurge of Buddhism, and the country was covered with numerous temples, founded as a result of the protection granted to Buddhism by the Trịnh lords in Tonkin and by the Nguyên lords in Annam.

In 1789 disturbances caused by the Tây-so'n, first against the Nguyên established at Hué since the 16th century and then against the Trinh established in Tonkin, brought about the collapse of the Lê dynasty (which had already been weakened by the internal struggles between the Trinh in the north and the Nguyên in the south) as well as the partial destruction of the temples erected in the preceding centuries. At this point Gia-long, a Nguyên prince, succeeded in establishing his authority with French support. He reunited the kingdom, which was called Vietnam until 1838 and subsequently Dai-nam, and transferred the seat of the capital to his native city, Hué, which remained the capital until recent years.

In this brief historical account no mention has been made of the numerous struggles between the Vietnamese and their southern neighbors, the Cham (see CHAM, SCHOOL OF). These struggles, which were already in progress during the Chinese occupation, were intensified in the 10th century; in 1471 they resulted in the capture of Vijaya, the Cham capital, and in 1663 in the annexation of the kingdom of Champa. The relations between Champa and Vietnam, which were not always bellicose, influenced the art of both countries, starting with the era of the Lý dynasty and even earlier.

The kingdom of Champa, whose inhabitants belonged linguistically to the Indonesian group, was formed in A.D. 192 in the vicinity of the Vietnamese city of Hué. During the period of its greatest territorial extension it stretched the length of the eastern coast of the Indo-Chinese peninsula from the mountain range of Hoanh-son (otherwise known as the Annam portal) in the north to the approaches of the Mekong delta in the south. The expanding Vietnamese gradually encroached upon it until it ceased to exist as an independent country, the remainder of its population being now grouped in the Vietnamese provinces of Nha-trang and Phan-rang.

The country was divided into a number of natural regions, each of which corresponded to a coastal plain. They were, from north to south, the region between Hoanh-son and the Col of Clouds, where there are few archaeological remains; Amaravati, corresponding to the Vietnamese province of Quang-nam; Vijaya, corresponding to Binh-dinh province; Kauthara, which corresponds to the province of Nha-trang; and Panduranga, which corresponds to that of Phan-rang. The archaeological remains of Champa, which are all in Vietnamese territory, are grouped in these four provinces, where the successive political centers of the kingdom were once located.

There is no indisputable evidence that Indian culture had already reached the country as early as the end of the 2d century of our era; it is only in the 4th century that the Sanskrit inscriptions of the Saivite king Bhadravarman provide certainty on this point. Up to the 8th century the center of the kingdom was located first north of the Col of Clouds, then south in what is now Quang-nam, where the remains of the holy city built around the 4th-century sanctuary of Bhadreśvara are still visible; these are the ruins of Mi-son, which lie in the center of an amphitheater of mountains. The capital was situated on the site of the present village of Tra-kieu, 7½ mi. southwest of Faifo.

In the middle of the 8th century the center of the kingdom was transferred southward to Panduranga (Phan-rang). In this region are located the 9th-century towers of Hoa-lai (III, PL. 192) and the sanctuary of Bhāgavatī at Po Nagar in the province of Nha-trang.

In 875 a new dynasty appeared in Quang-nam at Indrapura. The remains of the great Buddhist monastery at Dong-duong (III, PL. 192, FIG. 359) are located near the former site of this capital. The close of the 10th century marked the beginning of the conflicts with Dai-co-viet, which had been freed from Chinese domination; these ended in the dispossession of Champa and its disappearance. In A.D. 1000 the definitive setting up of the court in Vijaya (Binh-dinh), where it had already taken refuge once before, resulted in the construction of many monuments in that region. During the 12th century the occupation of the region by Cambodia at two different times explains the Khmer influence discernable in certain monuments (see CAMBODIA; KHMER ART). The only monuments after this period are of a late date; this is true of those in the region of Phan-rang in the south as well as of those in the interior.

PRINCIPAL ARCHAEOLOGICAL AND ARTISTIC CENTERS. The description of these centers is divided into the three main cultural areas of Tonkin, northern Annam, and southern Annam (the site of the former kingdom of Champa), beginning with the three ancient Vietnamese capitals, Hanoi, Co-loa, and Hoa-lu, and continuing with an alphabetical ordering of the sites within the three main areas.

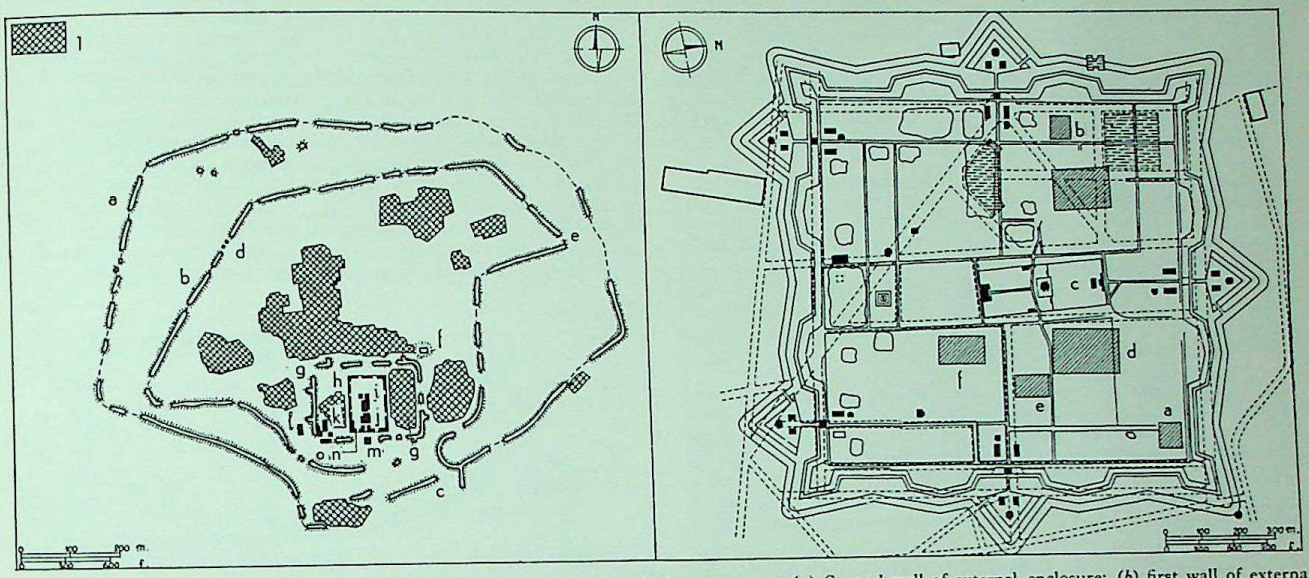
Tonkin. Hanoi. There is no certain proof that the earth banks to the west of the city represent the various citadels built by the Chinese governors from the time of the founding of Tu-thanh in 621

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

to the founding of Dai-la in 866–67 by Kao P'ien. The only surviving remains of these successive foundations, along with pottery of the T'ang and Sung periods, are the numerous terra-cotta fragments (some of them glazed) that decorated ancient buildings that have since disappeared. Equally fragmentary are the remains of Thang-long ("the soaring dragon"), the old capital built in 1009 by the Lý. Of the old royal palace of the Lê rulers, which was destroyed at the end of the 19th century, the magnificent triple stone stairway, built between 1428 and 1433, has survived. Lastly, the gateways of the old enclosure of the royal palace are all that remains of the citadel built in 1802 by Gia-long on plans inspired by Vauban-style citadels.

stood the royal palace. There are no remains of these buildings, their sites being now occupied by several temples that date from before the 17th century: a *đền* dedicated to King An-du'o'ng, which contains a colossal bronze statue of this king; a *đình* (a communal temple) also dedicated to An-du'o'ng, who was then considered a guardian spirit and was represented by his tablet; and a *chuà* (a Buddhist temple) and various pavilions.

Hoa-lu. Situated 53 mi. south of Hanoi, this town was the capital of the Đinh (968–80) and of the early Lê rulers (980–1009). The only remains dating from this period are some traces of ramparts of so-



Left: Co-loa, plan of citadel. *Key*: (1) Modern inhabited district. Principal monuments: (*a*) Second wall of external enclosure; (*b*) first wall of externa enclosure; (*c*) south gate; (*d*) west gate; (*e*) east gate; (*f*) small hill from which king attended military exercises; (*g*) enclosure of royal city; (*h*) supposed enclosure of royal palace; (*i*) Buddhist temple; (*j*) *đình*; (*k*) tomb of My-châu and *đền* dedicated to An-du'o'ng; (*l*) *vân-miêu*; (*m*) gate; (*n*) pool of Trông-thu'y. *Right*: Hanoi, plan of citadel (broken lines indicate modern streets). Principal monuments: (*a*) Prison; (*b*) Bô-chanh; (*c*) royal palace; (*d*) Tông-doc; (*e*) Dê-dôc; (*f*) Thuân-phu (*from Bezacier, 1955*).

Of the numerous religious buildings in Hanoi built since the Lý period, the following should be mentioned:

1. The Duyên-hu'u Buddhist temple, better known by the name of Chuà Một-cột ("the pagoda with a single pillar"), which Lý Thánh-tôn built in 1049 and which is probably preserved in its original state despite several restorations. It is in the form of a light, graceful pavilion built on top of a stone pillar placed in the middle of a tank, or artificial lake.

2. The *đền* (a Taoist temple) dedicated to Huyên-thiên Tran-vũ, the god of war and of the region of the north, whose colossal bronze statue is over 10 ft. high. This temple was built in 1010, reconstructed in 1768, and inaccurately restored in 1893.

3. The *đền* of Ngoc-so'n ("the jade island"), built on an island in the small lake in the center of Hanoi. The principal sanctuary, dedicated by scholars to Văn-xu'o'ng, the stellar genius of "the splendors of literature," is connected to the bank by a charming wooden bridge, formerly rainbow-arched, at the entrance to which stands the "column of the brush."

4. The *vân-miêu*, a temple of literature dedicated to the worship of Confucius and of his disciples, built in 1070 and afterward frequently restored. Its plan is in the shape of an immense parallelogram 1,150 ft. long and 246 ft. wide and includes five large courts. In the third of these there are 82 steles lined up on each side of a central tank, bearing examination dates (the earliest is 1484) and the names of the winners (in 1295) of the triennial competition for the degree of doctor of letters. The buildings reserved for worship are in the fourth court and contain tablets and ancient bronze ritual objects.

Co-loa. This site, 10 mi. north of Hanoi, has massive ramparts that Vietnamese tradition attributes to the time of the founding of the capital by King An-du'o'ng in 258 B.C. It appears more likely, however, that they date from the reoccupation of the site by King Ngô-quyên in 939. At that time the citadel consisted of three concentric enclosures, which are still visible, in the shape of a snail, whence its name, *loa*. The two outer precincts, which were in the form of an irregular oval, enclosed the "royal city," in the center of which

called "Chinese" bricks, a large type of brick that was little used after this period.

On the site of the buildings of the old royal palace two commemorative temples were built between 1607 and 1610, one of them dedicated to the Đinh dynasty and the other to that of the Lê. Nothing has survived of these old foundations except for the stone altar slabs adorned with bas-reliefs, some animal sculptures, and the beautiful lacquered panels of the portals of the temple dedicated to the Đinh, which depict landscapes and ritual objects.

In a picturesque spot on the summit of the Ma-yen-son, a rocky mountain near Hoa-lu, stands the royal tomb of Đinh Tiên-hoàng.

Binh-son. The stupa at Binh-son, 56 mi. northwest of Hanoi, is the only structure of its type still standing in Vietnam. Built in the period of the Lý dynasty (11th–12th cent.), it is a square tower about 50 ft. high, with sides 13 ft. long, comprising 11 stories embellished with terra-cotta bas-reliefs that are reminiscent of the motifs found in the art of Dai-la as well as of certain sculptures discovered at Phat-tich and Hoi-hop.

But-thap. The Ninh-phúc Buddhist temple (FIG. 785) at But-thap (Bac-ninh province), about 19 mi. east of Hanoi on the Canal of the Rapids, was built before the 14th century, but its present form is the result of restorations carried out in 1646–47. It consists of several buildings enclosed in a gallery 262 ft. long and 132 ft. wide; it is interesting for the bas-reliefs of the balustrade that surrounds the sanctuary and for those of the stupa of Chuyêt-công, the Chinese bonze who promoted the restoration of the temple. One of the halls in the temple contains a mobile octagonal stupa, which dates from the 14th century and comprises nine stories decorated with carved wooden panels depicting Buddhist scenes, including the Paradise of Amitābha.

Dinh-bang. Near this village, about 9 mi. north of Hanoi in Bac-ninh province, is the funerary temple of the Lý dynasty (FIG. 788), built in the 13th century under the Trân. In galleries on either side of the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

sanctuary sheltering the eight tablets of the dead kings are lined up, on one side, the eight beautiful royal palanquins embellished with red and gold lacquered carvings and, on the other, the rather mediocre representations of the kings' eight horses.

In the middle of the village of Dinh-bang rises the beautiful village *đình*, whose framework, dated 1736, is richly yet soberly decorated.

Doi-son. The Duyên-linh Buddhist temple is located at Doi-son, about 40 mi. south of Hanoi in Ha-nam province. In former times, on the top of a rounded hillock, there was a stupa of the same type as the stupa of Binh-son, whose sculptures were related to those discovered at Phat-tich and Dai-la. This stupa was erected in 1121 and destroyed during the Chinese occupation under the Ming dynasty between 1407 and 1428. The Lê replaced it with the present temple in the 15th century. The only remaining part of the original monument is the great stele dating from 1121; the decoration on its sides is related to the art of Dai-la, as are eight stone statues of Vajrapāṇi, which are of the same workmanship as some of the statues discovered in Phat-tich.

Dung-nghia. Site of the Thân-quang Buddhist temple, 6 mi. southeast of Nam-dinh. This temple, 526 ft. long by 378 ft. wide, is commonly called Chuà Keo and was built in the 13th century. It consists of a Buddhist temple (*chuà*) and a Taoist temple (*đền*). In front of these two temples is a porch, the doors of which are decorated with beautiful carvings in high relief. A fine three-storied belfry, whose architecture is reminiscent of the belfries of the Chinese Buddhist temples of the Sung period, completes the group, which is surrounded by three large sacred lakes.

Hoi-hop. Site of the Thânh-tiên Buddhist stupa, otherwise known as Chuà Cói, about 35 mi. northwest of Hanoi, in the province of Vinh-yen. This temple was built on the site of an old stupa erected about the 11th century, as is revealed by the terra-cotta sculptures discovered during excavations. The carved decorations on the framework of the sanctuary, although of uncertain date, are undoubtedly old; their richness, beauty, and variety make them extremely interesting.

Lim. At Lim, 12 mi. from Hanoi, is the tomb of Nguyên Diên, dating from 1769. It consists of a double enclosure in the center of which are massive stone altar slabs set behind carved figures. It is one of the best-preserved secular tombs in Vietnam.

Phat-tich. The Vạn-phúc Buddhist temple (FIG. 785) at Phat-tich, opposite But-thap on the Canal of the Rapids, was built in 1686, replacing the first two stupas built on the same site in 866 and 1057. Excavations have brought to light the foundations of the second stupa and many stone and terra-cotta sculptures, some of which show a clear Cham influence. The statue of Amitābha erected in the middle of the present sanctuary and a row of ten monolithic animals in front of it are relics of the 11th-century stupa. The 18 lohans (arhats) arranged in one of the halls are of excellent workmanship and are among the most beautiful lacquered clay sculptures of the late 17th century.

Thien-khe. The rock paintings at Thien-khe (province of Tuyen-quang), about 47 mi. in a straight line northwest of Hanoi, were discovered in 1942. These paintings, which are the only ones at present known in Vietnam, probably date from the 9th century. They represent the Buddha attended by bodhisattvas, as well as male and female donors dressed in costumes reminiscent of those of certain figures of Central Asia.

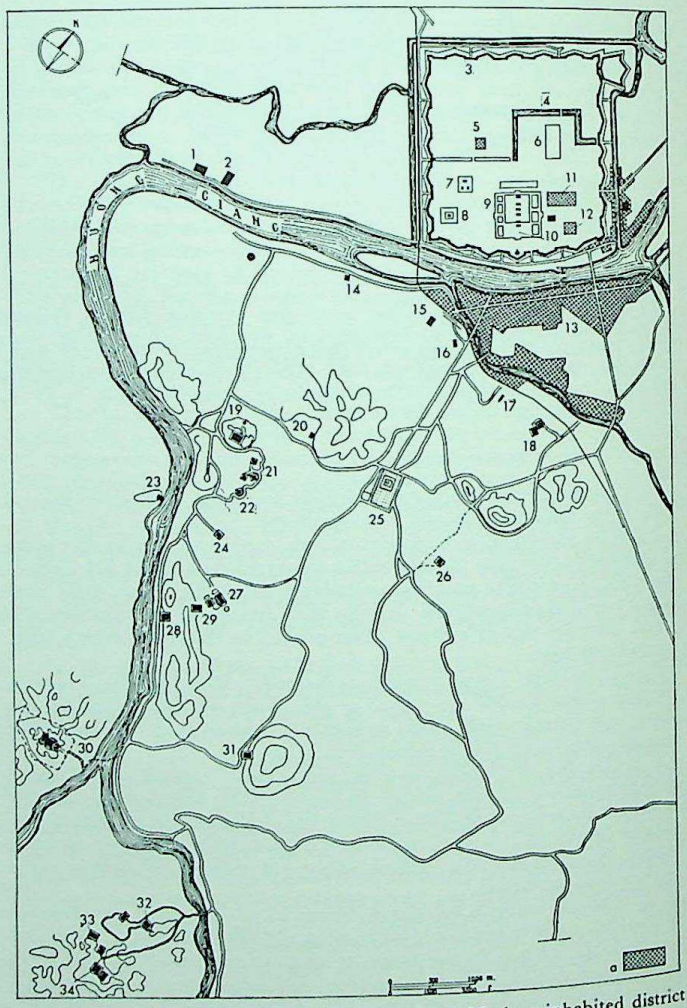
Tho-ha. This ancient potters' village situated on the northern bank of the Song Cau, in the province of Bac-giang, was founded in the 15th century. It has produced a specifically Vietnamese ceramic art, the ornamentation of which sometimes recalls the sculptural decoration of temple frameworks. The *đình* and the Buddhist sanctuary in Tho-ha also deserve mention.

Thuy-khe. Site about 22 mi. west of Hanoi in Son-tay province, where the Thiên-phúc Buddhist temple is located. This temple, constructed in 1132, is a huge building picturesquely set at the foot of limestone rocks. The only relic of the original building is the stone altar, whose sculptures, especially the Garuḍas at the corners, show a clear Cham influence.

Tuc-mac. The Phô-minh Buddhist temple at Tuc-mac, 2 mi. north of Nam-dinh, was dedicated to the emperor Trân Nhân-tôn; it was built in 1262 and restored in 1668 and 1916. Nothing is left of the original structure except for the large entrance doors, whose panels are adorned with beautiful bas-reliefs of dragons. A thirteen-storied stupa, built in 1310 and containing part of the emperor's ashes, was erected in front of the temple.

Northern Annam. Dong-son. At this village, 6 mi. northeast of Thanh-hoa, on the right bank of the Song Ma, excavations have been systematically conducted under the direction of the Ecole Française d'Extrême Orient since 1924. These excavations have revealed several brick tombs of the Han period, which covered an archaeological layer anterior to the Chinese domination. In this older stratum protohistoric tombs were discovered, which can be considered Indonesian and which contained a variety of funerary material consisting of bronze objects (including a drum), ceramics, and various other articles.

Hué. The historical origins of Hué are ancient and complex, going back to the Chinese occupation in the 3d century B.C. From the 3d century of our era to the beginning of the 15th century, the Cham and the Vietnamese fought for its possession, the latter occupying it definitively in the 15th century. The scattered traces of these different occupations are of no great interest. In 1558 Hué became the place of residence of the Nguyên, southern lords who had been appointed to govern the country in the name of the Lê sovereigns, but who later created an independent dominion of their own. However, it was only in 1802 that Gia-long, the conqueror of the Tây-so'n and the unifier of Vietnam after the fall of the Lê in 1789,



Hué, plan of city and its surroundings. *Key*: (*a*) Modern inhabited district and constructions. Principal monuments: (1) Temple of Confucius; (2) Thiên-mụ pagoda; (3) enclosure wall of city; (4) imperial canal; (5) Báo-đình; (6) royal gardens; (7) pagoda; (8) esplanade for sacrifices to guardian spirit of the earth; (9) enclosure of forbidden city; (10) imperial city; (11) ministries; (12) museum; (13) modern city on Huong-giang ("river of perfumes"); (14) esplanade for sacrifices to guardian spirits of the mountains; (15) Leih-dai pagoda; (16) Báo-quôc pagoda; (17) Cathedral of Phu-câm;(18) tomb of Duc-dú'c; (19) tomb of Tự'-dú'c; (20) Tù'-hiêu pagoda; (21) tomb of Đông-khánh; (22) tomb of mother of Khái-dình; (23) Hòng Chén pagoda; (24) tomb of wife of Minh-mạng; (25) Nam-giao; (26) tomb of Hiên-hoà; (27) tomb of Thiệu-trị;(28) tomb of father of Gia-long; (29) tomb of mother of Tự'-dú'c; (30) tomb of Minh-mạng; (31) tomb of Khái-dình; (32) tomb of father of Gia-long; (33) tomb of wife of Gia-long (34) tomb of Gia-long (*from L. Bezacier, 1955*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

established the capital of the kingdom at Hué, his choice being dictated by the site's geomantic virtues.

During the first period (16th–19th cent.) the southern lords, most of whom were fervent Buddhists, promoted the building of many Buddhist temples with the help of Chinese bonzes who had been driven from their country by the Manchurian conquest. The foundations of the following temples date from this period:

1. Thiên-mụ, the oldest monument in Hué, which was built in 1601, probably on the site of an ancient Cham monument, and was subsequently enlarged by various sovereigns. In 1844 Thiệu-trị erected in the first courtyard the Phu'ó'c-duyên tower, an octagonal structure 69 ft. high, divided into seven stories, each of which was dedicated to one of the seven buddhas of antiquity. The main temple, Đại-hù'ng, has a rich collection of statues and a large bronze tympanum dating from 1674.

2. Quaôc-ân, located at the foot of the King's Screen south of Hué, which was built by a Chinese bonze in 1684 and is the oldest temple after Thiên-mụ. It was destroyed during the rule of the Tây-so'n and was rebuilt about 1805 and 1837–43.

3. Báo-quôc, near Hué station, which was erected in 1710, deconsecrated by the Tây-so'n, and rebuilt by Gia-long in 1808. A beautiful panel dating from 1747 and some unusual carved openwork doors are relics of the old temple. Six beautiful bronze basins of the same period are preserved in the royal palace. They were cast between 1659 and 1684 and are fine specimens of Vietnamese metal casting.

The most important group of buildings of the second period, which began when Hué became the capital of Vietnam in 1802, is unquestionably the one enclosed by the three walls of the imperial city. Of these buildings the Thài-miêu, a temple of worship built in 1804 and dedicated to the southern lords, is the oldest, followed by the Thái-hòa (throne room) of 1805 and the two palaces of 1811, the Cân-chánh used for audiences and the Càn-thành built to serve as private apartments. Dating from 1821 is the Thê-miêu, a temple of worship dedicated to the Nguyên sovereigns, in front of which are lined up the nine dynastic urns that were cast in bronze by order of Minh-mạng in 1835–36.

South of Hué in charming sites along both banks of the Huong-giang ("the river of perfumes") the various royal tombs of the Nguyên are located; those of Gia-long (1820), Minh-mạng (1804), Thiêu-trị (1847), and Tự-dú'c (1883) are the most interesting both for the composition and for the perfect blending with the landscape.

Lam-son. The birthplace of Lê Thái-tô, 32 mi. west of Thanh-hoa. In the sacred wood behind the village the tombs of eight kings and two queens of the Lê dynasty are arranged around the tomb of Lê Thái-tô (FIG. 788), the founder of the dynasty, which is the most important and the best-preserved. Nothing is left of the buildings used for worship except the foundations and the strings of the staircases that led up to them; the statues of human figures and animals constituting the "Spirit Road" leading to the tomb have also survived. The lavishly decorated steles of the tombs are of great interest for the chronological data they supply.

Tay-do. This site, "the capital of the west," lies 28½ mi. northwest of Thanh-hoa and about 90 mi. south of Hanoi. The citadel of the Hô was erected here in 1397 by Hô Quí-ly in preparation for his seizure of the throne three years later. It is built on a square plan, with sides 1,642 ft. long; its ramparts, which consist of an imposing earth bank, are pierced by four monumental vaulted gateways built of enormous blocks of ashlar. The southern gateway is the only one with three openings. Although all the buildings of the original royal residence have disappeared, their site remains visible because the dikes of the rice fields were superimposed on the old foundations. The dragons that marked the entrance are all that remains of the old palace.

Southern Annam. The kingdom of Champa was located along the coast of southern Annam. The most important Cham monuments are to the south of the Col of Clouds, those to the north being in a poor state of preservation. The centers listed below are outstanding for their size or for their value as landmarks in the development of Cham art. They can be divided into the Quang-nam group, the Binh-dinh group, and the Nha-trang and Phan-rang group in the extreme south.

a. Quang-nam group. Bang-an. The tower of Bang-an, about 12 mi. south of Tourane, is remarkable for its octagonal plan and its superstructure in the form of a dome with eight segments. It was a Saivite sanctuary and probably dates from the 10th century.

Chieng-dang. The ruins of Chieng-dang, about 38 mi. from Tourane and just west of the Mandarin Road, consist of a group of three towers facing east along a north–south axis inside an enclosure. Their lateral façades are decorated with two-tiered blind doors. The central tower, which is by far the best-preserved, has retained two stories of its superstructure. This complex dates from the beginning of the 11th century.

Dong-duong. About 33 mi. south of Tourane, site of the ancient Buddhist monastery of Lakṣmīndra Lokeśvara (III, FIG. 359) erected at the end of the 9th century. This monastery occupies a precinct on an east–west axis, which is split into three connecting enclosures. To the east an imposing portico, with two pylons in front of it, leads to the eastern enclosure, which is decorated on the outside and lined on the inside with rows of stone posts along the northern and southern sides, both of which are pierced with doors. The great door guardians (*dvārapālas*) of the eastern entrance are represented standing on a *makara* (to the north) and a lion (to the south). Inside this enclosure rose a large hall consisting of a nave between two rows of eight pillars and two side aisles supported, on the outside, by two rows of smaller pillars. The roof, which no longer exists, must have been tiled. Between the two pillars erected at the western end, there is a platform supporting a pedestal decorated with Buddhist scenes. On this pedestal rested a statue of the Buddha seated European fashion, but only the feet are in place, the body having been moved to the central tower of the western enclosure. The northern and southern walls of the central enclosure, which is contiguous to the eastern and western enclosures, are no longer standing; only the rows of stone posts that ran along the inside remain. The entrance portico, whose two pylons rise in the westernmost part of the preceding enclosure, included two *dvārapālas*, the northern one on a bear and the southern one on a bull. In the middle of this enclosure there is a long hall that must have been covered with tiles; it has two-tiered doors at its east and west ends and is lit by narrow windows. Two-tiered blind doors adorn the northern and southern sides. The western enclosure, whose interior walls are decorated, can be reached only through the preceding enclosure by means of a portico that has three entrances to the east opening onto the court of the central enclosure; to the west, however, this portico has only one central entrance (flanked by two small temples) giving access to the courts of the western enclosure. In front of this portico there are two tall rounded pylons and two *dvārapālas* trampling human figures underfoot. The tower located in the eastern part of the enclosure is a large structure on a square plan, opening through four bays and built along the axis of the main tower, of which it is probably an annex. Of the superstructure only two stories are left, which reproduce the central structure on a smaller scale. The main tower, to the west of this tower, is a large building constructed on a double basement and surrounded by four smaller towers on the same terrace to the north, south, west, and southwest. To the east it has two flights of steps, and the other sides are decorated with blind doors. The stories of the superstructure are extremely dilapidated. Inside is the body of the statue of the Buddha placed on a pedestal decorated with Buddhist scenes. The western enclosure includes various other structures: seven small temples built against the wall; a tower with four bays to the northeast of the main tower; and two other subsidiary buildings in the northeast and southeast corners of the enclosure.

Khuong-mi. This site, which lies close to the Mandarin Road about 4 mi. south of Chien-dang, is by far the most important one in the Quang-nam group after Tra-kieu, Mi-son, and Dong-duong. Three towers dating from the end of the 9th or the beginning of the 10th century remain; they face east and decrease in size from south to north. In front of the richly decorated south tower there is a spacious vestibule with a three-tiered door opening to the east and a vaulted corridor giving access to the central chamber. The lateral façades are decorated with two-tiered blind doors, and the superstructure comprises three stories on the tower and two on the vestibule. The central tower is similar to the southern one, but its vestibule is less imposing. The northern tower, which is in a poor state of preservation, had no vestibule.

Mi-son. This site is located 15½ mi. from the Mandarin Road, in a natural amphitheater dominated by the peak of Rang Meo ("cat's tooth") and crossed by a stream, on the banks of which some seventy brick buildings were constructed by the sovereigns of Champa to commemorate various events. The oldest of those still standing is hardly earlier than the 9th century, but some of the sculptures probably date from the 8th century, notably a magnificent pedestal adorned with figures and decorative motifs inspired by the Indian tradition of the Gupta period. These monuments are divided into five groups, two on the left bank of the stream and three on the right; they are designated by their orientation, or more usually, by letters. This description is confined to the most important buildings, starting upstream and moving down. On the right bank the southwest group (Group A; III, FIG. 361) comprises — inside an enclosure running

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

west-northwest — two towers, the main one of which, A1, is apparently built on the site of the sanctuary of the Bhadreśvara lingam, which was originally erected at the end of the 4th century, then destroyed and rebuilt several times. The present tower, dating from the beginning of the 10th century, is the largest in Mi-son. It is open to the east and west; the extremely high inner chamber is built on a square plan; and in the center of it there is a large pedestal of a later date, bearing a statue of Lakṣmī. The northern and southern façades are decorated on the outside with blind doors similar to the façade projections of gabled buildings. The importance given to the pilasters is characteristic of Cham art. The superstructure is made up of four stories of decreasing size similar in composition to the main structure. The exterior decoration was carved in the brickwork and must undoubtedly once have been finished with a coating of stucco. This tower with the six small temples surrounding it (three to the north and three to the south) is built on a terrace whose substructure has moldings and applied ornamentation. North of Tower A1 and built right against it there is another, smaller tower (A10), which has only one entrance, on the western façade. This leads to a chamber built on a square plan, in the middle of which there is a two-storied pedestal supporting a large lingam. On the left bank of the stream is the southwest group (B, C, D), facing east; it dates for the most part from the beginning of the 10th century. To the east in front of groups B and C, which constitute one complex, is Court D, containing various buildings. The central monument of the southernmost group (B1), whose substructure is of stone and the superstructure of brick, is surrounded by various buildings; the ones at the southwest, southeast, and northeast corners are comparatively well preserved. The middle monument of the northern group (C1), which combines a sanctuary and vestibule, is accompanied by a row of four subsidiary towers to the north and a fifth one to the southeast. Court D contains two long halls in front and to the east of the two preceding groups; the southern one (D1) extends in the form of a nave, its outer walls adorned with pilasters between which figures standing in prayer are depicted in niches.

The northeast complex (E, F) on the right bank consists of two juxtaposed groups facing west, separated by a party wall. The center monument of the southern group (E1), which is the oldest (second half of the 8th cent.), is a square chamber planned to house the large decorated pedestal (now in the Tourane Mus.) that served as the support for a lingam. The outside decoration is very simple: there are no blind doors, pilasters being the only form of ornamentation. The missing superstructure probably had a tiled roof. North of this monument another temple (E4), with a vestibule to the west and blind doors on the other sides, has a superstructure consisting of stories of decreasing size that repeat the composition of the main structure. The central monument of the northern group (F1), which dates from the end of the 8th century, is built on a high basement. The rectangular inner hall, which is open to the west, contained a lingam. The exterior decoration of the lateral façades consists of a series of large frames flanked at either end by wide pilasters and separated from each other by a broad wall surface, from which projects a blind door.

Tra-kieu. Situated on the Song Baren, about 22 mi. south of Tourane (10 mi. west of the Mandarin Road), Tra-kieu was originally a Chinese colony that was later developed by the Cham kings. During the period when this city (which perhaps corresponds to Simhapura) served as their capital, it was surrounded by a brick wall pierced with loopholes. Excavations have disclosed a group of eight Brahman temples. The main one dates from the beginning of the 10th century and was a building of extraordinary size; all that remains is a huge terrace, the brick base of which is carved. It was decorated with sandstone bas-reliefs depicting dancers, trained lions, and remarkably realistic elephants.

b. Binh-dinh group. Binh-lâm. Situated about 3 mi. southeast of the Ivory Towers, Binh-lâm is a tower built on a square plan, occupying the northeast corner of the enclosure of a vast citadel. All that remains is the first part of the vestibule; the blind doors are richly decorated, and the three tiers of the roof are adorned with metopes and figures of animals. The structure dates from the 11th century.

Cha-ban. The citadel of Cha-ban (the old capital Vijaya), located about half a mile south of the Golden Tower, is a vast rectangular enclosure built of earth faced with laterite, measuring about 1,530 yd. on the north-south axis and about 1,200 yd. on the east-west axis. The 13th-century "Copper Tower" rises on a hillock in the middle of this quadrilateral. Its entrance and blind doors are in a poor state of preservation, but the two-storied roof with its corner crowns is comparatively well preserved. Along the axis of this tower about 330 yd. north of the enclosure, the remains of a large tower, now completely in ruins, form the rounded hillock of Thap-mam, which is about 30 ft. high and extends over a surface about 100 × 130 ft. Excavations carried out here in 1934 unearthed an impressive group of excellently preserved sculptures dating from the end of the 12th or the beginning of the 13th century.

The "Golden Tower." This lies 17 mi. north of the port of Qui-nhon, on a hill with two artificial tiers on its summit, and consists of a sanctuary dating from the 13th century whose entrance vestibule is completely ruined. It has three-tiered blind doors with three superimposed pediments. The two stories of the roof reproduce the scheme of the central structure.

Hu'ng-thanh. The two towers of Hu'ng-thanh, about 2 mi. west of Qui-nhon, date from the middle of the 12th century. The northern tower, which was originally the central tower of a group of three, is 75 ft. high. Its three blind doors have four tiers, each surmounted by an ogee arch. The upper story is in the form of a curvilinear pyramid. The southern tower, which is similar to the northern one except for its smaller dimensions, is covered by a pointed dome with four segments.

The "Ivory Towers" (Towers of Duong-long). About 5 mi. east of Cha-ban, on a slight rise backed by a low hill, are the remains of an important complex, other traces of which are still visible to the east. The three large towers, which open to the east and are built on one terrace, are all of the same type and style and date from the end of the 12th to the beginning of the 13th century. The central tower, which is more imposing than the others, includes an entrance vestibule, stone-faced blind doors, and a superstructure consisting of four square stories without corner crowns or projecting elements, surmounted by a circular story.

The "Silver Towers." The site of these towers, about 10 mi. from the port of Qui-nhon, is a hill whose summit has been given the form of a three-tiered truncated pyramid. The complex, dating from the first half of the 12th century, must have consisted originally of six or seven structures. At the foot of the hill can be seen the remains of a tower at the entrance of a roadway about 270 yd. long. This ended in a stairway that led to a second tower crossed by a passageway and covered by a roof with two diminishing tiers. A few yards farther on a terrace served as the support for a pillared hall, now completely destroyed. Beyond, a continuation of the stairway led to the upper terrace, which was occupied by the central tower. The entrance door of its vestibule has partly collapsed; the blind doors are three-tiered, and the roof consists of three diminishing stories. There is a structure with two chambers south of this tower that is covered by a vault terminated at either end by an outward-leaning pediment. On the southern side, level with the pillared hall, rises a tower with four pedimented doors.

Thu'-thiên. This tower is located opposite the Ivory Towers on the other side of the river, facing east. It is noteworthy for the slight projection of its entrance door and for the graceful silhouette of this door and of the blind doors. The structure dates from the 13th century.

c. Nha-trang and Phan-rang group. Hoa-lai. The towers of Hoa-lai, 8½ mi. from Phan-rang, on the highest point dominating the plain north of this city, are the oldest preserved examples of Cham architecture. They date from the first half of the 9th century and reveal the main characteristics of this architecture in the form of the arcature and the importance given to the pilasters. This site constituted an important complex, of which three towers of the same type remain. They all have projecting entrances, blind doors, roofs in diminishing tiers, and pilasters that widen out from the bottom toward the top. The central tower is the smallest and the most carefully built. The southern tower has remained in a state of incomplete construction, while the northern tower resembles the central one but is more roughly built.

Nha-trang. The Po Nagar at Nha-trang, situated at the top of a rounded granite hillock on the left bank of the Song Cai, originally consisted of seven or eight buildings, four of which are still standing (III, FIG. 362). At the foot and to the east of the hillock is an entrance tower; a third of the way up there is a large hall with a double row of octagonal pillars that is joined to the esplanade of the summit by a stairway. On the eastern edge of the esplanade there are three towers: the main tower on the north side (VII, FIG. 924), which is 75 ft. high, comprises one story built on a square plan and covered by a pyramidal roof formed by three diminishing stories. The elaborate eastern entrance is surmounted by a roof that repeats, on a small scale, the roof of the main tower; the other sides are decorated with

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

extremely prominent blind doors. In the center of the high inner chamber is a pedestal that supports a black stone statue of a seated ten-armed Bhāgavatī leaning against a richly decorated backrest. The southern tower is built on the foundations of an earlier sanctuary. The external decoration is simple, the blind doors are two-tiered, and the roof has two gables in the form of a pointed segmental arch. Behind, the richly decorated northwest tower is covered with a roof with two slopes and two gables, set at right angles to the general direction of the building. On the esplanade, in addition to these three 11th-century temples, there are some ruined structures to the southwest and west and a miniature temple to the southeast.

Pho Hai. An 8th-century Saivite temple, built on a hill about 160 ft. high dominating the city of Phan-thiet to the north. It comprises three brick sanctuaries opening toward the east and overlooking the sea. The main tower is built on a rectangular esplanade. It opens to the east by a door whose structure is reproduced by the blind doors of the other sides. The three diminishing tiers of the superstructure reproduce those of the central structure; the inner chamber contains a square vessel that serves as the support for a lingam. To the northeast, on the same terrace, an annex building, which is now in a poor state of preservation, adjoined this tower. At the foot of the terrace and to the north of it is another tower that is a reduced version of the main tower.

Po Dam. Lying approximately 12 mi. south of Po Romé, Po Dam is built on the first tier of a hill. The complex dates from the second half of the 9th century and consists of two groups of three extremely dilapidated towers that are believed to be princes' tombs. Of the three towers of the southern group, which are small and simple and without blind doors, two open to the south and the other, lying behind, to the east. The northern group comprises a main tower similar to the towers of Hoa-lai but smaller and two simple square structures set somewhat farther back. The principal tower has a projecting entrance on the south side, while its other sides are decorated with blind doors; its superstructure has collapsed.

Po Klaung Garai. About 4 mi. northwest of Phan-rang, on a hill about 330 ft. high, there is a group of four 14th-century structures, two of which are in ruins (III, FIG. 362). In front and to the east of the principal tower, which is built on a square plan, there is a rectangular hall that is in turn preceded by a tower reproducing the principal tower on a small scale. The hall is flanked on the south side by an oblong structure simulating two stories and containing two halls. The excellently preserved main tower has prominent blind doors and an imposing vestibule that is in itself a small gabled building decorated with a pediment depicting Śiva dancing. Its roof consists of three diminishing tiers with corner crowns, in the shape of a curvilinear pyramid. This tower, which has little external decoration, contains a square chamber in which there is a lingam.

Po Romé. This monument, which is situated on a small hill about 9 mi. southwest of Phan-rang, is considered to be the sepulchral temple of King Po Romé (1627–51). The structure, which is well preserved but rudimentary, recalls in simpler form the architecture of Po Klaung Garai. The inner chamber contains two statues of queens and a bas-relief depicting a king represented in the guise of Śiva. South of this sanctuary there is a brick tower whose interior is adorned with paintings.

BIBLIOG. *General*: H. Cordier, Bibliotheca Indosinica. Dictionnaire bibliographique des ouvrages relatifs à la péninsule indochinoise, III–IV: Indochine française, Paris, 1914. *Tonkin*: Lê Thanh-khoi, Le Viet-nam: Histoire et civilisation, Paris, 1955; L. Bezacier, L'art vietnamien, Paris, 1955. *Southern Annam*: H. Parmentier, Inventaire descriptif des monuments chams de l'Annam, 2 vols., Paris, 1909; G. Maspero, Le Royaume de Champa, Paris, Brussels, 1928; J. Boisselier, La statuaire du Champa, Paris, 1963; G. Coedès, Les états hindouisés d'Indochine et d'Indonésie, Paris, 1964 (2d ed.).

LOUIS BEZACIER

Illustrations: 3 figs. in text.

VIETNAMESE ART. Within the sphere of Indo-Chinese artistic production (see BURMESE ART; CHAM, SCHOOL OF; KHMER ART; LAOTIAN ART; SIAMESE ART), on which Indian and Chinese art exerted an influence, Vietnamese art is distinguished by the complete predominance of Chinese elements (see CHINESE ART). These, however, were interpreted in accordance with the local decorative sensitivity and reflect an attempt to integrate the architecture with the local landscape. In the field of the so-called "minor arts" only bronzes and pottery have withstood the climate of these regions; the bronzes follow an ancient tradition, while the pottery is stylistically and technically of Chinese inspiration, although esthetically inferior. Few traces remain of the wood architecture of the more ancient periods, whereas the stone and brick architecture is better preserved; it is the latter that is chiefly discussed in the present article.

SUMMARY. Cultural periods (col. 778): *The Bronze Age; Chinese domination; Art of Dai-la; Art of the Trân period; Art of the Lê period; Art of the Nguyên period.* Architecture (col. 786): *General characteristics; Religious architecture; Funerary architecture; Civil architecture; Military architecture.*

CULTURAL PERIODS. The art of Vietnam can be divided into three broad chronological periods. The first, belonging to the Bronze Age and known as the Đông-so'n period, extends from the 4th century B.C. to the 1st century of our era. It was followed by a long period which corresponds to the Chinese occupation — from the 1st to the 10th century of our era — and which is characterized by a large number of Chinese tombs that have yielded abundant funerary material. Finally, the third and last period began toward the 9th century of our era and continued into modern times. The art of this period, at first Sino-Vietnamese in character, slowly broke away from the Chinese influence and acquired its true Vietnamese character toward the 13th century.

The Bronze Age. The earliest examples of Vietnamese art were revealed by the discoveries made south of the Tonkin delta in the province of Thanh-hoa (Annam), mainly at the village of Dong-son. The many objects discovered at this site came for the most part from tombs. In addition to the bronze objects, which were the most numerous and most interesting, there were pottery wares and many fragments of vases, both decorated with lozenge and meander motifs; there were also terra-cotta beads, earrings made of jade and other materials, and tools made of finely polished schist. Among the bronze objects were weapons of all kinds: lance heads, swords, daggers, axes of various shapes, and armor plates, with which some plowshares and vases were grouped. Although some of these objects were of Chinese origin — for example, a fine two-edged sword, a mirror, and some vases — most of them give evidence of native workmanship. Among the latter, special mention should be made of the pediform axes, whose faces are decorated with birdlike figures, as well as the dagger hilts in the shape of figures. The most interesting objects discovered at Dong-son were a few bronze drums, some of them of small size (PL. 361). These instruments, of which the Musée d'Histoire du Viet Nam in Hanoi has a fine collection from various regions of Indochina, have been known for many years and were inventoried at the beginning of the 20th century by F. Heger, who, in his basic work (1902), classified them into four types (a classification that is still valid). Of these only Type I belongs to the Đông-so'n period, the three other types being of much later date; in fact, the last, Type IV, was still being produced during the last century from Burma to northern Laos and is still used in certain festivals and ceremonies of western Tonkin, especially among the Muong, who are closely related to the Vietnamese.

Although they have been the subject of much discussion, the complex problems raised by these musical instruments of varying sizes and decoration have not yet been satisfactorily solved. For example, the question of their chronology, although it can be limited to about the 4th–3d century B.C. for the oldest examples, still presents some uncertain points. Their origin is even less certain, and scholars have still not identified the center or centers of diffusion, the area of distribution being extremely broad, since it extends from Mongolia to the Malay Archipelago and from Burma to Tonkin. The designs represented on the upper surface and on the sides of these instruments are extremely interesting for the study of the fauna and especially for the study of the people who used the instruments, a race of warriors whose civilization is comparable

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

to that of certain islands of the Malay Archipelago and who at that time probably inhabited a geographic area extending over a large part of southeast Asia. Around a central star inscribed within concentric circles are represented rows of birds (pelicans, storks), various animals (especially species of deer), and rows of bird-men similar to those depicted on the pediform axes, some of them dancing and others playing various instruments. There are also scenes incised on the drums (VIII, FIG. 46). These are representations of different types of boats and canoes, with sitting or standing oarsmen also disguised in birds' plumage. Some are armed with crossbows, axes, or lances; others are playing mouth organs, drums, or castanets. Lastly, certain types of houses on piles appear in the ornamentation. On the roof ridges of these dwellings birds (peacocks or roosters) are perched; birds' heads decorate the ends of the roofs, whose sloping edges, which almost touch the ground, are formed by the curved outline of the birds' wings. Inside these dwellings people can be seen in various crouching or recumbent postures.

These representations of domestic or religious life, animated by the presence of human beings and animals, are combined with saw-tooth and comblike patterns, hatching, meanders, running circles, and S-shaped motifs. These various decorative elements make it possible to establish the date of these musical instruments as 4th–3d century B.C. by analogy with similar elements reproduced on Chinese bronzes of the Huai style dating from the pre-Han era (see CHINESE ART). These instruments, like certain bronzes discovered at Dong-son, were probably the products of an industry that was dependent, to a certain extent, on Chinese metallurgy and art (see METALWORK) but belonged to a civilization that nevertheless differed from Chinese culture since it had strong ties with the Indonesian peoples of the Malay Archipelago and of other regions of southeast Asia (see INDONESIAN CULTURES).

Not all the bronzes discovered at Dong-son, however, and not all the bronze drums of Type I belonged to the early period. Probably this industry spread over several centuries, as is indicated by the development of the ornamentation and of the scenes represented on these bronzes. Moreover, coins dating from the time of the Chinese usurper Wang Mang (A.D. 9–23), discovered in conjunction with bronze objects in certain graves, make it possible to establish the 1st century of our era as an approximate terminal date.

This Đông-so'n culture, which was more indigenous than Chinese, gradually gave way after the 1st century of our era to an art that was more Chinese than indigenous, as is shown by the many objects discovered in the brick tombs in the Tonkin delta and in northern Annam.

Chinese domination. The tombs that date from the Chinese occupation assume different aspects according to the periods to which they belong. The oldest go back no further than the 1st century of our era. They are perhaps the tombs of Chinese soldiers or officials belonging to the retinue of the Chinese general Ma-yuan, who, in A.D. 40, came to put down the rebellion of the two Tru'ng sisters. The position of these first tombs, dating from the Eastern Han period (25–221), is generally indicated on the surface of the ground by a mound. Most of the tombs take the form of one or several vaulted burial chambers in which the coffin or coffins lay. The simplest and also most common form consisted of a rectangular chamber that, during this period and the following Six Dynasties period (3d–6th cent.), was always quite large (ca. 5–6½ ft. wide by ca. 13–16 ft. long) and always had two vestibules set one at either end. Certain tombs comprised two chambers or, occasionally, three (which was the maximum), for example, the two tombs discovered at the village of Nghi-ve (Bac-ninh province). In these two tombs each of the three chambers, set parallel to one another, was preceded by a square vestibule giving access to a large transverse common hall, which was itself preceded by three rectangular vestibules. On each side of the lateral burial chambers were set two other, smaller chambers whose purpose is unknown. In most cases the funerary furnishings have been discovered in the vestibules.

Throughout the first five centuries of the Christian Era these tombs, which were all barrel-vaulted, were built of large bricks, measuring approximately 17 in. by 8¾ in. by 2¾ in. for the walls; in the vaults the dimensions were the same but the bricks were wedge-shaped, decreasing in thickness from about 3½ in. to 2¼ in. The bricks were baked and were ornamented on one face or sometimes on two adjoining faces (those which remained visible in the structure) with a great variety of decorative motifs: various lozenge patterns, checker designs, concentric circles, spirals, S-shaped motifs, sometimes joined in combination with other motifs, for example, with a kind of quatrefoil made up of irregular lozenges, a sort of stylized vajra.

In the T'ang era (7th–10th cent.), whether the tomb was simple or made up of several chambers (three was still the maximum), the size of each chamber was smaller, barely larger than the coffin it was to contain; but the principle of barrel-vaulted construction was maintained, as was the common transverse vestibule where the funerary furnishings were placed. The construction is in some measure a simplification of the earlier tombs. The bricks, of inferior quality and less well baked than the Han bricks, were smaller and often undecorated.

In the Sung period (10th–13th cent.) the brick burial vault was no longer used. The graves of this period, which came after the Chinese domination, were always plain pits, at one end of which were placed the funerary furnishings. This development of the tomb can be observed not only in its construction but also in the funerary furnishings that it contains. In the Han tombs, and also in those of the Six Dynasties, these furnishings were generally rich and varied. They consisted of vessels of different shapes, sometimes highly original (tripods, baluster vases, earthenware jars decorated with *t'ao-t'ieh* masks, bowls, cups, etc.), as well as a whole collection of terra-cotta objects, including not only those in common use which the deceased would have used during his life on earth but also miniature models of dwellings, some of them perfectly preserved, beside which were placed models of ovens, wells, and the like. To these wares of varied shapes and uses there were sometimes added (more often in the tombs of Thanh-hoa than in those of Tonkin) bronze objects of Chinese workmanship, such as mirrors, vessels of *hu* form, tripods, bowls, and clasps.

Together with these imported objects there were others, also of bronze but with Indonesian affinities and therefore of local workmanship. These represent a continuation of the Đông-so'n tradition and therefore reveal a combination of the Chinese and indigenous cultures, the former at first overlaying the latter without destroying it, and then gradually replacing it.

Among the most characteristic objects of local origin should be mentioned the fine lamp holder discovered by O. Janse in a tomb at Lach-truong (Thanh-hoa province; PL. 361). Various hypotheses — none of them entirely satisfactory — have been advanced as to the significance of the two figures found in the same tomb, one playing a mouth organ, seated astride the back of his companion, who appears to be dancing.

In the T'ang period the funerary furnishings were simpler and less varied; they comprised merely a few bowls and some large earthenware jars, often undecorated. None of the tombs of this period has yielded any of the human figures in terra cotta that are so characteristic of the T'ang graves of China. The furnishings became even more limited in the subsequent Sung period, although they were then of higher quality. There were fine urns with lids decorated with lotus petals in relief and with bellies elegantly ornamented with brown flowers, leaves, birds, or human figures on a creamy white or light-yellow background. There was also some fine celadon ware in a large variety of colors, from ordinary brown celadon to the superb "sea green" celadon, which is sometimes adorned with motifs in slight relief (fish, floral decoration, etc.).

This long period of Chinese occupation, lasting until the middle of the 10th century, was in fact marked in north Vietnam only by this funerary architecture, which was dependent upon Chinese inspiration, although certain objects belonged to an indigenous art whose first expressions date back to the Đông-so'n era.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Art of Dai-la. Although nothing is known of the secular or religious architecture of this Chinese period, scholars are a little better informed about its sculpture, at least for the late period. Their sources are some bricks whose decoration is similar to that of the bricks used in the tombs, numerous fragments of architectural decoration in terra cotta, decorated flagstones, and pottery, discovered mostly in the vicinity of Hanoi, the site of the ancient city of Dai-la. Although some of these fragments, such as the bricks and flagstones, may have belonged to secular buildings, most of them certainly came from religious edifices. The place they may have occupied in these buildings has been shown by the stupa of Binh-son, which includes similar elements. Although none of these fragments is dated, the Binh-son stupa makes it possible to set the 7th–8th century as the earliest possible date. These early fragments are in fact the first pieces characteristic of Vietnamese art; their chief place of origin, Dai-la, has given its name to this artistic period, which is also called Sino-Vietnamese since most of its products show a strong Chinese influence.

In addition to the fragments from Dai-la there are those discovered, since 1940, in the Vạn-phúc temple at Phat-tich (PL. 362). The sculptures brought to light at this site are of two kinds: stone and terra cotta. The stone pieces must have belonged to a former stupa built, according to certain Vietnamese and Chinese texts, about 866–67 by the Chinese general Kao P'ien, who was at that time governor of the protectorate of Annam. Among the most characteristic of these sculptures is the statue of a lokapala (PL. 362), a guardian of the Buddhist Law, in which the Chinese influence is revealed by the presence of the leggings, but which also shows, for the first time in a sculpture discovered in Vietnam, an Indian influence in the *hanchement* of the figure and the decoration of the robe. Another statue from the same site, as fine as the first and perhaps even more typical, shows a *kinnara* (PL. 362), an imaginary creature, a musician with a bird's body and a human head; in this piece may be distinguished both a Chinese influence of the T'ang period, which characterizes the head, and an Indian influence, different from that discernible in the lokapala. Indeed, the figure's general bearing, with the drum, shaped like an hourglass, hung around its neck, reveals influences from both Champa (see CHAM, SCHOOL OF) and Java, which had some contacts, though infrequent, with ancient Vietnam. These sculptures, as well as a Vajrapāṇi statue and various fragments of decorative sculpture, all showing this double Sino-Indian influence, characteristically represent the fusion of the last manifestations of Hindu art, passing through Central Asia and T'ang China, with Cham art.

These different influences are also perceptible in the friezes decorating several stone bases of columns that were incorporated in the present temple of Phat-tich. These friezes, which are all alike, have as a central motif a stylized lotus flower in the shape of a heart enclosing three chrysanthemum flowers. On each side of the lotus are grouped five figures, four of them musicians playing various instruments; the fifth, which is the one nearest the central motif, is shown making an offering in the form of a sugar loaf. Although the posture and arrangement of the figures in these friezes recall those which appear in certain Cham bas-reliefs, they are more comparable to those in the bas-reliefs of Yün-kang or, especially, those of Lung-mên (see CHINA; CHINESE ART). The Cham influence is more marked in an enormous section of a vault, also from Phat-tich, in which it is clearly revealed by the presence of a corner Garuḍa that recalls the Cham corner motifs in the posture of Atlantes. This Cham Garuḍa motif was reproduced, but in a less delicate style, a little later in an altar base of the Thiên-phúc temple at Thuy-khe, dated 1132, which, like the stupa of Binh-son, heralds the following period of the Trân dynasty.

The so-called "Kao P'ien stupa" to which these stone sculptures belonged was replaced by another stupa, this time built of brick, founded in 1057 by King Lý Thánh-tôn, as is testified by the two-line inscription in beautiful and delicate characters stamped on each of the bricks used in its construction. Of this second stupa, whose substructure measured at least 28 ft. square, many decorative elements have been recovered. These are all ornamented fragments of terra cotta, some of them glazed. In style they resemble those discovered at the ancient site of Dai-la and in the earth platform of the Chuà Cói temple, as well as at the site of an old stupa built in 1121 by Lý Nho'n-tôn at the top of Long-doi-son and replaced by the present temple, which was built at the beginning of the 15th century. These fragments belong to what is commonly called the Lý style, since it was mainly the kings of this dynasty who promoted the building of edifices of this kind, of which the stupa of Binh-son is the last representative monument.

The Lý style, like that of Phat-tich of which it is the continuation, belongs to the art of Dai-la and shows the same characteristics. It reveals the same refinement in the representation of vermiform or threadlike dragons embellished with delicate volutes, the same rinceaux trimmed with small alternating leaves that, shaped at first like commas, gradually assumed the form of stylized clouds or lanceolate leaves, the latter characteristic becoming accentuated in Vietnamese art of the 15th century. The stupa of Binh-son (probably 11th–12th cent.) marks the end of this period of Dai-la art, during which Vietnamese art attempted to assimilate the Chinese and Indian influences it had received in the course of the previous centuries. This stupa, at present 11 stories high, while reproducing certain decorative motifs — such as the dragons — that are proper to Dai-la art, heralds the subsequent art of the Trân dynasty. This is apparent, for example, in the shape given to the lotus petals surmounting its base, which are like those decorating the base of the Thiên-phúc temple, which in turn can be compared to those subsequently carved on the tomb of Trân Nhân-tôn at Tuc-mac in 1310.

After the 12th century the art of Dai-la ceased to flourish. Reminiscences of it, however, appeared toward the middle and end of the 14th century, especially in the stele of Thị-du'c (1331) and in the dragons that formerly decorated the entrance to the royal palace of the citadel of the Hô rulers.

Art of the Trân period. This period extended from the end of the 12th to the end of the 14th century. The first dated example of Trân art is the stone altar on the Thiên-phúc temple at Thuy-khe, which is the only remaining trace of the temple built in 1132 by Lý Nho'n-tôn. Although built under the Lý rulers, its general massiveness distinguishes it from the style of that period. Certain motifs retained the delicacy of expression of the preceding period (e.g., the frieze of rinceaux recalling the one on the reproduction of a stupa from Dai-la); the lotus petals, on the other hand, are very different in style from those of Long-doi-son (which are ornamented with chrysanthemum flowers and date from the same period), although they differ only slightly from those of the Binh-son stupa and those of later date on the stupa of Trân Nhân-tôn at Tuc-mac. What characterizes the base of this altar, in addition to the corner Garuḍas — which recall, in a rougher form, those of Phat-tich and, consequently, the Cham influence — are the dragons that ornament the rectangular medallions. These dragons, like the Garuḍas, are heavier and no longer have the vermiform or threadlike form of Dai-la art. The fine, delicate art of Dai-la was superseded by a new, more massive form of artistic expression. This subsequently grew refined once more, but in a different style that appeared at the beginning of the 15th century in the monuments of Lam-son.

Another monument that is a good example of the art of this period is the tomb-stupa built in 1310 in front of the Phô-minh Buddhist temple at Tuc-mac; only the stone basement of the stupa belongs to that period, the brick stories having been reconstructed at a recent date. The cubic appearance of the ground floor of this monument contrasts with the great delicacy of its decoration. The simply incised friezes that decorate some of the platbands of the basement and the pilaster bases are composed of rinceaux with elongated and intersecting volutes enclosing circles decorated with delicate scroll motifs like those of Dai-la. Similarly, the arrangement and decoration of the lotus petals that ornament the upper molding of the basement are comparable to those of the stupa of Binh-son.

Of the old temple built in 1262 behind this stupa and

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

dedicated to King Trân Nhân-tôn nothing remains except the four door panels, which are the oldest and also the finest in Vietnam. The upper part of each panel is decorated with a coiled dragon, its head lifted toward a pearl, the symbol of perfection. These dragons are set in a kind of trilobate teardrop whose prototype was an antefix from Dai-la. Between the coils of their bodies appear volutes, some of which, in the shape of stylized clouds, herald the Lê art of the 15th century as well as the flamelike decorative motifs that were to become fashionable in the 16th and 17th centuries.

The citadel of the Hô rulers (1397) and the few pieces of sculpture from it are the last examples of the art and architecture of the Trân.

Art of the Lê period. This period extended from the first third of the 15th to the end of the 18th century. Its beginning was marked by a new Chinese invasion, that of the Ming, which introduced new forms of expression into Vietnamese art, although the old themes were also preserved.

The first buildings dating from this period are those marking the grave of King Lê Thái-tô at Lam-son (FIG. 788). Of this tomb, dated 1433, only the stone elements have withstood the invading jungle; they include steles, staircase strings, and the human figures and animals of the Spirit Road. The outer surfaces of the strings of the staircases, which led to the temple and which were surmounted by a rampant dragon, are adorned with a decorative composition with motifs similar to those found in the Dai-la period on facing or flooring bricks as well as on a stone console from Phat-tich. This composition consists of a group of geometrically arranged rinceaux representing lotus flowers in full bloom alternating with chrysanthemum flowers, but these flowers are much more stylized than in the Dai-la period. The lotus flowers, for example, tend to be transformed into clouds, as on the ramp that surmounts the staircase strings. Similarly, the comma-shaped leaves of the Dai-la rinceaux are here transformed into volutes with sinuous outer edges, some of which end in spirals and others in flames. From the 15th century on these two new decorative motifs, spirals and flames, were increasingly used, both in stone and in wood sculpture, especially in the decoration of structural timbers.

Better preserved, and identical with the staircase strings of Lam-son, are those which formerly adorned the entrance to the royal palace of the Lê rulers in Hanoi. Their resemblance to those of Lam-son is so complete that they seem to have been executed by the same team of craftsmen.

The stele, dated 1433, on which the epitaph of King Lê Thái-tô is engraved also deserves mention. Its border decoration is composed of superimposed teardrops whose prototype goes back to the Dai-la period, although the treatment here is very different. The dragon inscribed within each teardrop recalls not only the dragons of Dai-la but also those ornamenting the panels of the doors of the Phô-minh temple, except that here it is embellished with a plant decoration that may be compared to that of the friezes of the Trân Nhân-tôn stupa at Tuc-mac. This decoration of dragons inscribed within teardrops was used for the last time in the stele of Lê Thái-tô. The border decoration of the steles that were subsequently erected at Lam-son — those of Lê Thái-tôn (1442), Lê Thánh-tôn (1498), Lê Hiên-tôn (1505), and Lê Túc-tôn (1505) — was edged with affronté rampant dragons forming an unbroken sinuous line all around the circumference of the stele.

The human figures and animals that border the Spirit Road in front of the tumulus of each of the Lam-son tombs are of no great artistic merit. They lack the artistic quality of the sculptures of the staircase strings or even that of some of the animal figures in the temple courtyard. Indeed, this Vietnamese funerary sculpture, both during the Lê period and later under the Nguyên at Hué, was of a quality inferior to that which can be seen in certain other monuments, for example, at Hoa-lu or even at the tomb of Nguyên Diên.

After Lam-son, it is Hoa-lu that provides the sequel to this art of the Lê period. The oldest remains of Hoa-lu are the stone sculptures, animals and offering tables, placed in front of the dynastic temple of the Đinh rulers, built about 1607 or 1610 (PL. 364). The style that predominates in these sculptures is very different from that which characterizes the sculptures of the 10th and 11th centuries. All the characteristics first observable at Lam-son are developed and accentuated here. The accolades that had made a timid appearance on the basement of the Thiên-phúc temple toward the middle of the 12th century are developed and embellished by spiral-shaped leaves. The macrocephalous dragons that border the main offering table of the funerary temple of Đinh Tiên-hoàng are in a distinctly more angular and tortuous style. Lastly, the dogs are better formed and more realistic than those of Lam-son; although they are, like the latter, ornamented with flames on their shoulder blades (a decoration that first appeared in the 11th century on the monolithic animals lined up in front of the Vạn-phúc temple at Phat-tich), here these motifs are sharper and the tips of the flames more pointed.

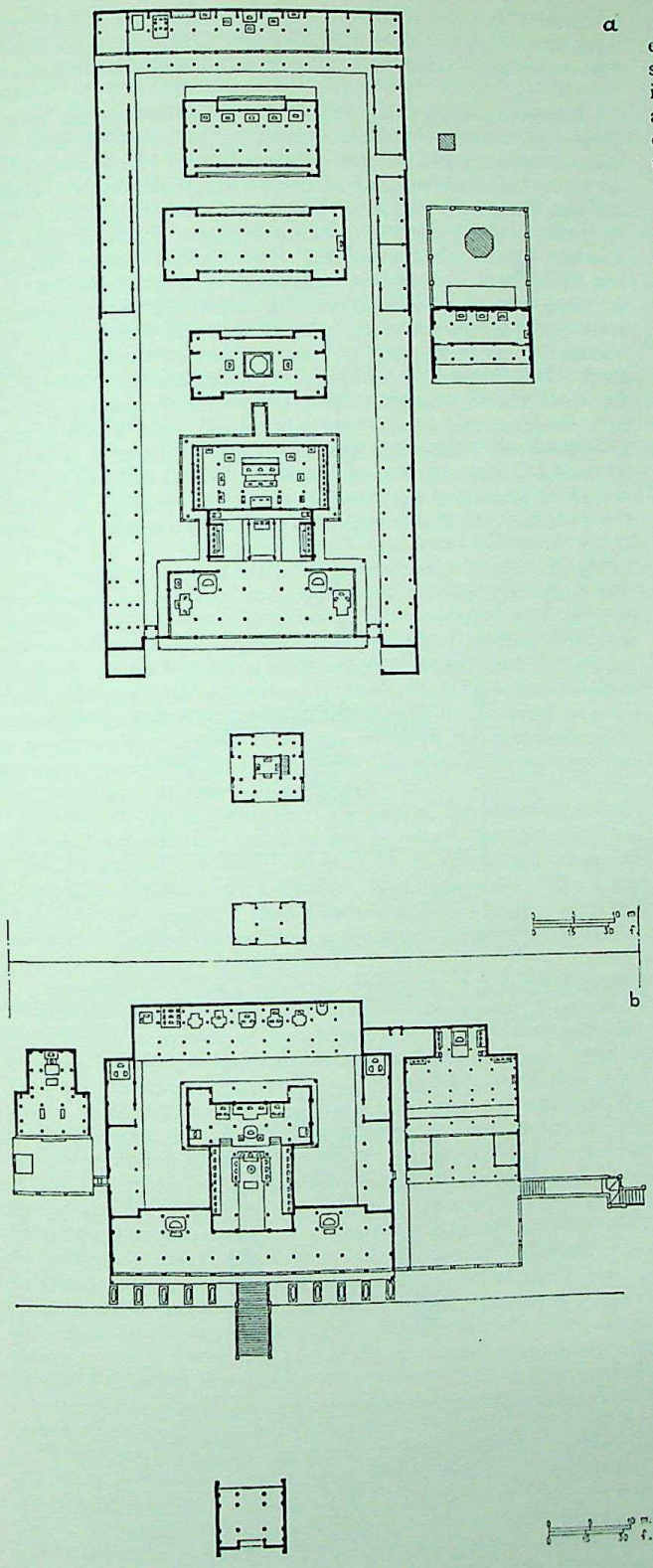
Although the Chinese influence, having been fully assimilated, is no longer discernible in the sculptures of Hoa-lu, it made a new, momentary, and localized appearance in the sculptures of the balustrade of the Ninh-phúc temple at But-thap (PL. 364), because of the fact that the temple was restored by two Chinese bonzes, Chuyêt-công and his successor Minh-hạnh, the former from Fukien province and the latter from Kiangsi. This stone balustrade, built between 1646 and 1647, ends at the back of the temple in a pretty little bridge, also of stone. The subjects and scenes carved in relief on the 38 panels composing the balustrade are highly varied. Different species of flowers and shrubs alternate with scenes in which the animal kingdom predominates: horses and deer, the dragon-horse (*long-mã*), the phoenix (*con-phu'o'ng*), lions, carp turning into dragons. Although the subjects are often of Chinese inspiration and may be compared with certain bas-reliefs of the temples of Hu-nan, their execution shows Vietnamese craftsmanship. The principles are the same as those apparent in the composition, the subjects, and the execution of the bas-reliefs of the base of the stupa built in 1647 by Minh-hạnh over the ashes of his predecessor Chuyêt-công. The portrait statue of Minh-hạnh (PL. 363), the finest specimen of Vietnamese statuary, is placed in the niche of the stupa of Trach-lam, which was built in his honor in 1660.

The Ninh-phúc temple (FIG. 785), although entirely restored in 1646–47, nevertheless preserves some elements from an earlier period, such as the mobile wooden stupa, octagonal in shape and nine stories high, that, according to some texts, was probably built at the beginning of the 14th century by the Vietnamese bonze Huyên-quang. The bas-reliefs ornamenting the eight sides of the first four stories, among which the Paradise of Amitābha is recognizable, show, both in their composition and in their decoration, a transition between the end of the art of the Trân era, whose simplicity they reflect, and the beginning of the art of the Lê period, which they herald.

With the tomb of Nguyên Diên, built in 1769 in the vicinity of Bac-ninh, the art of the Lê period approached its end. In this small monument everything is rectilinear, the squares are juxtaposed with the rectangles, and the motifs themselves, inscribed within quadrilaterals, follow this movement; a general geometrizing of the forms is apparent. New motifs make their appearance here, especially the key meander, which was often to be used in Nguyên art.

Art of the Nguyên period. The art of this period flourished chiefly at Hué. Originating at the beginning of the 19th century with the accession of Gia-long in 1802, it comprises two subdivisions. The first extended throughout the entire 19th century and was characterized by the many buildings of the royal palace and the tombs built by Gia-long and his successors. At this time Chinese art, and more particularly that of Peking, exercised a new and powerful influence; the Ngộ-môn gate that gives access to the palace is one of its finest products. Notwithstanding their efforts to free themselves from this influence, the Vietnamese hardly succeeded in doing so. Evidence

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Vietnamese buildings for Buddhist worship, plans. (*a*) But-thap, Ninh-phúc temple; (*b*) Phat-tich, Vạn-phúc temple (*from Bezacier*, 1955).

of this can be seen in the nine beautiful urns lined up in front of the Thê-miêu. Cast in 1835–36, they are a reflection of those cast by the emperors of the early Chinese dynasties. Nevertheless, the motifs worked in relief on the bellies are Vietnamese in technique.

With the accession of Khái-định in 1916, this Sino-Vietnamese style underwent profound changes. The new style preserved only a few decorative motifs from the past. The Chinese influence was at this time replaced by that of neoclassic Western art, which was not assimilated with any great success. The decoration of the tomb of Khái-định, built in 1925, is the most striking example of this tendency.

ARCHITECTURE. *General characteristics.* As the preceding discussion indicates, the sculptural works can be dated with a certain degree of accuracy; unfortunately, this is not the case with architecture. Although the founding of many temples in early periods is mentioned in inscriptions, these temples, always built of wood, were subjected to successive restorations, which, without perhaps profoundly changing the original conception, may have modified their appearance and decoration.

Of all the forms of artistic expression, architecture is the one in which the Vietnamese have shown the greatest creative originality. It is also the one that best met the manifold requirements created by the presence of the numerous gods and spirits of the religions practiced in Vietnam: Buddhism, Taoism, and Confucianism (qq.v.). The religious requirements, to which should be added the funerary needs, whatever their importance, were not, however, the only ones that had to be satisfied; the equally numerous civil and military requirements had also to be taken into account.

One of the main characteristics of Vietnamese architecture, whatever its purpose, is its consideration for landscape, a characteristic that appears more especially in religious architecture: the prettiest spots of the countryside are always complemented by a religious building. But this architectural landscape created by man complementing nature is not the result only of artistic concern but also, and even more, of a concern with magic and religion demonstrated by the application of geomantic principles. The result is an intimate and inseparable association between the monument and the landscape surrounding it.

Although the geomantic principles that determine the establishment, orientation, and disposition of Vietnamese monuments, as well as their size, vary according to the nature of the terrain and the presence of vegetation, the construction of the monuments depends on architectural principles which are identical for all buildings although they are variable in their application. The application of similar principles inevitably created a similar architectural form for all structures, thus creating a certain monotony. This monotony, or rather, this uniformity of style, was nevertheless relieved by the individual character given to each monument and by the purpose assigned to it, as well as by its surrounding landscape.

The Vietnamese, like the Chinese who provided the main source of their inspiration, were only rarely concerned with building their monuments in terms of elevation. Instead, they developed the horizontal planes in large spaces where the crowd could deploy through a sequence of courtyards and terraces joined to one another by large shaded avenues. The finest application of these principles is to be found at the tombs of the Nguyên in the vicinity of Hué, as well as in some Buddhist temples of Tonkin.

Vertical architecture, which was less frequent, was used more particularly in the building of stupas. It seems to have been in favor between approximately the 9th and the 13th century, judging by the remains that some excavations have yielded and by the existence of the stupa of Binh-son, the only example of this architecture still standing. This period of favor corresponds to the flourishing of Buddhism under the Đinh, Lý, and Trân rulers. In the following centuries this style of architecture was confined to the stupas built in most of the Buddhist temples, beneath which the bonzes were buried.

Religious architecture. This architecture is far from uniform, the plan of each building varying according to the religion practiced in it.

The Buddhist temple (*chuà*) is made up of a series of chambers juxtaposed in the shape of an H: the "front chamber," reserved for the public; the "chamber of the perfume burners,"

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

where the bonze reads the prayers each day; and the "chamber of the main altars," where the many statues that form the Buddhist pantheon are lined up on steps, their number varying according to the wealth and importance of the temple. Behind this nucleus that forms the sanctuary various buildings are constructed for different purposes, all of them comprising, like the sanctuary, a single story. A bell tower with one or sometimes several stories (e.g., Chuà Keo at Dung-nghia) occasionally completes this complex enclosed by a peripheral gallery ending in an entrance portico with three openings. Some of the important temples (Vạn-phúc at Phat-tich, FIG. 785; Thiên-phúc at Thuy-khe; Chuà Keo) are embellished with sacred pools.

Whatever the kind of building, its architecture is always conceived according to the same principles: a large rectangular hall covered by an immense roof with inward-curving ridges and upturned ends, supported by many columns surmounted by a massive framework whose beams are decorated with sculptures.

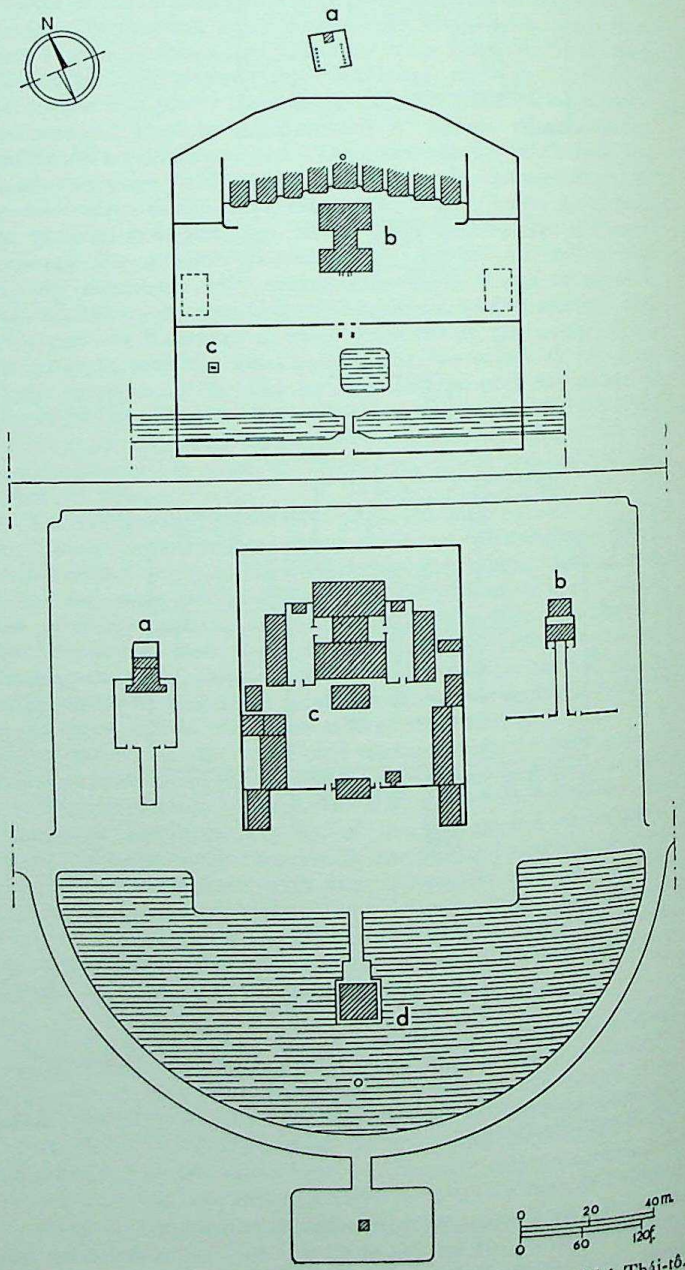
The *đên* is the temple of Taoism, in which a national or regional spirit is worshiped. Its external architecture hardly differs from that of the *chuà*, although its over-all plan is simpler and often comprises fewer buildings than the latter. Its interior, however, is quite different. The spirit, rarely portrayed by a statue, is represented by its tablet placed on an armchair of bronze or of carved and lacquered wood and enclosed within the sanctuary from which the public is excluded. The furnishings consist of sets of symbolic weapons and a number of altars for offerings.

The *đình* has both a secular and a religious function. It is the meetinghouse, the place where the local dignitaries convene to deal with matters of administration or of local justice concerning the community; they also assemble there to celebrate certain ceremonies on the occasion of village festivals or spirit anniversaries. However, the religious role of the *đình* is even more important: it is the holy place harboring the altar of the guardian spirit, the protector of the village, whose tablet is carefully enclosed in a large and opulent tabernacle, covered with lacelike carving, that adorns the central bay of the building. Consequently the edifice is simultaneously a holy place, a meeting hall, and even a banqueting hall. These different functions make it the community center par excellence, around and in which the entire religious and social life of the community is concentrated. It is often isolated in the center of the village or near its edge, and its large size frequently makes it one of the most majestic monuments of the Vietnamese landscape. Often made up of one immense T-shaped hall, it is the only Vietnamese structure built on piles; from this point of view it can be compared to the "men's house" of the proto-Indo-Chinese mountain peoples. Its external architecture is simple. Usually it consists of an immense, imposing roof supported by huge columns holding up massive timberwork (PLS. 365, 366). It is certainly in the construction of this type of monument that the Vietnamese craftsmen exploited their knowledge and traditional talent. In fact, it is in the *đình* that the timberwork most characteristic of Vietnamese architecture is found, timberwork that is often profusely decorated with deep and delicate carvings.

The *vân-miêu* is the temple of literature assigned to the cult of Confucius and of his chief disciples. Every provincial capital has its own *vân-miêu*, but the one built in Hanoi in 1070 and restored many times since then remains the most important (PL. 367); in its general lines, it reproduces the Confucian temple built at Kufow (Ch'ü-fu), the native town of Confucius. It is a series of buildings separated by inner courtyards. Although it is important for its size and interesting for its over-all composition it is nevertheless not the finest from the point of view of architecture and decorative timberwork.

Funerary architecture. Examples of monumental funerary architecture are comparatively rare and mark the burial place of a venerated or distinguished person. The common graves are merely plain mounds whose shapes vary in different regions. Among the tombs of distinguished persons an interesting example is that of the military mandarin Nguyên Diên, built near Bac-ninh in 1769. Enclosed in a double wall of laterite, this tomb consists of a stone slab behind which is built a laterite block; near this block are placed two figures, a military and a civil mandarin, while other figures are lined up along the enclosure walls.

Interesting as they may be, however, these mandarins' tombs cannot be compared with the royal tombs, whether those of the Lê dynasty at Lam-son or those of the Nguyên dynasty at Hué. No trace remains of the tombs of the rulers of the Lý and Trân dynasties (11th–14th cent.). Of the early tombs, only that of King Đinh Tiên-hoàng remains, originally built in the 10th century on the summit of the Ma-yen-son at Hoa-lu, his birthplace. This tomb, consisting of a quadrangular tumulus in masonry surmounted by a seat of the same material, is of modern construction, and there is no justification for considering the monument an exact preservation of the original tomb. It is impossible to appreciate what the architecture of the royal tombs may have been before the beginning of the 15th century, and even from that period only a few traces have survived. These are the remains of the tombs of rulers of the Lê dynasty buried in the sacred wood overlooking the village of Lam-son, the birthplace of the dynasty's founder, Lê Thái-tô. All that remains of this king's tomb (FIG. 788)



Vietnamese funerary buildings, plans. *Above*: Lam-son, tomb of Lê Thái-tô. (*a*) Grave; (*b*) temple; (*c*) stele. *Below*: Dinh-bang, funerary temple of the Lý emperors. (*a*) Vạn-chi'; (*b*) Vo-chi'; (*c*) temple; (*d*) tank.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

are the column bases of the old temples and the strings of the staircases leading to them. After crossing two porticoes separated by a large courtyard in which is erected the beautiful stele recounting the dead king's life, one comes to the main temple, 150 ft. by 118 ft., consisting, according to the common plan of Vietnamese temples, of three chambers juxtaposed in the shape of an H. Behind this temple, on terraces stretching in descending tiers to the east and west, several pavilions were built, each preceded by a staircase. From the central pavilion an avenue nearly 330 ft. long led to the tomb, which was made up of a plain square tumulus about 3 ft. high and 15 ft. square. It was preceded by the Spirit Road formed by a double row of paired human figures, horses, elephants, lions, and rhinoceroses. This complex, enclosed in a vast precinct about 1,000 ft. long and 720 ft. across, is the most complete one known. The tombs of the successors of Lê Thái-tô, built in the vicinity, consist merely of the tumulus, preceded by the Spirit Road, and the stele.

With the royal tombs built in the 19th century in the vicinity of Hué by the Nguyên rulers it is possible to form an exact idea of the appearance of this funerary architecture, which, like that of the tomb of Lê Thái-tô, is an intelligent interpretation rather than a slavish copy of the Chinese imperial tombs. These tombs consist of a number of structures scattered in a vast wooded park; fine avenues bordered with trees of every variety lead up to them across pleasant gardens adorned with streams and variously shaped lakes, a complex that perfectly expresses the intimate association of architecture and man-made landscape. Each structure has a precise purpose; the temple for worship, the pavilion with the stele, and annex buildings erected to commemorate ancestors, to house the wives of the deceased, or to serve as rest pavilions for the ruler when he came to supervise the work on his final resting place.

Although these different burial places comprised to a considerable extent the same buildings, their composition was always different. Indeed, the plan of Minh-mạng's tomb has nothing in common with that of Gia-long's tomb. The same is true of the tombs of their successors Tự-đức (PL. 367) and Thiệu-trị. These four tombs are the finest Vietnamese examples of landscape-oriented architecture.

Although the buildings that make up this royal funerary architecture hardly differ from secular structures, those marking the burial places of members of the clergy are quite different. The latter were always marked by a stupa (*tháp* in Vietnamese) in the shape of a quadrangular tower that comprised a greater or lesser number of stories according to the importance of the person buried there or the wealth of the monastery that had the tomb built. Sometimes a niche in one of the lower stories contains the statue of the deceased, as in the stupa of Trach-lam (Thanh-hoa), built in 1660, which preserves the portrait-statue of the bonze Minh-hạnh (PL. 363), and probably also in the stupa of the village of Tuc-mac. This 13-storied stupa, 66 ft. high, of which only the stone base is part of the original structure, was built in 1310 over some of the ashes of the bonze king Trân Nhân-tôn. Its architecture shows some features not found in any other monument, for instance, the curvilinear movement of the raised corners of the powerful basement molding and the projecting stone beams crowing the massive central structure.

The Ba'o-nghiêm stupa, built in 1647 near the Ninh-phúc temple at But-thap over the ashes of the Chinese bonze Chuyêt-công, who was the restorer of the temple, is an exception in that it was built on an octagonal plan. The base of this stupa is composed of two concentric walls decorated with carved panels in the same style as those of the balustrade of the Ninh-phúc temple described above.

Until the 18th century all these stupas were built of stone and conceived according to the same principles: a fairly high tower with several stories separated by a plain cornice. This type of building seems to have been replaced in the 18th century by constructions built of brick. However, the architecture of the building did not change, although the number of stories was reduced. The only innovation was the presence, on each of the four sides, of a recess on whose surface were incised or painted rather distorted Sanskrit characters or old demotic Chinese characters.

Civil architecture. The house, of course, occupies first place in this architecture. The wide variety of houses — whose study falls more in the province of ethnology than in that of art history — makes it difficult to determine a type.

No trace remains of the early Vietnamese royal palaces. What is known of them comes from the annals. It is at Hué, the last capital of Vietnam, that the study of a 19th-century Vietnamese royal palace can be made. Although it is conceived according to the arrangement of Chinese palaces, the royal palace of Hué also shows a Western influence in the conception of the outer surrounding wall.

The plan of the citadel of Hué (FIG. 772), in which the royal palace was located, comprises three concentric enclosures. The first or outer enclosure, Kinh-thành ("capital city"), conceived according to the principles of Vauban, contained various administrative buildings — ministries and civil and military offices — as well as several residences of important civil servants; the second, Hoàng-thánh ("imperial city"), comprised the different religious buildings — Thái-miêu, Thê-miêu, and so forth — devoted to the worship of the rulers of the dynasty and their ancestors. It was in the third enclosure, Tu'-câm-thành ("forbidden purple city"), that the palace buildings for the exclusive use of the ruler were located: the Cân-Cháhn, and audience palace; the Càn-thánh, the king's private apartments; the Thài-hòa, the throne room; and the Khôn-thái, the first queen's residence. The most important and finest of these buildings were destroyed in 1946.

This arrangement of a series of palace buildings (the main ones built on a north–south axis) surrounded by concentric enclosures, to which access is provided at Hué by the majestic Ngô-môn ("south") gate, is similar to that of the Chinese palace, particularly the palace at Peking. There is no doubt that Gia-long, the creator of the royal palace, and even more his son and successor Minh-mạng, who was especially imbued with classical Chinese culture, were inspired by the arrangement of the imperial palaces of the Celestial Empire.

This Chinese influence appeared not only in the ordering of the general plan of the Vietnamese royal city but also in the architecture and decoration of each of the palace buildings composing the city. This architecture was profoundly altered with the accession of Khái-định in 1916. The new style retained nothing from the past except a few decorative motifs. The Chinese influence was replaced by the Western neoclassic style, which, as is attested by the gate of the imperial villa An-định, was only imperfectly assimilated, thus creating a new art that departed as much from the style that inspired it as from the traditional Vietnamese style, whose best elements it abandoned.

Two other types of civil structures (although they are rather rare) should be mentioned: bridges and covered markets. Bridges are made of stone or wood, using the same construction: a stone or wooden superstructure resting on a variable number of piles, whose piers, also of stone or wood, are joined at the top by crossbeams. In the stone bridges, whose structure indicates an imitation of woodwork, the ends of the beams are decorated with stylized clouds and sometimes with heads of crocodile-like animals. The main features of the wooden bridges are their tile roofs and the center altar dedicated to the spirit of the bridge or of the river it crosses. One of the finest examples of these covered bridges was that of Khuc-toai near Bac-ninh, which was dismantled in 1940. There is little difference between the covered bridges of Tonkin and those of Annam, the best known of which is the so-called "Japanese" bridge of Faifo. The conception and structure are the same; only the roofing is different, flat tiles being used in Tonkin and rounded ones in Annam.

Some of the covered markets of Tonkin have undeniable architectural interest, for example, that of the village of Yen-phu near Bac-ninh. This market, built in front of the village *đình*, consists of a peripheral gallery enclosing a large central courtyard like a caravansary. Access is by a large portico of brick. The timberwork of the gallery, which is identical to that of the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

galleries of religious monuments, is adorned at the corners with graceful and delicate lanterns that produce a beautiful effect. Like all the monuments, this market is equipped with a small altar dedicated to the tutelary spirit of the place.

Military architecture. Of the various military constructions, only the citadels are considered here, leaving aside the various fortifications built both in Annam and in the north of Tonkin, such as the Mac Wall. The citadels were of two types. The first was of Chinese origin (the earliest citadels having been built by the Chinese governors) and continued up to the end of the 18th century; the second, of French inspiration, was developed by Olivier de Puymanel, a French engineer who built various works for Gia-long, beginning with the citadel of Saigon in 1790. The most important citadels correspond to the location of the old capitals. Although the plan of the citadel-capital of Hoa-lu (10th cent.) and of those that succeeded one another on the site of Hanoi from the 7th to the 15th century cannot be reconstructed because their sites have undergone profound upheavals, it is possible to study the plan of the citadels of Co-loa (FIG. 769), Luy-lau, Ho-thanh, and Yen-truong, all of which are earlier than the 16th century.

On the basis of their remains, it appears that the plan of these fortified towns, from the 3d century B.C. for Co-loa up to the 16th century for Yen-truong, underwent no change. The towns were surrounded by three concentric enclosures. The first one, square or rectangular, the "royal town," contained in its center the royal palace, which was itself enclosed within another precinct on the same plan constituting the "forbidden city," the concept of which recalls that which governed the building of the successive cities of Peking and Nanking. Around the first enclosure were built an inner and an outer ringwall, ovoid and irregular in shape, constituting two lines of defense. This concentric ovoid shape seems in fact to have only a remote connection with strategy; it derived rather from a geomantic or astrological concept, a knowledge of which was indispensable for the building of all cities as well as for the choice of their location and orientation.

This concept was only partly changed under the influence of the French officers under Gia-long at the beginning of the 19th century. The plan of the royal city still remained square in general, but to it were added bastions and redoubts, inspired by the fortified towns built in France by Vauban. The outer surrounding walls disappeared; only isolated outposts without connecting earth embankments remained. The geomantic orientation, however, corresponding approximately to a north–south line, was respected, as, for example, in Hanoi, Hué, and Saigon.

Apart from the royal city, citadels conceived according to the same principles were built in the main provincial capitals, but here the square plan was not the only one adopted: some citadels were built on a regular polygonal plan with five, six, or eight sides.

BIBLIOG. F. Heger, Altre Metalltrommeln aus Südost Asien, 2 vols., Leipzig, 1902; H. Parmentier, Anciens tombeaux au Tonkin, BEFEO, XVII, 1, 1917; L. Cadière, L'art à Huê, B. des Amis du Vieux Huê, I, 1919; M. Bernanose, Les arts décoratifs au Tonkin, Paris, 1922; A. Durier, Décoration annamite, Paris, 1925; V. Goloubew, L'age du bronze au Tonkin et au Nord Annam, BEFEO, XXIX, 1929, pp. 1–46; J. Y. Claeys, Introduction à l'étude de l'Annam et du Champa, B. des Amis du Vieux Huê, 1934; B. Karlgren, The Date of the Early Dông-son Culture, BMFEA, XIV, 1942, pp. 1–28; O. Janse, Archaeological Research in Indo-China, 2 vols., Cambridge, Mass., 1947–51; H. Parmentier and R. Mercier, Eléments anciens d'architecture au nord Viet-Nam, BEFEO, XLV, 1952, pp. 285–348; L. Bezacier, L'art vietnamien, Paris, 1955; L. Bezacier, Relevés des monuments anciens du nord Viet-nam, Paris, 1959; O. Janse, The Ancient Dwelling Site of Dông-son, Brussels, 1959.

Louis BEZACIER

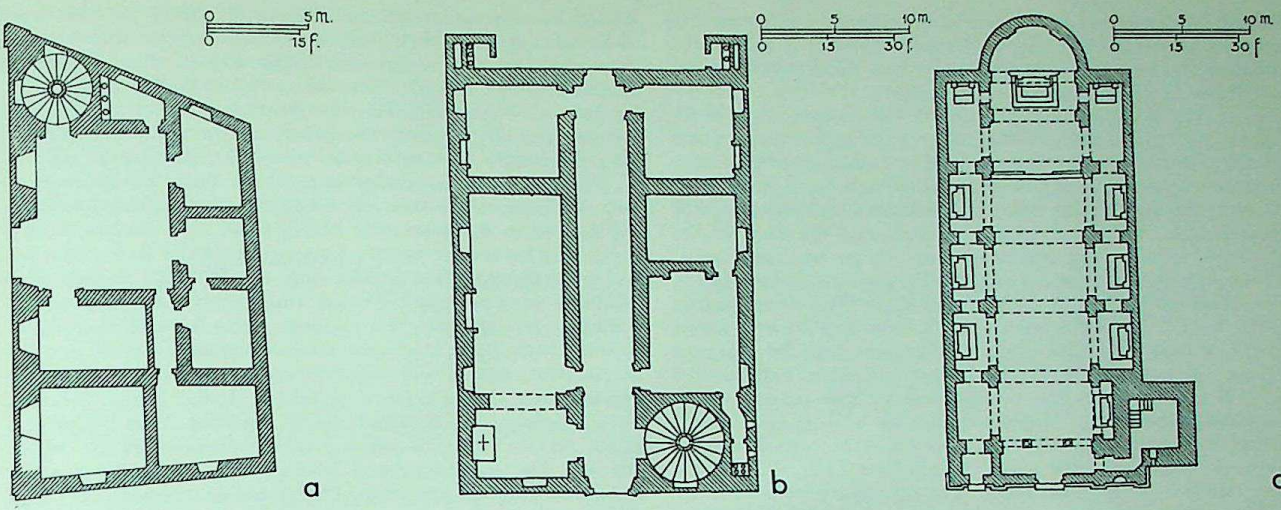
Illustrations: PLS. 361–367; 2 figs. in text.

VIGNOLA, GIACOMO [BAROZZI] DA. Italian architect of the late Renaissance and author of the famous treatise *Regola delli cinque ordini d'architettura* (b. Vignola, near Modena, Oct. 1, 1507, but according to Vasari, 1510; d. Rome, July 7, 1573). Vignola spent his youth in Vignola and then studied in Bologna under local masters such as Sebastiano Serlio, and, apparently, under Serlio's own teacher from Rome, Baldassare Peruzzi, both of whom, like Vignola, began their careers as painters before winning recognition as architects. While at Bologna Vignola demonstrated a strong interest in perspective and architecture, but he was nevertheless originally active as a painter when he went to Rome in 1530. In 1534, however, he found work as an assistant in the construction of the Vatican, where for two years he benefited from the expert tutelage of the architects Peruzzi, Jacopo Melighino, and Antonio da Sangallo the Younger. He later became thoroughly acquainted with ancient building construction at the Accademia Vitruviana, where with Francesco Primaticcio he worked on such projects as the collection of antique statuary and the preparation of plaster casts for the King of France, and in 1541 he and Primaticcio actually went to Paris and Fontainebleau. Although the extent of Vignola's activity in France is difficult to ascertain, the influence of this visit upon his later work was no doubt great. On his return to Italy he was given the position of construction supervisor of the Church of S. Petronio in Bologna for which he drew two designs for the façade, neither of which was executed. His drawings, along with the polemics which greeted them, are preserved in the Museo di S. Petronio (PL. 368). He was active in Bologna from about 1543 to about 1550 and participated to varying extents in the construction of a number of structures in the area. He probably had a hand in the construction of the Palazzo Boncompagni, but his particular contributions are difficult to pinpoint. The Palazzo Bocchi in Bologna, contracted in 1545, is thought to be completely the work of Vignola, whereas the attribution to him of the Palazzo Isolani in nearby Minerbio with its octagonal dove tower is disputed. Vignola has been cited as the likely architect of the extension of the Naviglio canal to Ferrara and of the Samoggia bridge in the same neighborhood. Willich (1940) credits him also with the tabernacle for the principal altar of S. Petronio, which, according to Walcher Casotti (1954, 1960), was completed in 1559 by another hand.

In 1546 Vignola was recommended to Pierluigi Farnese, duke of Parma and Piacenza. Thereafter he worked extensively for the Farnese family and became very famous chiefly as a result of his handling of their architectural problems. Before he was able to begin any important architectural projects in Rome he was assigned to complete the reconstruction, already begun, of the Farnese Church of SS. Giacomo e Cristoforo on the Island of Bisentina in the Lake of Bolsena. Willich also attributes to Vignola at this point in his career (1550) the hall of the ground floor of the Palazzo Comunale in Nepi, but Walcher Casotti (1954, 1960), although concurring that there are stylistic resemblances between Vignola's work and the design of the Palazzo Comunale, points out that documents conclusively indicate Antonio da Sangallo the Younger as the architect. Vignola also designed several churches during this period: a church in Mazzano Romano, constructed sometime around 1562–63 but no longer extant, and possibly the Church of S. Maria del Piano near Capranica (Willich, 1940).

When in 1549 Michelangelo (q.v.) broke with the Farnese family, Vignola assumed the supervision of the construction of the Palazzo Farnese in Rome, where he finished the hearths, chimneys, and portals. In February, 1551, he entered the papal service, supervising the construction of one of the architectural wonders of the times, the villa of Pope Julius III (PL. 370; VIII, FIG. 1087; XII, PL. 89), in which such prominent artists as Michelangelo, Giorgio Vasari (q.v.), and Bartolommeo Ammanati (q.v.) also took part. The designs for the casino of Villa Giulia are by Vignola and possibly parts of the main building are also his. In 1553, before the completion of the construction of Villa Giulia (1555), he may have been commissioned by Baldovino del Monte to design the connecting construction between the courtyard and the garden of the Palazzo di Firenze in Rome (Willich, 1940), although this work has been attributed as well to Ammanati (Walcher Casotti, 1954, 1960). Vignola is also thought to have designed and begun the construction of the Villa Lante in Bagnaia near

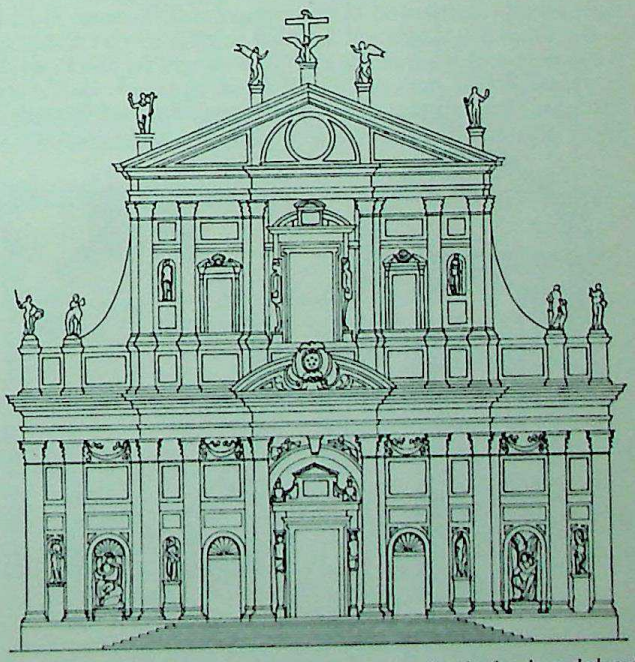
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



(*a*) Grotte di Castro, project for the Palazzo Comunale, ground plan; (*b*) Caprarola, project for the Hospital, ground plan; (*c*) San Oreste al Soratte, church, ground plan (*from Walcher Casotti, 1960*).

Viterbo. In 1554 he began the construction of the Castellina at Norcia, near Spoleto, and completed the Church of S. Andrea in Via Flaminia in Rome (PL. 369, FIG. 795; I, PL. 305). The nearby fountain in Via Flaminia may also be by Vignola (Coolidge, 1950). He designed the gate and the gardens of the Orti Farnesiani (FIG. 797) on the Palatine, but the date of this work (1555; Willich, 1940) has been disputed (1565–73; Walcher Casotti, 1954, 1960). In 1558, in competition with Francesco Paciotti, he drew up plans for the famous Palazzo Farnese in Caprarola (PLS. 371, 372; I, PL. 388; IX, FIG. 465). Vignola utilized the site and outlines of a ground plan of a pentagonal fortress that had been begun sometime around 1520 by Peruzzi and/or Antonio da Sangallo the Younger and converted it into a combination castle-villa. Vignola is responsible for the façade, the circular courtyard (FIG. 797), and the disposition of the interior spaces. Of particular interest are the grand spiral staircase (PL. 371, FIG. 797) and the so-called "Camera Tonda," or guardroom, for which Vignola also painted the ceiling frescoes. The construction of the Palazzo Farnese was begun in 1559 under his direction and was almost finished at the time of his death in 1573; the monumental exterior stairs were added about 1600 (Vignola's plans are in the Archivio di Stato in Parma). In Rome in 1558 he designed the portals of the façade and some of the interior details of the Palazzo della Cancelleria (XII, PL. 14), extended the Oratorio del Crocefisso in the Church of S. Marcello (Willich, 1940; Walcher Casotti, 1954, 1960, dates this work to 1563), and finished a plan for a building for the conclave in the west wing of the Cortile del Belvedere in the Vatican. The Church of S. Oreste al Soratte (FIG. 793), built about 1560, is also attributed to Vignola. Plans for a large villa, probably for Margaret of Parma, were drawn at this time but were never carried out. He may also have begun the reconstruction of the façade of the Palazzo dei Banchi in Bologna (PL. 372) in this year (Willich, 1940; Ackerman and Lotz, 1965), although some scholars date it to later in the decade (Coolidge, 1950). This structure, a pleasing fusion of several originally separate buildings, remained without the two clock towers with which Vignola had intended to crown the principal gateway (PL. 368). In 1560 he took over the construction of the Palazzo Farnese in Piacenza, whose cornerstone had been laid in 1558 by Paciotti. Vignola finished the plans for this building, which included a semicircular theater in the courtyard, in 1561, but its actual construction was hindered by local powers. Although he revised and extended the plans in 1564, only about one-third of the whole had been erected by the end of the century. He is presumed to have drafted the plans for the courtyard façade of the no-longer-extant Palazzo Torres in Piazza Navona in Rome sometime between 1550 and 1560. Also attributed to Vignola are the designs for the Palazzo della Corgna in Città di Castello and the Villa Ascanio in Castiglione del Lago, both executed by Galeazzo Alessi.

Vignola's treatise *Regola delli cinque ordini d'architettura* was published in 1562, followed in 1570 by the first of a long series of new editions. He was involved about 1565 in the designing and construction of the Cappella Ricci in the Church of S. Caterina dei Funari as well as in the execution of several other projects outside of Rome. Some scholars have assigned the design of the Church of the Gesù in Perugia to Vignola (Willich, 1940, dates it to 1562; Coolidge, 1950, assigns the work to 1566); but Walcher Casotti (1954, 1960) strongly repudiates this attribution and sees this church rather as the possible work of Annibale Lippi (1562). A chapel in the Church of S. Francesco in Perugia is assigned with greater certainty to Vignola. In 1564 he designed the Palazzo del Giardino in



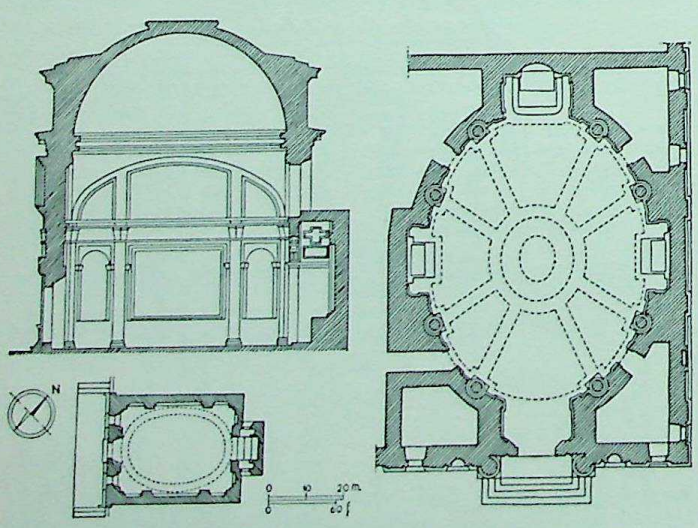
Rome, Church of the Gesù, scheme of the project for the façade as deduced from the Cartaro engraving.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Parma, which was later completely rebuilt. Although his authorship of the fountain in Piazza della Rocca in Viterbo (1566) is quite certain, the attribution to him of another fountain in nearby Ronciglione is disputed.

In 1564 Vignola began to work on the construction of St. Peter's in Rome, first as "secondo architetto" under Pirro Ligorio, whose position he assumed in 1566; after that date Vignola worked independently on St. Peter's until the end of his life. His task was to carry through the projected design of Michelangelo, to which Vignola contributed the idea of the adjoining domes. The details of their design and their actual execution were left in the hands of Giacomo della Porta (q.v.). The Chapel of S. Stefano in the Torre Pia in the western section of the Cortile del Belvedere in the Vatican was built in about 1566 following Vignola's design. The next year he designed a palace to be built in the small town of Isola Farnese; his plans were altered in the construction of this palace, which was never completed. Vignola's plans for one of his masterpieces, the Church of the Gesù in Rome (XI, PL. 450, FIG. 899), had been in progress for some time before 1568; the cornerstone was laid on June 26, 1568. The church was completed in 1576 after Vignola's death under the direction of Giacomo della Porta, who also replaced Vignola's design for the façade with one of his own (IX, PL. 312). The church was not actually dedicated until 1584.

Vignola designed the Palazzo Comunale in Grotte di Castro in 1568 (FIG. 793) and the palace in Cittaducale for Margaret of Parma in 1569, but the latter corresponds to the designs only in the ground plan of the tower. At the same time Vignola produced the plans for the Church of S. Marco in Caprarola and the Church of S. Maria degli Angeli in Assisi. The cornerstone of S. Maria degli Angeli was laid in 1569, but the church was not finished until the end of the 17th century, after having undergone a number of changes in design; it collapsed in the 19th century and was rebuilt with further changes. Vignola's hand is therefore very difficult to detect in the design. In 1570 he drafted plans for alterations of the papal palace in Castel Gandolfo, but because of more recent alterations it is impossible to tell whether Vignola's plans were actually carried out. Designs done the same year for a palace in Montalto di Castro were not executed. Plans done by Vignola in 1571 for houses in Caprarola are extant. In 1572 he designed the Church of S. Anna dei Palafrenieri in the Vatican (FIG. 795), constructed after his death by his son Giacinto and altered and extended in the 18th and 19th centuries. In 1572 Vignola submitted designs for the Church and the Monastery of S. Lorenzo el Real in the Escorial in Spain but declined an offer to visit Spain on the grounds of his advancing age. The designs for the Hospital in Caprarola (FIG. 793) and the Palazzo Comunale in Velletri also date from 1572. The Cartaro engraving of Vignola's design for the façade of the Church of the Gesù (FIG. 793) is dated 1573. In that year, while traveling to Caprarola to inspect the numerous projects being erected there according to his designs, the architect was stricken by fever and died on July 7. He is buried in the Pantheon. From the records left by Vignola, Egnazio Danti was able to publish a treatise on perspective, *Due regole della prospettiva pratica*, in 1583.



Rome. *Left*: Church of S. Andrea in Via Flaminia, longitudinal section and ground plan (*from B. Fletcher, A History of Architecture, London, New York, 1961*). *Right*: Church of S. Anna dei Palafrenieri, in the Vatican, ground plan (*from Walcher Casotti, 1960*).

Vignola's early education in northern Italy, his apprenticeship in Rome, and his stay in France were the chief determining factors in the formation of his style. His studies in Bologna gave his artistic talent a foundation that he later expanded and built upon in Rome. Not only did he learn a great deal in Rome working under Peruzzi and Antonio da Sangallo the Younger; he also took the opportunity to become thoroughly familiar with Rome's ancient monuments and buildings. His subsequent contact with French art somewhat differentiated his taste from that of most of his central Italian contemporaries, but his brilliant rise resulted chiefly from his accomplishments in the service of the popes and of the Farnese family, whose architect he was considered to be. Vignola achieved great esteem in Italy as supervisor of the construction of the Villa Giulia, architect of the Palazzo Farnese in Caprarola, and initiator of the Church of the Gesù in Rome, which served as a model for numerous later churches. As a result of the success of his treatise on architecture, his fame spread throughout Europe to the extent that Vignola's European reputation was unchallenged in his time. Although his ability was later depreciated in comparison with that of other architects of the 16th century, newer studies have brought a greater understanding of his importance.

The colorful vitality of Vignola's façades shows the Bolognese and more general northern Italian characteristics of his style. His successful development and frequent use of the oval ground plan was the result of the influence of Peruzzi, many of whose ideas Vignola markedly simplified for his own use. The influence of Antonio da Sangallo the Younger can be seen in the façades of Vignola's palaces. The impressions he received in France are responsible for his Gothic façade designs for the Church of S. Petronio and for the plans for the fortresslike palace at Caprarola. It has not yet been adequately clarified whether he made direct use of his studies of the ancient Roman architecture in his work as construction supervisor or whether he simply used the proven formulas of such earliers master as Bramante and Peruzzi and to what extent his knowledge of the antiquities specifically influenced his style.

Vignola's early work strongly reflects the Roman architectural ideas of the thirties and forties of the 16th century. His first buildings in Rome, the Villa Giulia and S. Andrea in Via Flaminia, are realizations of a new, discriminating, and finely nuanced conception of composition and harmony. In the Palazzo Farnese in Caprarola, Vignola created his masterpiece and reached the level of his mature style, also demonstrated in the façade of the Palazzo dei Banchi in Bologna. This style was characterized in his façades by the rectangular patterns created by the superimposed orders. In the design for the façade of the Church of the Gesù — with its presentation of mass as relief sculpture, developing dynamically toward the center of the façade design — a still later phase of his style is expressed.

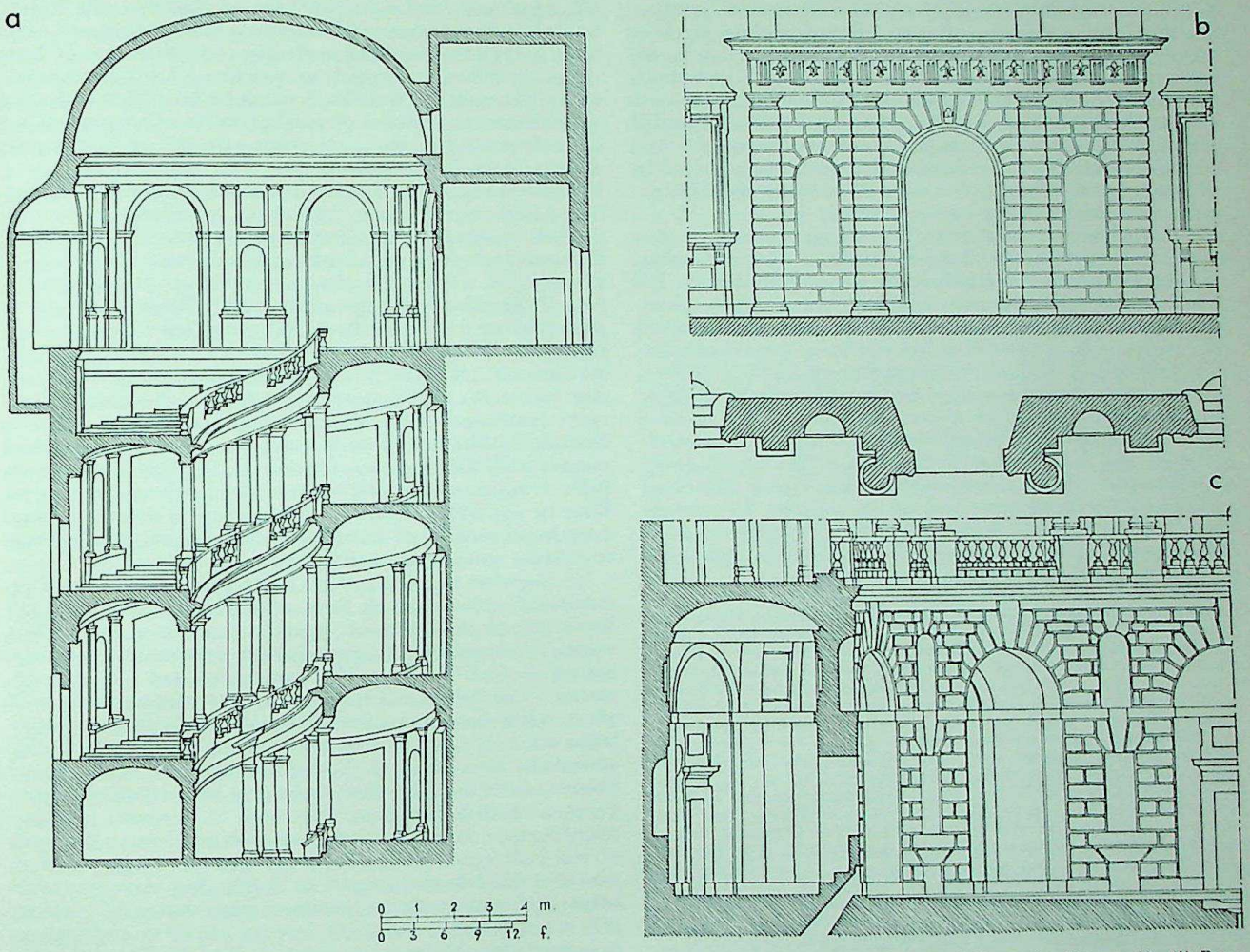
The churches designed by Vignola around an oval ground plan furnish a deep insight into his artistic development. The oval appears as a leitmotiv everywhere in his work. Vignola considered the oval form for practically all of the representative ecclesiastical buildings that he designed. In S. Andrea in Via Flaminia (FIG. 795) the oval appears only in the cupola that is set over the main rectangular area. This edifice is axially oriented in one direction, and the consequent emphasis given to the sole façade represents an important new achievement that differed basically from the multifrontality of most of the architecture of the High Renaissance. Characteristic also of Vignola is the presentation of space as a preexistent stereometric system, applied independently around the wall and outer structure — also evident in S. Andrea. As his style further developed in the following two decades, Vignola extended contained space

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

ever more unequivocally, separating it more and more from the surrounding outer structure, so that his later works can really be considered "double-shell" structures. His project for a building for the conclave, which included an oval church in the western section of the Cortile del Belvedere, did not get beyond the planning stage, but in the Chapel of S. Stefano in the Torre Pia of the Cortile del Belvedere Vignola realized, from the ground up, the first completely oval church. One of his plans for the Church of the Gesù in Rome used an oval design with a double-shell construction, in which the interior space and the outer walls scarcely came in contact with each other. Although this plan was not used in the Gesù, an edifice of the same nature that was actually constructed is the Church of S. Anna dei Palafrenieri in the Vatican. With the development of the oval church plan and the basic presentation of a building in which the interior space and outer structure are separate entities, Vignola definitely made his mark on the course of architectural history.

No less important is Vignola's part in the 16th-century Roman development of the twin-tower church façade, as well as his creation, in the Church of the Gesù, of a model for future architectural development. More research, however, is needed to assess properly the import of these two achievements.

The efforts to reconcile Italian architecture of the 16th century with stylistic implications of mannerism have cast a new light on Vignola and his work. Art historians of the Renaissance and baroque periods have long presented him as a transitional artist or at least as a precursor of the baroque. Many of the traits that are considered characteristic of mannerism — play of space, introversion, isolation, dissonance, stratification — are found also in Vignola's work. From this point of view, the Villa Giulia and the Palazzo Farnese in Caprarola are definitely mannerist buildings. Admittedly the Palazzo Farnese as a whole has a decidedly baroque appearance, resulting chiefly, however, from the later-added monumental exterior stairs. In the over-all appearance of the Palazzo Farnese in Piacenza one also already observes an activation of the structure in the sense of a baroque mass effect, while the spatial arrangement in the Church of the Gesù was considered a pioneering step toward the baroque.



(*a*) Caprarola, Palazzo Farnese, section of the spiral staircase (*from M. G. Iannoni and E. Maccari, Il Palazzo di Caprarola, Rome, n.d.*); (*b*) Rome, Orti Farnesiani, base area of the portal (*from Walcher Casotti, 1960*); (*c*) Caprarola, Palazzo Farnese, base area of the circular courtyard (*from Iannoni and Maccari, op. cit.*).

Vignola is acknowledged to be one of the outstanding central Italian artists of his generation. He is regarded as a successor of the early mannerists in Rome who were inspired by the work of Donato Bramante and Raphael. As such, Vignola differed from the mannerist artists following Michelangelo, such as Vasari and Ammanati, in his formulation of a more classical style of architecture that eventually effected a decisive turn toward the baroque.

Vignola was principally interested in "ben intesa architettura" (harmonious and well-proportioned architecture), which signified above all a flawless technical performance. His structures can actually be presented as models, for he strove for

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

impeccable artisan quality as well as for accuracy and beauty within the connotations of architectural theory. Vignola's "ben intesa architettura" was first and foremost an architecture of the intellect, and his designs were drawn, therefore, with the help of a system of proven mass relationships. He obeyed strictly the mathematical and stylistic laws of the orders, planning architectural details with the help of small-integer relationships and similarly harmonizing such larger units as the wall area and the volume of enclosed space.

In his *Regola delli cinque ordini* Vignola makes a literary presentation of the essentials of his architectural doctrine. His success as a theoretician of architecture was the result of his careful exclusion of irrelevant material from his treatise. He followed earlier authors in their unequivocal statements, passed over their confused points and unsolved problems, and avoided superfluities such as the antiquarian profusion of Ligorio and Palladio's (q.v.) evaluation of contemporary music theory. Vignola's book is remarkable for its brevity, and unlike any other work before it, it achieved an outstanding success throughout Europe for several generations.

Vignola was interested as well in various branches of contemporary art practice: the designing of pattern sheets, painting, and the collection and measurement of antique pieces. His chief preoccupation, however, was with the problems of architectural creation and engineering. His works can be divided into groups: a large number of less significant functional buildings and several edifices of exceptional artistic achievement. His architectural treatise placed him among the rank of those great architects who, since the time of L. B. Alberti, have forged beyond the practical problems of building to an independent study and an articulate formulation of the fundamentals of architecture. As an architectural theorist Vignola influenced architects all over Europe, and as an architect he brought about the decisive turn from mannerism to baroque through the examples of his buildings; thus he earned a significant position in the history of European architecture.

Bibliog. M. Jacomo Barozzio [G. Barozzi] da Vignola, Regola delli cinque ordini d'architettura, Rome, 1562; Vasari; E. Danti, Le due regole della prospettiva pratica di M. J. Barozzi da Vignola, with Vita di M. Jacomo da Vignola, Rome, 1583; P. M. Létarouilly, Edifices de Rome moderne, 3 vols., Paris, 1840–57; H. Willich, Giacomo Barozzi da Vignola, Zur Kunstgeschichte des Auslandes, no. 44, Strasbourg, 1906; Memorie e studi intorno a Jacopo Barozzi, Vignola, 1908; G. Giovannoni, Saggi sull'architettura del Rinascimento, 2d ed., Milan, 1935; W. Lotz, Vignola-Zeichnungen, JhbPreussKSamml, 59, 1938, pp. 96–115; W. Lotz, Vignola-Studien, Beitrag zu einer Vignola-Monographie, Würtzburg, 1939; Venturi, XI, 2, 1939; H. Willich, ThB, 1940; R. Zürcher, Stilprobleme der italienischen Baukunst des Cinquecento, Basel, 1947; J. Coolidge, Studies on Vignola, New York, 1950 (résumé of thesis); M. Walcher Casotti, Studi su J. Barozzi da Vignola, Quaderni dell'Istituto di Storia dell'Arte, Trieste, 1954; W. Lotz, Die ovalen Kirchenräume des Cinquecento, Römische Jhb. für Kunstgeschichte, VII, 1955, pp. 35–54; S. Bottari, Situazione del Vignola, AttiDeSPa per le antiche provincie modenesi e parmesi, VIII, XI, 1959; M. Walcher Casotti, Vignola, 2 vols., Trieste, 1960 (list of works and bibliog.); J. Ackerman and W. Lotz, Vignoliana, Locust Valley, New York, 1965.

Heinrich Wilhelm Wurm

Illustrations: pls. 368–372; 4 figs. in text.

VIOLLET-LE-DUC, Eugène Emmanuel. French architectural theorist and architect (b. Paris, Jan. 27, 1814; d. Lausanne, Sept. 17, 1879). Viollet-le-Duc is remembered today as a restorer of Gothic buildings and as author of the *Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle* (10 vols., Paris, 1854–68), a work of cardinal importance in the history of Gothic studies, and of the lesser *Dictionnaire raisonné du mobilier français de l'époque carlovingienne à la Renaissance* (6 vols., Paris, 1858–75).

At sixteen Viollet-le-Duc entered the studio of the architect Jean Jacques Marie Huvé; from there he went on to study with Achille Leclère. After spending 17 months in Italy he returned to France determined to oppose what he considered the malefic influence of the Ecole des Beaux-Arts, and to this end he turned his attention to Gothic architecture. In December, 1839, Prosper Mérimée, secretary to the newly constituted Commission for Historical Monuments, appointed him to restore the Church of La Madeleine at Vézelay (XII, pl. 204). The following year, with Jean-Baptiste-Antoine Lassus (1807–57), he was made an inspector of the restoration of the Ste-Chapelle. In April, 1844, again with Mérimée's active support, Viollet-le-Duc and Lassus began restoration of Notre-Dame in Paris (VI, pl. 293). For the Commission and other bodies Viollet-le-Duc undertook a wide range of restorations. He did major work at Sens, Narbonne, Saint-Denis, Toulouse, Amiens, and Clermont-Ferrand; he rebuilt the fortifications at Carcassonne (pl. 130); and for Louis Napoleon he contrived the heavy-handed Gothic fantasia of Pierrefonds. His restorations have been judged heartless and unfeeling, but they are at least thorough. Moreover he did not consider himself an archaeologist. The great *Dictionnaires* in which his learning is embodied are not mere repositories of fact but works of propaganda for an architecture of the 19th century based on a scientific analysis of the Gothic style.

Viollet-le-Duc saw Gothic architecture primarily as a limited, functional art — as a solution to a problem in equilibrium. Every element, he believed, had a structural or functional purpose; even moldings and ornaments were not mere decorative adjuncts but were designed to emphasize structural features, feats of ingenuity, and extraordinary skill. Nothing, he insisted, was superfluous; nothing, least of all, was done for picturesque effect. His thesis was not novel: French architects from Philibert Delorme (ca. 1510–70) onward had analyzed Gothic structure, and in the 18th century Jean Louis de Cordemoy (1629–1713), his disciple Abbé Marc Antoine Laugier, and Jacques-Germain Soufflot and his circle had attempted to make a rational analysis of Gothic the basis of architectural reform; but Viollet-le-Duc's exposition was infinitely more thorough and determined. What he was ultimately striving to prove was that architecture is a precise, studied affair, whose every form and detail should be thought out in accord with a rational ideal.

In the most intriguing of his books, the *Entretiens sur l'architecture* (pub. in parts, I, Paris, 1862–63; II, Paris, 1868–72), he set out to show that his scientific analysis of Gothic was equally valid in assessing Greek, Roman, or Byzantine buildings, indeed all good buildings. He himself was not a creative architect. The houses and the handful of churches that he built are commonplace and eclectic, though St-Denis de l'Estrée (1864–67) is a tolerably robust example of the French Gothic revival (X, pls. 292, 293). Yet he did not flinch in the second volume of the *Entretiens* from indicating how the rational principles he had derived from his study of historical buildings might find application using the materials and serving the needs of the 19th century. His many designs for constructions in masonry and iron are unequal in quality, but some are as vigorous and memorable as anything done during the century (IV, pls. 195, 197). The result does not add up to architecture; but despite his failings as an architect, Viollet-le-Duc's theories have provided a solid foundation for much good architecture of the 20th century, and men as diverse as Antonio Gaudí, Auguste Perret, Frank Lloyd Wright, Le Corbusier, and Ludwig Mies van der Rohe (qq.v.) have been profoundly inspired by his doctrine.

Bibliog. Viollet-le-Duc, L'art Russe, Paris, 1877; Lettres inédites de Viollet-le-Duc, Paris, 1902; P. Gout, Viollet-le-Duc: Sa vie, son œuvre, sa doctrine, Paris, 1914; P. Trahard, Prosper Mérimée, Lettres à Viollet-le-Duc, 1839–1870, Paris, 1927; P. Abraham, Viollet-le-Duc et le rationalisme médiéval, Paris, 1934; J. Summerson, Viollet-le-Duc and the Rational Point of View, in Heavenly Mansions, London, 1949.

Robin Middleton

VISCHER. Nürnberg family of sculptors and casters in bronze active 1453–1556 and probably beyond. Hermann the Elder (d. 1488) founded the workshop in Nürnberg and acquired citizenship in 1453; he probably came from northern Germany, as the spelling Vischer (instead of Fischer) implies. His most important known work is a baptismal font in the Stadtkirche of Wittenberg (1456); in addition he cast numerous bronze-effigy tomb slabs of excellent technical but no more than me-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

diocre artistic quality, which were commissioned from nearby cities and also from faraway Poland.

Peter the Elder, the most outstanding member of the Vischer family, was born in Nürnberg about 1460 and died in 1529. In 1488 he completed a large (nearly 6 ft. high) pen-and-ink drawing on parchment (Vienna, Ak. der Bildenden K.), his first design for his best-known work, the shrine of St. Sebald (1508–19) in Nürnberg. The remains of this saint had been placed in a silver sarcophagus at the end of the 14th century; the sarcophagus was to be placed within an architectural framework of bronze, closed enough to protect the sarcophagus yet wide enough to leave it completely open to view. Twelve lofty piers with the statues of the Apostles aligned against them were to support three vaults, each crowned by a high turret, reaching a height of almost 57 ft. Work on the shrine seems to have been interrupted (1512–14), probably for lack of funds; but a few of the Apostles that had already been cast were used in the niches of the monument of Archbishop Ernest in the Cathedral of Magdeburg, commissioned in 1494. The effigy of the archbishop, in full relief, with sharply angular folds and hard, precise, extremely powerful features, is perhaps the best portrait in a period not poor in outstanding works of portraiture; the similarity of this style to late-15th-century achievements in Italy is striking. Similarly the figure of a kneeling man, the so-called "Bough Breaker" (*Der Astbrecher*, Munich, Bayerisches Nat. Mus.), with the incised date 1490, recalls the so-called "Paduan naturalism" of the young Andrea Briosco (known as Andrea Riccio, 1470?–1532; VII, PL. 336; XII, PL. 502), without any possibility of actual connection. The attribution of this statue to Adam Kraft by E. F. Bange (*Deutsche Kleinbronzen*, 1923) is unfounded. An awareness of contemporaneous Italian art appears only in the first decade of the 16th century in the small bronze group of Hercules and Antaeus (Munich, Bayerisches Nat. Mus.), but the treatment of these sturdy little figures lies between the Magdeburg work and the self-portrait on the shrine of St. Sebald. When in 1512 Emperor Maximilian commissioned for his tomb in Innsbruck two monumental bronze statues, Peter Vischer the Elder left the completion of the shrine to his sons Peter the Younger (1487–1528), and Hermann (1486–1517). The statues in Innsbruck represent King Arthur of Britain (VI, PL. 133) and Theodoric the Great. Though the Emperor's interest lay mainly in armorial bearings and the details of armor and accouterments, Peter the Elder has produced the only real statues among the many men-at-arms grouped around the Emperor's sarcophagus. The artist triumphed over an uncongenial task by creating great contrasts of volumes, mood, and lighting, and yet made the two statues part of a unified group.

Besides the self-portrait and the statuette of St. Sebald, Peter the Elder probably contributed to the shrine's six Apostles (Simon, Peter, Thaddeus, Paul, Andrew, and Matthew), with noble faces and draped in long robes which make a classical impression but which are really based on the idealizing Gothic of the second third of the 14th century: it is known that he had a collection of 300–400 wooden statues of that period. The other six Apostles seem to show some affinity with Venetian sculpture (Tullio and Antonio Lombardo), perhaps transmitted by Albrecht Dürer (q.v.), whose influence is strongly felt in other works by the same hand: the six reliefs on the base of the shrine with stories from the legend of St. Sebald and the overpowering wealth of Italianizing statuettes, putti, and *drôleries* strewn over the floor of the shrine. The same combination of Dürer, Italian influence, and strong Vischer tradition is found in the two inkwells with a standing female nude in the Ashmolean Museum, Oxford (the earlier one dated 1525), and in three plaquettes of Orpheus and Eurydice (Hamburg, Mus. f. K. und Gewerbe; VI, PL. 139; Berlin, Staat. Mus.; Washington, Nat. Gall.). A preliminary drawing in the Louvre bears the date 1519 and the monogram and sign of Peter Vischer the Younger. No doubt it is he who brought the shrine of St. Sebald to completion in 1519. The contribution of his older brother, Hermann the Younger, who studied the architecture of the Renaissance in Siena and Rome in 1515 (20 architectural sketches in the Louvre), was limited to modernizing the architecture of the shrine, mainly by transforming the tall turrets into elegant Renaissance domes.

Between 1513 and 1515 Hermann began work on the grille for the burial chapel of the Fugger family in the Church of St. Anna in Augsburg. This work was completed (1537–40) by the third brother, Hans (d. 1550). The grille was used in the City Hall of Nürnberg and was melted down in 1806; in 1921 four of its reliefs were discovered at Château Montrottier, near Annecy, France. The tomb effigies and memorial tablets of Hans are less personal, more coldly efficient than those of his father and brothers. Three statuettes have been attributed to him: *Eve* (New York, Frick Coll.); a youth (two casts, Vienna, Kunsthist. Mus., and Munich, Bayerisches Nat. Mus.); and the Apollo Fountain (*Die Apollobrunnen*), from the City Hall of Nürnberg (two variants, Vienna, Kunsthist. Mus., and Munich, Bayerisches Nat. Mus.). All three attributions have been challenged with good arguments; the Apollo Fountain is now given, with unconvincing reasons, to Peter Flötner.

Although Peter the Younger introduced into Nürnberg the graceful bronze statuette that has no parallel elsewhere outside Italy, the leading genius of the shop is Peter the Elder. It is still an unsolved problem whether for the last 16 years of his life (after the completion of the Innsbruck statues in 1513) he surrendered all artistic activity to his sons, who were filled with the ideas of a new time.

BIBLIOG. G. W. K. Lochner, Des Johann Neudorfer Nachrichten von Künstlern und Werkleuten, Vienna, 1875; T. Hampe, Nürnberger Ratsverlässe über Kunst und Künstler, Vienna, Leipzig, 1904, I, nos. 363, 714, 878, 902, 977, 1005, 1017, 1167, 1267, 1315, 1403, 1563, 1661, 1752, 1758, 1762, 1833; A. Mayer, Die Genreplastik an Peter Vischer's Lebaldusgrab, Leipzig, 1911; A. Mayer, Münchner Jhb. der Bildenden K., VIII, 1913; A. Mayer, Rep. f. Kw., XXXVII, 1915; H. Stierling, Kleine Beiträge zu Peter Vischer I–X, Mnh. f. Kw., VIII–XV, 1915–22; E. F. Bange, Bildwerke des Deutschen Museum, Bildwerke in Bronze, Berlin, Leipzig, 1923; E. F. Bange, Deutsche Kleinbronzen der Renaissance, Berlin, n. d. [1923]; A. Feulner, Peter Vischer's Sebaldusgrab in Nürnberg, Munich, 1924; S. Meller, Peter Vischer der Altere und seine Werkstatt, Leipzig, 1925; A. Feulner, Die deutsche Plastik des 16. Jahrhunderts, Leipzig, 1926; R. Berliner, Peter Vischer's Herkules und Antäus, Münchner Jhb. f. Bildende K., 1926–27; M. Sauerland, Die Kleinplastik der deutschen Renaissance, Leipzig, 1927; S. Meller, Die Bronzestatuetten der deutschen Renaissance, Leipzig, 1928; W. Pinder, Die deutsche Kunst der Dürerzeit, Leipzig, 1940, pp. 241–45; N. Pevsner, A Bronze Statuette by Peter Vischer the Elder, BM, LXXX, 1942, p. 90.

Martin WEINBERGER

VISION, THEORIES OF. See OPTICAL CONCEPTS; PERSPECTIVE.

VITALE DA BOLOGNA (known also as Vitale d'Aimo de' Cavalli). Italian painter, also documented as a wood sculptor, probably born about 1309. The first reliable information about Vitale ("Vitale di Aymo degli Equi") dates from 1330, when he painted the Odofredi Chapel in S. Francesco in Bologna. Other information is available from 1333 and 1334, when, still in Bologna, Vitale appeared as a witness. With good reason Brandi (1935–36) assigns a *Last Supper* executed for a lower room of the Monastery of S. Francesco (Bologna, Pinacoteca) to about 1340. It is moreover known that in 1340 Vitale painted the Chapel of S. Lorenzo and the guesthouse of S. Francesco. His contract for the execution of four wooden statues, now missing, for a church in Ferrara (perhaps the Cathedral) is dated 1343. The so-called *Madonna dei Denti* (Bologna, Gall. Davia Bargellini) is dated 1345; it forms part of an ensemble almost all of which has recently been recovered. In 1348 Vitale was in Udine, where the Fraternità dei Fabbri commissioned him to paint the chapel of its patron, S. Nicolò, in the Cathedral. After 1349 he executed the frescoes in the Church of S. Maria dei Servi in Bologna. The date 1351 is clearly visible in the frescoes of the apse of S. Maria in Pomposa, which are attributed to him for stylistic reasons. A document of 1353 refers to a work for the Church of S. Salvatore in Bologna, identifiable on good grounds with a polyptych there. The last Bolognese documents having to do with him are of 1357 and 1359. In 1361 he was already dead.

His first known work, *The Last Supper* for S. Francesco

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

(PL. 373), portrays SS. Catherine and Louis at the left and SS. Francis and Raphael on the right and demonstrates Vitale's ability to impart considerable liveliness to the gestures and expressions of his figures. He is not at all bound to Giottesque forms and proportions: a play of masses expressed by a restless "Gothic" line and supported by a dense impasto completely removes this work from the ranks of composed and solemn Giottesque volumes. It has been suggested that the work betrays a Sienese influence, but in this case the influence of the circle of Giovanni Pisano (q.v.) must also be considered, even though the resulting synthesis in Vitale's work is completely different; unquestionably these are the two most important components in the formation of a style for which no plausible precedents have so far been found in Bolognese art. The feminine type dear to Vitale appears in the St. Catherine, whose wide jaw and slender chin and restless yet reticent pose reappear in the panel known as the *Madonna dei Denti* (PL. 374), where they are even more pronounced. The heraldic motif of rampant griffins on the mantle of the Virgin, the animation of limbs and bust, the fluttering hemlines, and the vertical strokes of the outlines of the garments (an especially typical feature of Vitale's painting) contribute to a style that is more Gothic and, consequently, less plastic than that of *The Last Supper*. The two panels that accompany the *Madonna dei Denti*, one of St. Peter blessing and the other of SS. Anthony Abbot and James, demonstrate the same stylistic formulations in equally coherent terms: the softly undulating bodies, the gently encompassing mantles, the bowed heads, the eyes of St. James and the angels suffused with sweetness. Two female saints, now in Vienna (Lanckoronski Coll.), belong in the same ensemble. Extremely close to the *Madonna dei Denti* is the *Madonna and Child* in the J. B. Gold Collection in Richmond (Surrey), England. It is possible that the so-called *Madonna dei Battuti* (Vat. Mus.), which is signed but has perhaps been marred by restoration, can be placed in the preceding years. The frescoes of the life of St. Nicholas (PL. 373) that decorate the chapel dedicated to him in the Cathedral of Udine can no doubt be related to a document that explicitly mentions a painter named "Vitalis." A Giottesque quality has been mentioned in connection with these frescoes; undoubtedly the action is shown with a composed monumentality that is completely lacking in *The Last Supper*, yet Vitale is still the same artist who painted the *Madonna dei Denti* triptych of three years earlier. The half figures of the angels in the tondo above the saints of the Bologna triptych repeat the movement of the figure of Christ set above the funeral scene in the Chapel of S. Nicolò, and the heads, with their slender chins and mild eyes, are exactly alike.

The fresco in the apse of S. Maria in Pomposa (1351) comprises a Theophany in the semidome with a group of female saints on the left and a damaged group of male saints on the right, while below are depicted Doctors of the Church, Evangelists, and episodes from the life of St. Eustace. While the hieratic Christ in Majesty and the gentle female saints fall more or less into the same stylistic category as Vitale's earlier work, a new impetus, at times utilizing violent movement in unusually daring compositions like the Baptism scene, gives the stories of St. Eustace a distinctly different figural sense. The polyptych of 1353 in the Church of S. Salvatore in Bologna (PL. 376) continues, however, the serene, elegant spirit of the previous incontestable works, even in scenes where action would have been justified, such as the Nativity and the martyrdom of St. Catherine. Close to this polyptych are two paintings of the Virgin, one in Milan (Mus. Poldi Pezzoli) and the other in Viterbo (Mus. Civico). A Crucifixion in Philadelphia (Mus. of Art, Johnson Coll.) and one in Lugano (Thyssen-Bornemisza Coll.) are also close to Vitale's style.

The lively expressionism of the frescoes in the Church of S. Maria dei Servi in Bologna, perhaps painted about 1355, is characterized by a delicacy and elegance of form that places them near the fragment of a Resurrection scene from S. Francesco that is now in the Pinacoteca in Bologna and the *Madonna and Child* in S. Michele dei Leprosetti in Bologna. The stupendous *St. George and the Dragon* (PL. 375), also in the Pinacoteca, may have been painted immediately afterward.

A group of important works that critics have attributed to Vitale should also be considered here. Chief among these is the Nativity fresco formerly in the Church of S. Apollonia in Mezzaratta (PL. 376) and now, with the other frescoes of the same ensemble (some of which are also attributed to Vitale), in the Pinacoteca of Bologna. This Nativity, the product of an obviously lively personality, may be dated after 1350 because of the similarity of its painted frame to the frames of paintings by Jacopino de' Bavosi and Simone dei Crocifissi, both of whom were born after Vitale and were active sometime later than 1355. Jacopino's work bears witness, moreover, that this expressionistic tendency was characteristic of Bolognese painting of about 1365. In the Mezzaratta Nativity fresco the scene has been articulated within a constricted, forced perspective scheme that gives the groups extraordinary vivacity: violent contortions agitate the figures and give them an expressionistic impetuosity. Now if, as seems likely, the Mezzaratta cycle is posterior to 1361, after Vitale's death, this confirms the hypothesis set forth by Toesca that the panel of the Nativity (like the panels depicting the life of St. Anthony Abbot (VI, PL. 352) was painted after that date by a follower of Vitale. This follower also clearly collaborated with Vitale on the St. Eustace frescoes in S. Maria in Pomposa and perhaps on the *Adoration of the Magi* (Edinburgh, Nat. Gall. of Scotland), a companion piece to a Pietà now in Florence (Longhi Coll.). This hypothesis is supported by a comparison of the Nativity in the polyptych of S. Salvatore with the Nativity of Mezzaratta: it is impossible not to be struck by the radical difference between the two representations.

Other works executed by Vitale's circle include a Trinity in the Church of S. Maria dei Servi in Bologna, a fragment of a Crucifixion in the Church of S. Martino in Bologna, and a Coronation of the Virgin in the Pinacoteca of Bologna, which is perhaps an early work of Jacopino de' Bavosi. The *St. Ambrose* in the Museo Civico of Pesaro is reminiscent of Simone dei Crocifissi.

BIBLIOG. G. A. Bumaldo, Minervalia Bononensia, Bologna, 1641, p. 238; C. C. Malvasia, Felsina pittrice, Bologna, I, 1678, pp. 26 ff.; F. Baldinucci, Delle notizie de' professori del disegno . . . , Florence, 1681–1728, I, p. 202, II, p. 35; C. C. Malvasia, Le pitture di Bologna . . . , Bologna, 1686; L. Lanzi, Storia pittorica dell'Italia, Bassano, 1789; J. B. Seroux d'Agincourt, L'Histoire de l'art par ses monuments, Paris, 1810–23, III, Peinture, p. 138; VI, pl. 127; P. Zani, Enciclopedia metodica . . . , Parma, 1819–22, IV, Part 1, pp. 134, 289; G. Bianconi, Guida del forestiere per la città di Bologna . . . , Bologna, 1835, pp. 112, 165; A. Bolognini Amorini, Vite dei pittori e artefici . . . bolognesi, Bologna, I, 1843, pp. 10 ff.; G. Baruffaldi, Vite dei pittori e scultori ferraresi, Ferrara, I, 1846, p. 306; G. Rosini, Storia della pittura italiana . . . , Pisa, I, 1848, pp. 181–82; C. Ricci, La pittura romanica dell'Emilia e gli affreschi dulle arche di S. Giacomo in Bologna, Atti DeSPa, Romagna, 3d ser., IV, 1885–86, pp. 35–66; A. Rubbiani, Della chiesa di S. Francesco in Bologna, con atlante di nove tavole, Bologna, 1886, p. 77; V. Joppi, Contributo quarto ed ultimo alla storia dell'arte nel Friuli, Venice, 1894; p. 7; A. Brach, Giottos Schule in der Romagna, Strassburg, 1902, pp. 103–07, pl. 11; J. A. Crowe and G. B. Cavalcaselle, A History of Painting in Italy . . . , (2d ed.), London, 1903–14, III, 191–95; T. Gerevich, Sull'origine del Rinascimento pittorico in Bologna, Rass. d'arte, VI, 1906, pp. 161–67, 177–80, VII, 1907, pp. 177–84; E. Orioli. Consulti legali di Guido Guincelli, Atti DeSPa, Romagna, 3d ser., XXV, 1906–07, p. 184; Venturi, V, 1907, pp.942–43; R. Baldani, La pittura a Bologna nel secolo XIV, Atti DeSPa, III, 1909, pp. 375–484; L. Frati, Un polittico di Vitale da Bologna, Rass. d'arte, IX, 1909, pp. 171–72; T. Gerevich, Le relazioni tra la pittura e la miniatura bolognese del '300, Rass. d'arte, IX, 1909, pp. 196–99, X, 1910, pp. 29–31, 46–48; L. Frati, Un'opera ignota di Vitale da Bologna, BArte, VI, L'Arte, XIV, 1911, pp. 442–44; F. Filippini, Vitale da Bologna, BArte, VI, 1912, pp. 13–32; F. Filipppini, Gli affreschi della cappella Bolognini in S. Petronio, BArte, X, 1916, pp. 193–214; F. Filippini, Bartolomeo di Bartoli da Bologna . . . , Atti DeSPa, Romagna, 4th ser., VII, 1916–17, pp. 249–70; R. Van Marle, The Development of the Italian Schools of Painting, The Hague, IV, 1924, pp. 394–481; E. Mauceri, Punti oscuri della pittura bolognese; Vitale degli Equi, BArte, 2d ser., IX, 1929–30, pp. 554–62; E. Sandberg Vavalà, Vitale delle Madonne e Simone dei Crocifissi, BArte, XI, 1929, pp. 449–80, XII, 1930, pp. 1–36; L. Coletti, Sull'origine e sulla diffusione della scuola pittorica romagnola nel Trecento, Dedalo, XI, 1930–31, pp. 197–217, 219–312; W. E. Suida, Die italienischen Bilder der Sammlung Schloss Rononcz, Belvedere, July–Dec., 1930, pp. 175–80; F. Filippini, Per la storia dell'antica pittura bolognese, Il Comune di Bologna, XVIII, 6, 1931, pp. 3–17; M. Salmi, Per la storia della pittura a Pistoia e a Pisa, BArte, XIII, 1931, pp. 451–76; L. Coletti, Il "Maestro dei padiglioni," Miscellanea Supino, Florence, 1933, pp. 211–28; R. Longhi, Vitale da Bologna e i suoi affreschi nel Camposanto di Pisa, Mitt. der Kunsthist. Inst. in Florenz, IV, 1933, pp. 135–37; C. Brandi, Nuovi affreschi bolognesi del Trecento nella Pinacoteca di Bologna, BArte, 3d ser., XXVIII, 1934–35, pp. 364–76; C. Brandi, Un "Cenacolo" di Vitale scoperto nel convento di S. Francesco a Bologna,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

BArte, 3d ser., XXIX, 1935–36, pp. 448–57; R. Longhi, Momenti della pittura bolognese, Archiginnasio, XXX, 1935, pp. 111–35; M. Salmi, L'abbazia di Pomposa, Rome, 1936; L. Becherucci, Il "Cenacolo" di Vitale nella chiesa di S. Francesco, Bologna, R. mensile del Comune, XV, Jan., 1937, pp. 29–34; C. Brandi, Vitale da Bologna, CrArte, II, 1937, pp. 145–52; F. Filippini, Un ignoto pittore pisano del '300 a Bologna — Gaetano Tomei da Pisa, RArte, XIX, 1937, pp. 175–80; A. Venturi, I due sportelli del trittico di Vitale delle Madonne già in Sant'Apollonia a Bologna, L'Arte, XL, 1937, pp. 200–09; A. Graziani, Sui margini di una guida imolese, CrArte, IV–V, Part 2, 1939–40, pp. 135–40; G. Zucchini, Due tavole di Vitale donate alla città di Bologna, Bologna, R. mensile del Comune, Feb.–March, 1939, pp. 17–22; B. C. Kreplin, ThB, XXXIV, 1940, pp. 425–26; L. Servolini, La pittura gotica romagnola, Forlì, 1944, pl. VIII; E. Carli, La mostra dei capolavori delle chiese di Bologna, Emporium, CIII, Apr., 1946, pp 163–75; L. Coletti, I primitivi, I padani, Novara, III, 1947, pp. 23–26; F. Filippini and A. Zucchini, Miniatori e pittori a Bologna, Firenze, Doc. dei secoli XIII e XIV, 1947; L. Servolini, A Madonna by Vitale da Bologna, BM, LXXXIX, 1947, p. 78; F. Arcangeli, Un Vitale e un Jacpo da Bologna, Proporzioni, 1948, pp. 63–74; N. Rasmo, Gli affreschi trecenteschi della cappella di S. Giovanni a Bolzano, Cult. Atesina, III, 3–4, 1949, pp. 85–102; A. Sorrentino, Il distacco degli affreschi di Vitale e scolari nell'ex oratorio di Mezzaratta in Bologna, BArte, 4th ser., XXXIV, 1949, pp. 265–69; G. Biavati, Il "Presepe" di Mezzaratta nell'opera di Vitale da Bologna, Emporium, XCI, May, 1950, pp. 221–26; L. Coletti, Sulla mostra della pittura bolognese del '300, con una coda polemica, Emporium, July, 1950, pp. 243–60; A. Foratti, EI, XXXV, 1950, p. 460; R. Longhi, Mostra della pittura bolognese del Trecento, Milan, 1950; R. Longhi, Mostra della pittura bolognese del Trecento, Paragone, V, May, 1950, p. 7; W. E. Suida, Some Bolognese Trecento Paintings in America, CrArte, 3d ser., IX, 1950, pp. 52–58; Toesca, Tr, pp. 734–42; M. Salmi, La pittura e la miniatura gotiche, Storia di Milano, Milan, VI, 1955, p. 794; E. Arslan, Catalogo delle cose d'arte e di antichità d'Italia (Vicenza, I, Le Chiese), Rome, 1956, p. 193; A. Rizzi, L'opera di Vitale da Bologna ed altri affreschi nel duomo di Udine, Mostra di Crocifissi e di Pietà Medioevale del Friuli, Udine, 1958, pp. 105–20; C. Gnudi, Il S. Giorgio di Vitale acquistato per la Pinacoteca di Bologna, Misc. in onore di Mario Salmi, II, 1961–63, pp. 113–18; C. Gnudi, Gli affreschi di Vitale nella chiesa dei Servi in Bologna, Arte ant. e mod., S. dedicati a Roberto Longhi, 13–16, 1961, pp. 67–68; R. Niccoli, Nuove osservazioni sulle vicende costruttive, della chiesa di S. Maria dei Servi in Bologna, Arte ant. e mod., S. dedicati a Roberto Longhi, 13–16, 1961, pp. 79–96; C. Gnudi, Vitale da Bologna, Bologna, 1962; A. Rizzi, Nuovi affreschi di Vitale a Udine, Arte ant. e mod. S. dedicati a Roberto Longhi, 19, 1962, pp. 261–66.

Edoardo ARSLAN

Illustrations: PLS. 373–376.

VITRUVIUS. Roman architect and engineer of the 1st century B.C., known mainly as the author of *De architectura*, a theoretical treatise in ten books. It is generally accepted that his surname was Pollio, though another person with that name may be meant in Faventinus's text. All that is known of Vitruvius's origins and life has been gleaned from the scant biographical information contained in the prefaces of his ten books. Even the date of his work has often been disputed, but its publication must no doubt be placed between 27 and 23 B.C., when, according to his own testimony, he was an old man. In his dedication to Augustus, Vitruvius points out that he was a friend of Caesar, who died in 43. He was therefore a contemporary of Varro and Cicero. The studies of Sontheimer (1908) and others invalidate those theories which hold the treatise to be an apocryphal work of the 3d century of our era that has been erroneously attributed to an architect whose name has been preserved by mere accident. In fact, the contemporary state of Roman architecture reflected in the treatise leaves no doubt as to the date of its composition.

In Book I the author first deals successively with the training of architects, with the definition of an esthetic based on rhythm and numbers, with the making of a project, including drawings of the plan (*ichnographia*), the elevation (*orthographia*), and the perspective (*scaenographia*); and then, in several chapters, he postulates fundamental principles, such as the relationship of the structure of the edifice to its function and of the orders used in the temples to the nature of the divinities to whom they are erected, and, lastly, frames the standards to which the architect must adhere in the choice of site and plan on which to build a new town (see PL. 133) and in the distribution and exposition of its buildings. Book II discusses more technical matters, such as the characteristics and uses of various materials (brick, sand, lime, pozzuolana, stone, masonry, and timber and the properties of the different species). Books III and IV set forth in logical sequence all the prescriptions relating to the construction of temples and the architectural orders: the Ionic, the Corinthian, and the Doric (see STRUCTURAL TYPES AND METHODS). His treatment of the members — column, capital, entablature — shows a scrupulous respect for rigorously defined proportions: "Proportion consists in taking a fixed module, in each case, both for the parts of a building and for the whole" (III, i, 1). The Corinthian order, which was to become an important feature of Roman construction after the 1st century B.C., is given scant treatment.

Book V is devoted to secular public constructions: the forum and basilica; the treasury, prison, and Curia; the theater and its annexes; the palaestra; baths; and harbors and shipyards. The discussion is interrupted by a digression on harmony, prompted by the study of problems relating to acoustics in the theater. In Book VI, devoted to domestic buildings, Vitruvius makes a clear distinction between the traditional Roman and Greek types. He examines in detail the problems of site and exposition both for the house as a whole and for its various parts.

In Book VII, after discussing plans, interior arrangements, and diverse types of courtyards, atriums, and peristyles, the author turns to the problem of construction, especially the techniques of paving and of preparing stucco facing, with an important insertion on the styles and technique of wall painting.

The contents of the last three books, VIII through X, now lie within the province of the engineer, since they deal with water, with the measurement of time (including digressions on astronomy, the constellations, and sun dials and water clocks), and with building and siege machines.

In the first chapter of Book I Vitruvius draws an ideal portrait of the architect, whose "personal service consists in craftsmanship and technology." He must be highly cultured, well read and learned in the various arts and sciences: drawing, geometry, optics, arithmetic, physics, history, music, and medicine. The author concludes that "only these persons can forthwith justly claim to be architects who from boyhood have mounted by the steps of these studies and, being trained generally in the knowledge of arts and sciences, have reached the temple of architecture at the top" (I, i, 11). To support this point of view Vitruvius quotes a passage from Pytheos, the Greek architect of the 4th century B.C., who is said to have written in his commentary on the Temple of Athena at Priene that "an architect ought to be able to do more in all arts and sciences than those who, by their industry and experience, have advanced individual arts to the highest renown." Certain scholars, such as E. Stürzenacker (1938, 1939), have thought that Vitruvius was describing himself in his definition of the architect and have accordingly sought to establish him as an all-round genius of the same capacity as Leonardo da Vinci (cf. XI, PL. 344). However, neither the style nor the content of the treatise justifies this farfetched inference. Other writers, on the contrary, have been unfavorably impressed by Vitruvius's lapses into slipshod style, by his frequent use of common expressions, and by his sometimes primitive and even childish mind (Winckelmann). But this critical position goes to the opposite extreme, since the tone and style of his preface show the author to be a man of solid culture who knows Greek and has profited from his wide reading. According to Pernice (ThB), whose opinion seems well founded and undoubtedly closer to the truth, Vitruvius was born in humble circumstances but raised himself above his background through his work and pursuit of culture. In his treatise he expresses pride in this achievement.

Vitruvius acted as architect at Fanum (mod. Fano), in the Marches, where he had been called to build the basilica. In the precise description of this work in the first chapter of Book V the author enumerates the principal elements of the simple, well-proportioned plan. The basilica consisted of a rectangular hall, whose width was half its length, with a colonnade that ran along all four sides and enclosed the nave, which was three times the breadth of the aisles that served as a passageway between the outside walls and the columns. On the long side facing the forum there was a rectangular niche, in which was inscribed a semicircular exedra for the sittings of the tribunal. An original particular of the plan was

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the absence of an upper gallery, so that the columns rose without interruption to the roof. Although no trace of this structure has been found, it may be compared to the basilica of Pompeii and to that of Ardea, near Rome, studied by A. Boëthius (in *Roma*, XII, 1934, p. 303 ff., and in *Apophoreta Gotoburgensia Vilelmo Lundström Oblata*, Göteborg, 1936, p. 353 ff.).

In reference to the basilica of Fanum, Sachur (1925, p. 144 ff.) points out the problem arising from the Roman tendency to use circular forms (i.e., the semicircular exedra) with rectilinear plans. Vitruvius solves this difficulty by excluding two columns before the exedra, thus breaking the rhythm of the internal colonnade. His personal solution is representative of the attempts made by Roman architects of the 2d and 1st centuries B.C. to reconcile Hellenistic traditions with the search for axiality.

Vitruvius must also have been an engineer of some brilliance, as a record of his work has been preserved in the traditional literature. In the preface of Book I he recalls the works confided to him under Augustus. Together with M. Aurelius, P. Minidius, and C. Cornelius, he was entrusted with the construction of *ballistae* and the renovation of "scorpions" and other war machines, for which he was granted certain advantages, most likely including a pension. The discussion of machines and instruments in Book X draws on this experience. Thus Vitruvius became the first in a line of authors who left writings on the same subject — among them, Apollodoros of Damascus (q.v.), whose *Poliorketica* is a commentary on a group of designs sent to the emperor Hadrian, and Athenaios Mechanicos, whose 2d-century Greek text, *Peri mechanematon*, closely follows that of Vitruvius. C. Wescher (*Poliorcétique des Grecs*, Paris, 1867) and R. Schneider (*Abh. der Königlichen Gesellschaft der Wissenschaften*, Göttingen, XII, 5, 1912, pp. 1–79) agree that Vitruvius and Athenios used the same source. Though Vitruvius probably resorted to earlier treatises, he added observations from his personal experience. For this reason Book X came to occupy an extremely important place in this field of literature and remained influential until the end of the Middle Ages.

Frontinus reports in his *De aquaeductu urbis Romae* that Vitruvius was appointed engineer for the public water system of the city of Rome. Book VIII, on water, derives from this experience, though it echoes in part philosophical theories and geographical and literary traditions. Nevertheless, the chapter on the various types of conduits and their respective advantages and disadvantages and on the digging of wells and cisterns shows a precise knowledge of techniques, which Vitruvius must have acquired through practical experience.

The problem of Vitruvius's sources continues to be debated and remains unresolved. On the surface the problem appears simple, for in the preface of Book VII the author has taken care to advise the reader of his use of ancient sources, especially Greek ones, and he enumerates a series of treatises written for the most part by famous architects as commentaries on buildings constructed by themselves. The list of treatises ranges chronologically from the 5th century (Theodoros of Samos, Chersiphron and Metagenes of Ephesus) to the 2d century B.C. (Hermogenes), including the commentaries of Iktinos (q.v.) and Pytheos, for example, as well as a number of specialized works on symmetry, proportion, and machines. He names only three Roman writers: Fufidius, Varro, and Publius Septimius. Since almost nothing of the works cited by Vitruvius has been preserved, the question of how much of the treatise should be attributed to its author and how much to his sources remains largely hypothetical. Only close examination of the text and concrete comparisons based on present knowledge of ancient architecture, both Greek and Roman, can lead to reliable results; the supposition that Hermogenes or any other single author constitutes the basic or only source is futile, as several studies based on this premise have demonstrated (Choisy, 1909; Birnbaum, 1914; Schlikker, 1940). The various sources from which Vitruvius drew can be distinguished only through fine comparisons (Boëthius, 1939). The complexity of the problem becomes apparent in a few selected examples; Vitruvius's method is clearly indicated in Book III, on the Ionic order, which Choisy and other commentators believe to be based principally on the treatise of Hermogenes. After the excavation of edifices built by Hermogenes, the Temple of Artemis Leukophryene in Magnesia ad Maeandrum (VII, FIG. 294) and the Temple of Dionysos in Teos, there have been attempts to establish parallels between the architectural characteristics of these constructions and the prescriptions of Vitruvius. After certain differences were discerned, investigations were pursued elsewhere, and in each Ionic edifice investigated, scholars thought they recognized the Vitruvian model. Actually, the architrave described by Vitruvius in the fifth chapter of Book III does not correspond to the form used by Hermogenes or to that used in Hellenistic architecture, for the Vitruvian type consists of one element less and thus has smaller proportions. Birnbaum suggested (1914) that Vitruvius did not take as his model the edifices built by Hermogenes, but simply followed the architect's treatise, which might have been a polemic rather than an exact commentary on his works; however, this hypothesis cannot be proved. Carpenter (1926) introduces several additional subtleties, proposing that Vitruvius might have obtained his general proportions for the Ionic order from Pytheos's treatise on the Mausoleum of Halicarnassus and the Temple of Athena at Priene, both of which were built in the 4th century B.C.; that the structure and the proportions of the capital could have been borrowed from the architectural traditions of the late Hellenistic period in Asia Minor; and that the classification of temple plans might be derived from a Hellenistic author of secondary importance. Schlikker (1940), in his development of this thesis, rejects any influence of Hermogenes on the work of Vitruvius. Furthermore, the structure and the proportions of the architrave described by Vitruvius correspond much more directly to those of Roman buildings of the Sullan period (138–78 B.C.), such as the Sanctuary of Fortuna Primigenia in Palestrina.

The same hesitancies have arisen in connection with the possible models for Vitruvius's description of the Doric order. For Choisy (1909) the Doric capital presented in the treatise has a pronounced Roman character. But Vitruvius particularly emphasizes the cymatium surmounting the abacus, a feature peculiar to the Doric order in Asia Minor, where it appears as early as the 4th century B.C. and is to be found in all known constructions of the 3d and 2d centuries. Since Hermogenes was hostile to the Doric order, which he found too severe, Vitruvius's treatment must have been based instead on the work of an unidentified contemporary of Hermogenes.

Examination of the chapters on the house in Book VI clearly shows that Vitruvius combines data from theoretical treatises with personal observations. It is to him that we are indebted for the precise definition of the different types of atrium that excavations have brought to light. Regarding the Greek house, universal recognition has been accorded to the importance of his information on the Rhodian peristyle, which has a higher colonnade on the south than on the other three sides; this peculiarity, which has been noted in several houses at Delos, would otherwise have remained unexplained. It is certain that his ideas relating to the site and exposition of the house, which he develops in the first chapter of Book VI, derive from the Hellenic tradition, to which, in this field, Vitruvius closely adheres. These principles, first applied in the cities of the 4th and 3d centuries, were taken from the Hippocratic texts and were subsequently systemized by Aristotle (*Œconomics*, I, 6, 7) and expounded by Xenophon (*Memorabilia*, III, 8, 8). Vitruvius's detailed observations on the structure of the peristyle and the distribution of the living quarters around the courtyard have been confirmed by the excavations at Olynthos, Priene, and Delos (VII, FIGS. 304, 305). He not only discusses the *oikos* and megaron types of dwelling, but he also presents a far more complex type of house, which has not been found at the sites mentioned above, although it is known to have existed in the highly Romanized Hellenistic cities. This is a kind of palace with a succession of peristyles and with gynaeceum, andron, reception halls, and guests' quarters. He makes no mention, however, of the large, multistoried tenement buildings of the late Hellenistic period, which were common in

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Alexandria and in the Syrian cities, especially Antioch. Vitruvius's method thus becomes apparent in this example; for his discussion of the Greek house is clearly founded on literary sources, and to this material he has added personal observations but without doing so systematically. His information on the Roman house is much more exact and corresponds more closely to reality. In this connection, Maiuri's study of the Egyptian oecus (1951) demonstrates that Vitruvius's observations in the third chapter of Book VI were based on precise models.

Regarding the theater, which Vitruvius discusses in Book V, it has long been recognized that his indications correspond perfectly to the archaeological discoveries. But his description of the Greek theater has aroused much discussion, especially the vigorously disputed passage on the *logeion*, the platform between the orchestra level and the walls of the stage from which the actors spoke (cf. XII, FIG. 749). W. Dörpfeld, the major supporter of this theory, came to the conclusion that Vitruvius was referring to a theater inspired by a Hellenistic model that he had seen in Rome rather than to a specific Hellenistic theater in Asia Minor (AM, XXVIII, 1903, pp. 383, 411 ff.). Subsequent archaeological finds and, above all, the Theater of Priene (VII, FIG. 299), studied by A. von Gerkan (*Das Theater von Priene*, Munich, 1921), have proved beyond doubt the existence of the *logeion* in Hellenistic theaters (see SCENOGRAPHY).

In his exposition on the Italic temple, in the seventh chapter of Book IV, Vitruvius advises the adoption of the Tuscan temple, a type that appeared in the last century of the Republic, in which the traditional Italic was modified by the introduction of stone columns in accordance with Greek usage (see ETRUSCO-ITALIC ART). But the use of stone columns in conjunction with the traditional wooden superstructure created difficulties. Vitruvius shows a preference for wood, but he accepts the innovation of stone and attempts to solve the ensuing problems.

An important consideration for Vitruvius is the question of building materials (see ROMAN IMPERIAL ART). In Book II he expresses a preference for local stone over marble, which was then being widely used by the young generation of architects in the city of Rome. For this attitude he was regarded as old-fashioned and an enemy of progress; but he saw it as the duty of a good architect to make the solid and durable constructions at minimum cost. If he advises against marble it is because of its exorbitant price, due in part to the high cost of transport, and because it represents useless luxury, whereas local materials such as the tufa of Ferentum (near Viterbo) are of high quality. Therefore, Vitruvius's criticism seems to have been based solely on technical and economic considerations.

The variety of arguments dealt with in Vitruvius's *De architectura* explains its success and importance for posterity. It is the only truly technical treatise on architecture that has been handed down from antiquity. In spite of its gaps or uncertainties, it constitutes a sum of extremely valuable knowledge. For example, the fifth chapter of Book VII remains the fount of all that is known about the technique of wall painting at the end of antiquity; upon it A. Mau founded his celebrated classification of the Pompeian styles (*Geschichte der dekorativen Wandmalerei in Pompeij*, Berlin, 1882).

In Rome itself the importance of Vitruvius was soon recognized. His treatise was used by Pliny the Elder; in the time of Trajan (r. 98–117) Frontinus dedicated his treatise on aqueducts to Vitruvius, and about a century later Faventinus profitably drew on the treatise. Evidence from the 4th and 5th centuries shows no decrease in its influence. V. Rose and M. Müller-Strübing, who conducted a thorough study of the two extant series of manuscripts in the preparation of their 1867 edition of Vitruvius, ascertained that both descend from a single archetype (Br. Mus., Harley Ms. 2767), which dates to the time of Charlemagne and contains no illustrations. Sackur (1913) is even of the opinion that the ancient editions of Vitruvius contained none and that illustrated editions did not flourish until later.

De architectura was well known in the monasteries of the Middle Ages and even then was the sole literary source of knowledge of ancient architecture. It was only with the Renaissance (q.v.) that Vitruvius was really "rediscovered." Diligent study of his rules undoubtedly brought about a change of taste that coincided with the current aspirations to classical values of order and symmetry. However, it was Leon Battista Alberti (q.v.) who made the first purposeful reference to the Vitruvian text. Alberti's treatise *De re aedificatoria* is inspired by that classic text, and its influence is also obvious in his architectural works. Vitruvius's treatise also influenced other 15th-century scholars and architects, such as Francesco di Giorgio and Antonio Filarete (qq.v.), Luca Pacioli (whose *De divina proportione* popularized the principles of Piero della Francesca), Francesco Colonna, Roberto Valturius, and Taccola. In the 16th century architects and classical scholars undertook a detailed and systematic study of *De architectura*. None of the great 16th-century architects escaped the fascination of the almost mythical figure of the Roman architect, whose rules were interpreted by each in his own way, both in buildings and in treatises (see ARCHITECTURE). From the Vitruvian norms arose that aspiration to grandeur combined with supreme equilibrium which characterized the works of artists such as Bramante, Peruzzi, Raphael, Sanmicheli, Scamozzi (qq.v.), and G. B. Bertani. Palladio, Serlio, and Vignola (qq.v.) gave a theoretical interpretation of these norms in their respective writings (see TREATISES); and, significantly, new editions of Vitruvius's text appeared simultaneously with these new works.

From the Renaissance onward, numerous editions of Vitruvius's work have been published in many languages. The *Editio princeps* was published by J. Sulpicius da Veroli in about 1486. Before the end of that century two more editions appeared, one in Florence in 1496 and another in Venice in 1497. Among the editions of the 16th century that of the architect Fra Giocondo was highly successful; published in Venice in 1511, it was reissued in 1513, 1522, and 1525. At this time there began to appear editions with comments and illustrations. The first of these was Cesare Cesariano's edition of 1521 (see I, PL. 308; IV, PL. 198; XI, PLS. 342, 343), which was followed by Giovan Battista Caporali's of 1536 (see I, PL. 376) and Daniele Barbaro's of 1556, which was reissued in 1567, 1584, and 1629 (PLS. 377–384 accompanying this article and IV, PL. 195, are from Barbaro, 1567).

With the discovery of ancient documents, the commentaries on Vitruvius's treatise have become more definitive and the characteristics of ancient architecture have emerged with greater clarity. Interest in *De architectura* has not declined with the advancement of archaeological exploration. Although the limits of its scope and value have been ascertained, it remains a work of fundamental importance.

SOURCES: Vitruvius, De architectura, X libri, Editio princeps, J. Sulpicius da Veroli, ca. 1486 (other eds., V. Rose and M. Müller-Strübing, Leipzig, 1867; A. Choisy, Paris, 1909; F. Krohn, Leipzig, 1913; H. Morgan, Cambridge, Mass., 1914; F. Granger, 2 vols., London, 1955–56); Pliny the Elder, Naturalis historia, XVI, 35, 36, and XXXVI; Frontinus, De aquaeductu urbis Romae, 25; M. Cetus Faventinus, Liber artis architectonicae, Leipzig, 1913.

BIBLIOG. L. Sontheimer, Vitruvius and seiner Zeit, Tübingen, 1908; F. Burger, Vitruvius und die Renaissance, RepfKw, XXXII, 1909, p. 199 f.; W. Sackur, Des Vitruvius Basilica in Fanum und die Neue Ausgabe der Decem Libri De Architectura, RepfKw, XXXVI, 1913, pp. 1–40; A. Birnbaum, Vitruvius und die griechische Architektur, Vienna, 1914; A. von Gerkan, Das Theater von Priene, Munich, 1921; W. Sackur, Vitruv und die Poliorketiker, Berlin, 1925; R. Carpenter, Vitruvius and the Ionic Order, AJA, XXX, 1926, p. 269 f.; E. Wistrand, Vitruviusstudien, Göteborg, 1933; R. di Luttichau, la basilica di Vitruvio in Fano e i suoi ruderi, Fano, 1934; M. Schanz and C. Hosius, Geschichte der römischen Literatur, HA, VIII, 2, 1935, p. 386 f.; E. Jüngst and P. Thielscher, Vitruvius über Baugrabe, Baugrund und Grundbau, RM, LI, 1936, p. 145 f.; A. M. G. Little, Scaenographia, AB, XVIII, 1936 p. 407 f.; G. M. A. Richter, Perspective Ancient, Mediaeval, and Renaissance, S. in honor of B. Nogara, Vatican City, 1937, pp. 381–88; E. Stürzenacker, M. Vitruvius Pollio über die Baukunst, Essen, 1938; A. Boëthius, Vitruvius and the Roman Architecture of His Age, *Δράγμα* M. P. Nillson, Leipzig, 1939, p. 114 f.; E. Stürzenacker, Vitruvius und die Baukunst der Gegenwart, Die Baugilde, XXI, 1939, p. 65 f.; F. W. Schlikker, Hellenistusche Vortsellungen von der Schönheit des Bauwerks nach der Baumeister Vitruvius, Berlin, 1940; E. Wistrand, Bemerkungen zu Vritruv und zur antiken Architekturgeschichte, Eranos, XL, 1942, p. 143 f.; A. Prandi, Note Vitruviane, RendPontAcc, XXI, 1945–46, p. 24 f.; G. Lugli, La terminologia dei sistemi costruttivi usati dai Romani, RendLinc, V, 1950, pp. 297–306; F. Pellati, La Basilica di Fano e la forma-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

zione del trattato di Vitruvio, RendPontAcc, XXIII–XXIV, 1947–48, pp. 153–74; G. Becatti, Arte e gusto negli scrittori latini, Florence, 1951, pp. 121–44; A. Maiuri, Oecus Aegyptius, Studies presented to D. M. Robinson, St. Louis, Mo., 1951, p. 423 f.; S. Ferri, Vitruvio, Rome, 1960; E. Pernice, ThB, s.v. Vitruvius.

Roland MARTIN

Illustrations: PLS. 377–384.

VIVARINI. Family of painters of Murano (an island in the Venetian lagoon), active from the first half of the 15th century to the beginning of the 16th century; includes Antonio, his brother Bartolomeo, and Alvise, the son of Antonio.

The most significant personality of the family was Antonio (also known as Antonio da Murano; b. Murano, ca. 1420; d. Venice, between 1476 and 1484), a sensitive and extremely individualistic artist, who represents the earliest Renaissance style to appear in Venetian painting. From his earliest works (the polyptych of 1441 in the Cathedral of Poreč, Yugoslavia) he established a personal and independent style, which does not, as Berenson suggests (1953), reveal the influence of Jacobello del Fiore. Even his early collaboration with Giovanni d'Alemagna did not affect the coherence of Antonio's style. This collaboration is documented for several works in which it is difficult to distinguish the assistant's hand, including the famous *Adoration of the Magi* in Berlin (Staat. Mus., Mus. in Dahlem), the three polyptychs in the Church of S. Zaccaria in Venice, and the *Coronation of the Virgin* in the Church of S. Pantalon in Venice, all of 1444. Antonio's works are in the rich and at times almost overdecorated style that followed in the wake of the International Gothic; they parallel the work of other artists of the same tradition, such as Gentile da Fabriano, Pisanello, and Sassetta. However, the probable passage of Masolino through Venice on his return from Hungary may have suggested new artistic possibilities to Antonio, such as his new way of placing his figures in perspective, his striving toward a rational and real space, and his use of luminous colors that give a sense of physical presence to his figures — all echoes of the artistic principles of the Renaissance in Florence during the first decades of the 15th century. Nevertheless, Antonio's interpretation of the Renaissance remained linked throughout his work to the Venetian tradition of painting, which is primarily a chromatic interpretation of reality. This tendency is seen in Antonio's mature works, on which Bartolomeo assisted him: in the polyptych of 1450 (Bologna, Pin. Naz.) Bartolomeo's participation is clearly apparent, but he soon after broke away from his elder brother. Antonio's numerous works, executed primarily for churches in Venice, Dalmatia, and Apulia, do not reveal any further stylistic development; he remained a delicate and sensitive interpreter of a style that marked an opening toward new horizons (polyptych in S. Eufemia at Rab, Dalmatia, 1458; polyptych in S. Maria della Colonna, Rutigliano, near Bari; polyptych of St. Anthony Abbot, Vat. Mus., 1464; polyptych in S. Maria Vetere, Andria, near Bari, 1467; etc.).

Bartolomeo Vivarini (b. Murano, ca. 1432; d. ca. 1491), after working initially with his brother, came under the influence of contemporaneous Paduan painting; his work, like that of the young Giovanni Bellini, reveals an awareness of the formal innovations introduced by Mantegna. Bartolomeo's style was formed by Antonio Vivarini's Gothic style directed toward Renaissance discoveries; subsequently the influence of Mantegna resulted in an increasing sharpness of form (VIII, PL. 197). However, Bartolomeo never achieved a real understanding of the Renaissance world or that interpretation of classical antiquity conceived by Mantegna; rather, he seems to aim at an often laborious balance between strongly accentuated linear drawing and the violent, often dissonant colors that, under Mantegna's influence, depart from the gentle fusion of tones to be found in the works of his brother. This is especially evident in the triptych of the Madonna with SS. Benedict and Scholastica (Taranto, Mus. Naz.); that of the Madonna enthroned with saints and angels (1465; Naples, Capodimonte); the triptych depicting the Madonna of Mercy, the birth of the Virgin, and the meeting of SS. Joachim and Anne (1473; Venice, S. Maria Formosa); the triptych of the Madonna with SS. Andrew and John the Baptist (1478; Venice, S. Giovanni in Bragora); and such late works as St. Roch with an angel and the Madonna (1480; Venice, S. Eufemia alla Giudecca); the polyptych of 1490 in Florence (Coll. Contini Bonacossi), and the triptych of St. Martin and the beggar with SS. Sebastian and John the Baptist (Bergamo, Acc. Carrara), in which the preponderant work of assistants is evident. Bartolomeo, like Antonio a prolific painter, was assisted by a large workshop and executed works in the Veneto, Dalmatia, and Apulia.

Alvise, the son of Antonio (b. Murano, ca. 1445; d. 1503 or 1505), was a pupil of his father but was more in sympathy with his uncle Bartolomeo's style, as can be seen in the Montefiorentino polyptych (1476; Urbino, Gall. Naz. delle Marche). His marked interest in the works of Giovanni Bellini is revealed especially in the *St. Jerome in the Desert* (Washington, D.C., Nat. Gall., Kress Coll.). Of fundamental importance for Alvise was his acquaintance with the art of Antonello da Messina, who had left in Venice one of his most important works, the S. Cassiano altarpiece of 1476 (I, PL. 318). In contact with Antonello's monumental style and Bellini's coloristic interpretation, Alvise became receptive to the new Renaissance concepts and undertook large altarpieces such as that depicting the Madonna and saints formerly in Berlin (destroyed 1945) and St. Ambrose enthroned, with other saints (XII, PL. 45). The altarpiece of the Madonna enthroned with six saints (1480; Venice, Acc.) is one of Alvise's most successful works; here he achieved a fusion of accentuated linearity with a sense of color and tone derived from Antonello, thus heralding the painting of Lorenzo Lotto, as Berenson (*Lorenzo Lotto*, London, 1901) has observed. This linearity becomes softened in his later works (*Madonna Enthroned with SS. John the Baptist, Jerome, Augustine, and Sebastian*, in Berlin, Staat. Mus., Mus. in Dahlem), and his affinity with the art of Giovanni Bellini becomes more apparent (XII, PL. 375). A few remarkable portraits by Alvise are known, among them those in New York (Brooklyn Mus.), Padua (Mus. Civ.), London (Nat. Gall.), and Philadelphia (Mus. of Art, Johnson Coll.).

BIBLIOG. R. Longhi, Viatico per cinque secoli di pittura veneziana, Florence, 1945; B. Berenson, Italian Pictures of the Renaissance, Oxford, 1953; L. Coletti, Pittura veneta del Quattrocento, Novara, 1953; R. Pallucchini, I Vivarini, Venice, n.d. [1962].

Marco CHIARINI

VORTICISM. See EUROPEAN MODERN MOVEMENTS.

VOUET, SIMON. French painter (b. Paris, 1590; d. Paris, 1649). He received his early training from his father, Laurent, an obscure painter during the reign of Henry IV. Simon's ability as a portraitist seems to have gained him a measure of fame early in his life and resulted in travels that took him from London to Constantinople.

In 1613, after a year in Venice, he settled in Rome, where, during the following 14 years, his early style matured and formed the basis of his later style, which he was to perfect throughout his lifetime. As early as his Italian period, Vouet enjoyed an easy success that is to some extent reflected in his works. He was pensioned by Louis XIII; esteemed by the amateur artist, Cassiano del Pozzo; and asked to paint portraits of Pope Urban VIII and Giambattista Marini, known as Il Cavaliere Marino. He was overwhelmed with commissions, surrounded by pupils, and was elected Principe of the Accademia di S. Luca (Baglione, 1642). He was summoned to work at Genoa and visited several towns, including Parma, on his return journey. His first wife was Virginia da Vezzo, whose seductive half-smile and unclassical face were reproduced in the nymphs of Fontainebleau and the goddesses of Versailles.

A first meeting of two opposed esthetic currents occurred when Poussin attended a gathering of painters held at Vouet's house in 1624. In the midst of the artistic ferment that existed in Italy at that time, Vouet laboriously and discerningly drew from the different currents that which best served his inspiration.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

His first-known works, such as the *Two Lovers* (Rome, Palazzo Pallavicini-Rospigliosi), clearly reveal Caravaggio's influence and resemble the genre paintings of the contemporary *tenebrosi*. While the paintings of his Italian period, and occasionally those of his mature years, are characterized by their chiaroscuro, at the same time they are closer to the decorative tendencies of Reni, Guercino, and Stanzione than to the tragic pathos of Caravaggio. This is evident in the *St. Bruno* (Naples, Certosa di S. Martino), the charming *Cupid and Psyche* (PL. 387), and even in such paintings as the *Birth of the Virgin* (PL. 387), the *Allegory of the Human Soul* (Rome, Capitoline Mus.), and the two scenes from the life of St. Francis (part of Vouet's first important cycle in the Church of S. Lorenzo in Lucina; II, PL. 208), in all of which dense shadows produce dramatic effects. Shortly before his departure from Rome, an incipient change in his style became apparent in the *Time Vanquished* (Prado), in which there is no strongly contrasted chiaroscuro. To the influence of Caravaggio may perhaps be attributed the plasticity — later less pronounced — of the beginning of Vouet's French period, evident in his drawings (Louvre) for the tapestry with scenes from the Old Testament, commissioned by Louis XIII in 1627. According to Dimier (1926–27), this year marked a turning point in the history of French art. Vouet was named chief court painter and had lodgings at the Louvre; the King himself wished to learn the art of pastel portraiture from him. Vouet established the supremacy of his new Italianate style in his work for the court, the aristocracy, and the Parisian churches. He executed frescoes and probably also tapestry cartoons. W. R. Crelly (1962) gives the following analysis of his stylistic evolution: "The strong contrasts of light and shadow and the richly varied color of the Italian and early French paintings are gradually replaced by planes of clear color set one beside another across the canvas, so that in some of the latest examples there results an effect of colored silhouettes." Regarding the artist's later works, Crelly remarks, "... it may not be wrong to see a special French character in Vouet's linear grace and decorative refinement, in spite of his strong dependence upon Italian traditions. Furthermore, as will be seen in studying the decorative works, it is possible to relate the meticulous delicacy of his late style directly to the sixteenth-century tradition of mannerism in France."

Although Vouet's religious paintings are the best preserved of his works, they are not the most characteristic of his art. His free technique imparted a spontaneous quality to the compositional schemes of the altarpieces of the Counter Reformation — schemes dictated by the Carraccis with their diagonals and their division of the composition into heavenly and earthly levels. The altarpiece of the *Assumption* (1629) in the Church of St-Nicolas-des-Champs in Paris is surrounded by stucco decorations by Vouet's pupil, Jacques Sarrazin. The painting of St. Merri still hangs in the Parisian church of the same name. After the destruction of the high altar of St-Eustache in Paris, the *Martyrdom of St. Eustace* was moved to a side aisle and the painting of the apotheosis of the saint was transferred to Nantes (Mus. B.A.). The *Presentation of Christ in the Temple* (II, PL. 211) and the *Apotheosis of St. Louis* (Rouen, Mus. B.A.) were removed from the Maison Professe (now the Church of SS. Paul et Louis), built during the apex of Vouet's French period (1627–40), in the decoration of which they represented the transalpine currents adopted in France. Other paintings that Vouet executed for churches are the *S. Carlo Borromeo* (Brussels, Mus. B.A.), in which the effigy of the 16th-century saint assumes the value of a portrait and in which there is a spareness of style generally foreign to Vouet and more in keeping with the austere tendencies of such contemporary painters as Philippe de Champaigne; the *Temptation of St. Anthony* (Grenoble, Mus. de Peinture et de Sculpture), which combines the taste of the period, a medieval theme, and a Renaissance spirit; the *Rest on the Flight into Egypt* (PL. 388), which takes up a subject treated by Correggio and Barocci, through the Bolognese tradition exemplified by Simone Cantarini; and the *Assumption* of 1644 (Reims, Mus. B.A.), which is somewhat stiff in its movement and subdued in its coloring.

Other religious paintings, which depart from these schemes, elude classification. Among these are his paintings of Mary Magdalene (PL. 385; another in Amiens, Mus. de Picardie) and the angels in the *St. Margaret*, which later appeared as cupids in the *Parnassus* at the Hôtel Séguier (both angels and cupids are known from engravings by Michel Dorigny). The same study must have served both for the figure of Mary Magdalene in the *Crucifixion* (Lyons, Mus. B.A.) and for the figure of one of the daughters of Lot in the painting in Strasbourg (1633; Mus. B.A.), which is ambiguous and might equally be a mythological or Biblical scene. This led to Vouet's secular works, which are far removed from the anecdotal observation of Abraham Bosse's engravings. They best express a certain spectacular aspect of his times, when the theater was leaving behind the classical unities and becoming tinged with preciosity, and when a richly ornate style showed "... a constant preoccupation with movement and life" (P. du Colombier, 1941).

None of Vouet's great decorative works has survived intact; however, engravings that were based on them give a general idea of their composition. The etchings by Vouet's son-in-law, Michel Dorigny, have done justice to his work. Large-scale allegorical figures such as the *Riches* (PL. 386) and the *Peace* (Derbyshire, Eng., Trustees of the Chatsworth Settlement) were probably created as part of the decoration of the Château of Saint-Germain-in-Laye, as was also, perhaps, the painting, *The Cardinal Virtues* (Versailles, Palace), which is of smaller dimensions and which anticipates the period of Natoire. The *Diana* (PL. 388) probably formed part of works commissioned by Charles I and Henrietta Maria of France; a drawing of Zephyr (Besançon, Mus. B.A.) for a figure in a ceiling at Oatland Palace is the only direct testimony of this lost work. The *Gaucher de Chastillon*, whose pose is repeated in other works and whose ample cloak is in a rich yellow much used by Vouet, was painted for Richelieu's Galerie des Hommes Illustres at the Palais Royal. The *Time Vanquished* (Bourges, Mus. du Berry) was executed for a cabinet at the Hôtel Bretonvilliers in Paris. Nothing survives of the painted decorations of the Château de Chilly and the Hôtel Séguier, both in Paris, in which there were echoes of the work of Veronese and of Reni's pale paintings. Especially in the Hôtel Séguier, Vouet indulged in an abundance, even an excess, of figural and other elements in the galleries, library, and chapel, where the lively procession of the Magi stretched out behind a balustrade. A few drawings for these decorations are still extant: for the Château de Chilly, the sketch for a depiction of the Source (Louvre) that was to form part of the fresco of an allegory of the *Sun*; and for the Hôtel Séguier, two drawings for the allegorical composition of the Arts (Met. Mus.) and one of St. Peter (Rennes, Mus. B.A.), as well as various figure studies, among which the gay trumpeter of the Adoration (Louvre).

The paintings at the Hôtel de Bullion in Paris consisted chiefly of two cycles, both of which were reproduced in tapestries. The scenes from the Odyssey are known only from tapestries (now at the Château de Cheverny, near Blois), but the paintings from the Rinaldo and Armida series have survived (Paris, Coll. Guyot de Villeneuve). Some drawing studies, closer to the tapestry versions than to the canvases, may well lend weight to Charageat's theory (1927) that the tapestries were executed before the paintings. The compositions are airier than those of the Hôtel de Séguier; the figures, which are less numerous and more contemporary in their features, move in a park in dancelike rhythms. Lastly, the frescoes of *Parnassus* and the *Nymph and River God*, with stuccoes in the style of Sarrazin, are still preserved in the nymphaeum in the park of the Château de Wideville in Davron. This is the only extant example of what must have been Vouet's most accomplished decorative style.

Notwithstanding the importance of such a contemporary as Jacques Blanchard, Vouet remained without a rival until the end of the reign of Louis XIII. But, although he continued to work for Anne of Austria during her regency (his arabesques at the Palais Royal mark a transitional stage between the Italian tradition and the period of Claude Audran III), the arrival of Poussin (q.v.) in court in 1640 (when the King remarked, "That's a blow for Vouet") and, later, the King's death, marked the end

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

of his supremacy. Both Vouet and Poussin executed paintings for the Jesuit Novitiate (Vouet's is known from an engraving), and a comparison of the two works was inevitable. Poussin was turned to tasks that would have suited Vouet perfectly in his capacity of accomplished decorator at the head of a group of helpers. Although Poussin later left for Rome, Vouet's work no longer enjoyed the favor that it had previously. Vouet was director of the Académie de St-Luc (see INSTITUTES AND ASSOCIATIONS, col. 155), and among the members of the Académie Royale, founded in 1648, were many of his pupils, painters who were to dominate French art until it felt once more the renewed impact of the work of Rubens. Vouet instituted in France the "grand manner," to which the following generation subscribed, altering its spirit. In the 18th century his works had renewed appeal and influence, primarily through the rhythms and light colors of his tapestries (to the examples mentioned above must be added those of the *Amours des Dieux* in the Château de Champchevrier, Indre-et-Loire).

Of Vouet's drawings, a few general projects survive from his French period together with numerous isolated studies in black and white chalk. These studies and their relationship to one another contribute to the understanding of Vouet's art, in its skillful juxtaposition of lines. The comparison of Vouet's drawings with those of other masters makes it possible to measure his rank in relation to other artists: Le Sueur, who was so close to Vouet technically, had a laborious style of ingenuous diligence; Lebrun sketched the general lines of his compositions before he inserted the figures, which he then strongly outlined; Poussin, in his global vision, gave dramatic emphasis to essential figures, such as Solomon or Romulus, and only afterward harmonized them within a rational perspective in his paintings.

The enduring quality of Vouet's art consists above all in his directness of approach, which is evident in his intimate portraits and which is also to be found in his other works, whether elaborate compositions or simple studies. Paradoxically, his detractor Lépicié (1752) came close to a definition of this quality: "He stuck to his first ideas, whether inspired or commonplace, such as they presented themselves to his mind, without changing anything, and without aiming at improving them."

BIBLIOG. G. Baglione, Le vite de' pittori, scultori, architetti ed intagliatori del pontificato di Gregorio XIII del 1572 fino a' tempi di Papa Urbano VIII nel 1642, Rome, 1642; A. Félibien, Entretiens sur les vies et les ouvrages de plus excellents peintres, anciens et modernes, Paris, 1685–88; A. J. Dézallier d'Argenville, Abrégé de la vie des plus fameux peintres, Paris, 1745–52; F. B. Lépicié, Vies des premiers peintres du Roi, depuis M. Lebrun jusqu'à présent, Paris, 1752; P. de Chennevières, Essai sur l'histoire de la peinture française, Paris, 1894; M. Fenaille, Etat général des Tapisseries de la Manufacture des Gobelins, Paris, 1903–23; L. Demonts, Les amours de Renaud et d'Armida, B. Soc. de l'H. de l'art français, 1913, pp. 58–78; H. Voss, Die caravaggeske Frünzeit von Simon Vouet und Nicolas Regnier, ZfbK, LVIII, 1924–25, pp. 56–67, 121–28; L. Dimier, Histoire de la peinture française du retour de Vouet à la mort de Lebrun, 1627–1690, Paris, Brussels, 1926–27; M. Charageat, Notes sur cinq marchés passés par M. de Bullion . . . avec Jacques Sarrazin, Simon Vouet . . . , B. Soc. de l'H. de l'art français, 1927, pp. 179–207; W. Weisbach, Französische Malerei des XVII Jahrhunderts, Berlin, 1932; C. Sterling, Les peintres de la réalité en France au XVIIe siècle, Paris, 1934; C. Sterling, La peinture française au XVIe et XVIIe siècles, Paris, 1937; P. du Colombier, Le style Henry IV-Louis XIII, Paris, 1941; P. Lavallée, Simon Vouet et le tableau d'autel de l'Espagnac, B. Soc. de l'H. de l'art français, 1941–44, pp. 135–38; A. Blunt, Some Portraits by Simon Vouet, BM, LXXXVIII, 1946, pp. 268–71; P. Lavallée, Le dessin français, Paris, 1948; M. Lamy, Les Simon Vouet du Musée National des Beaux-Arts d'Alger, Et. d'art, IV, 1949, pp. 43–55; R. A. Weigert, Deux marchés passés par Simon Vouet pour les décorations de l'appartement d'Anne d'Autriche au Palais Royal (1645), B. Soc. de l'H. de l'art français, 1951, pp. 101–05; J. Bosquet, Documents sur le séjour de Simon Vouet à Rome, Mél., LXIV, 1952, pp. 286–300; R. Jullian, "Psyche et l'amour" par Simon Vouet au Musée des Beaux-Arts de Lyon, B. des musées lyonnais, I, 1, 1952, pp. 1–5; M. Lavallée, Dessins de Simon Vouet, Et. d'art, VII, 1952, pp. 107–26; G. Dargent, A propos du portrait de Simon Vouet au Musée des Beaux-Arts de Lyon, B. des musées lyonnais, IV, 2, 1955, pp. 1–36; J. Vallery-Radot, Six dessins de Simon Vouet du recueil Cholmondeley, B. Soc. de l'H. de l'art français, 1955, pp. 26–31; L. Grassi, Aggiunta al catalogo di Simon Vouet, Paragone, VII, 83, 1956, pp. 54–58; Y. Picart, Une gloire méconnue: Simon Vouet, Jardin des Arts, XLVIII, 1958, pp. 751–58; Y. Picart, La vie de l'œuvre de Simon Vouet, 2 vols., Paris, 1958; G. Dargent, La Madeleine dans l'œuvre de Simon Vouet, B. Soc. de l'H. de l'art français, 1959, pp. 31–40; R. L. Manning, Some Important Paintings by Simon Vouet in America, Studies in the History of Art Dedicated to William Suida, London, 1959, pp. 294–303; Y. Picart, A Vouet for the National Gallery, BM, CI, 1959, pp. 27–28; A. Griseri, La période romaine de Vouet: deux tableaux inédits, Art de France, I, 1961, pp. 322–25; B. de Montgolfier, La période parisienne de Vouet: un ouvrage oublié, Art de France, I, 1961, pp. 326–36; G. Seligman, "La Prudence amène la Paix et l'Abondance" by Simon Vouet, BM, CIII, 1961, pp. 297–99; W. R. Crelly, The Painting of Simon Vouet, New Haven, London, 1962.

Illustrations: PLS. 385–388.

Monique LAVALLÉE

VUILLARD, J. EDOUARD. French painter and graphic artist (b. Cuiseaux, Nov. 11, 1868; d. La Baule, June 21, 1940). Vuillard's father was a retired army officer; his mother, whose family was in the textile-designing and -manufacturing business, turned to dressmaking when her husband died in 1883 and set up a shop in Paris. In 1886 Vuillard entered the Ecole des Beaux-Arts, where he came to know Pierre Bonnard, Henri Gabriel Ibels, Paul Sérusier, Félix Vallotton, and Paul Ranson through his boyhood friends Maurice Denis and Ker-Xavier Roussel. These men, with Vuillard, formed a loosely organized artistic fraternity, calling themselves the "Nabis" (see EUROPEAN MODERN MOVEMENTS, col. 186). Attracted by Paul Gauguin's painting and his symbolist theories, they sought visual metaphor for certain exalted states of awareness, exploiting color, brushwork, contour, and pattern and avoiding evocative subject matter. The "gaucherie" of conception contrasted with the generally commonplace and mild thematic material: Vuillard and Bonnard (q.v.), in particular, found their subjects within the confines of the home. Because of this predilection for the private and personal they were dubbed "intimists"; as early as 1892 the critic G. A. Aurier referred to Vuillard as an "intimiste Verlainien."

In 1892 Vuillard painted for Mme Desmarais his first decorative panels and screens (now lost); and in 1894 he was commissioned by his friend Alexandre Natanson, an editor of the *Revue Blanche*, to paint for his home nine canvas panels in tempera, each some 7 ft. high, of Paris park scenes, now dispersed in various museums and private collections, including three in Paris (Mus. d'Art Mod.) and one each in Brussels (Mus. B. A.), Cleveland (Mus. of Art), and Houston (Mus. of Fine Arts). The emphasis on light and pattern and the naturalistic colors applied in broken patches give an effect midway between a tapestry and a poster; the figures appear informally, as if caught off guard. Four other decorative panels, done for a Dr. Vaquez in 1896 (Paris, Mus. du Petit Palais), feature young women engaged in domestic affairs, against interiors in which the rectilinear framework holds in check the contrasting flowered wallpaper and other animated decorative expanses.

In 1899, Vuillard's series of colored lithographs, *Paysages et Intérieurs*, was published by Vollard. From 1903 until World War I, Vuillard exhibited regularly at the gallery of his dealer, Bernheim Jeune, at the Salon des Indépendants, and at the Salon d'Automne, of which he was a founding member. In 1913 he executed decorations for the foyer of the Comédie des Champs-Elysées and, with Bonnard, visited London and Holland. During World War I he served in the home guard. Vuillard never married and lived with his mother until her death in 1928. In 1938 he was elected to the Institut de France and was given a large retrospective exhibition at the Musée des Arts Décoratifs.

Vuillard's style developed from the Japanese print and from the late work of Degas, from Gauguin, and from Redon (qq.v.). No doubt Vuillard was influenced by members of the Nabis, especially Bonnard, yet his art is peculiarly his own. His favorite medium was oil paint on cardboard, and he often chose a theme of domestic work, executed in small format. His interiors usually include people, frequently his friends and often women, engaged in simple tasks such as sewing or reading the morning paper, conversing, or merely daydreaming. They tend to be shown marginally, denied their fullness and centrality through segmentation, and are often overwhelmed or submerged in a wealth of decorative detail of wallpaper, rugs, and tablecloths. A tinted ground, dappled areas of muffled tones, and tender colors sharpened with piquant accents of black lend a cohesiveness to the whole. Certain of his works evoke a fragile mood; others seem fraught with Proustian nuances of tension and ennui. Vuillard's most daring work appeared early in his artistic

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

career; his later work is generally more literal in conception and more precisely detailed, with depth more clearly articulated, and the intimacy and poetry of the earlier paintings are often sacrificed for solidity and verisimilitude.

Among Vuillard's best-known works are *Woman Sweeping* (ca. 1892; V, PL. 122); *The Vuillard Family at Lunch* (1896; New York, Coll. Mr. and Mrs. Ralph F. Colin); *Waiting* (1900), *The Newspaper*, and *Woman with Child in Sailor Suit* (all, Washington, D. C., Phillips Coll.); *Madame Vuillard at the Household Accounts*, (1907; Winterthur, Kunstmus.); and *Annette's Father*, Saint-Tropez, Mus. de l'Annonciade.

BIBLIOG. C. Roger-Marx, Vuillard: His Life and Work, New York, 1946; A. C. Ritchie, Edouard Vuillard, New York, 1954.

Robert F. REIFF

WAGNER, OTTO. Austrian architect (b. Vienna, July 13, 1841; d. Vienna, Apr. 11, 1918). Wagner attended the Vienna Technische Hochschule, then studied at the Vienna Akademie der bildenden Künste under August Siccard von Siccardsburg and Eduard van der Nüll, and then attended the Bauakademie in Berlin. When Wagner began his architectural career in the 1860s, Vienna had just entered a period of dramatic change and expansion best exemplified by the Ringstrasse with its wreath of eclectic buildings. The monumental designs of Gottfried Semper (1803–79) in connection with the Ringstrasse and his theoretical writings were important factors in the formation of Wagner's architectural style.

Early in his career Wagner built a number of apartment houses in Vienna, including his own residence at Rennweg 3 (1889). He retained an interest in urban housing throughout his life, and some of his best buildings are apartment houses, such as 38a and 40 ("Majolika Haus") Linke Wienzeile (1898) and 40 Neustiftsgasse (1909). Apartment buildings did not permit a full realization of his monumental intentions, but other projects exist that are embodiments of monumentality and decorative exuberance, such as the "Artibus" design of 1880. In 1881 Wagner designed decorations for the entry of Crown Princess Stephanie into Vienna; two years earlier he had collaborated with the painter Hans Makart in providing decorations for the silver wedding celebration of Emperor Franz Josef I. The 1880s also saw remarkable buildings carried out, among them the office for the Länderbank, at Hohenstaufengasse 3, and his own first country villa, Hüttelbergstrasse 26. In the first period of Wagner's career, up to the early 1890s, he was essentially an eclectic and favored, in his own words, "a certain free Renaissance"; but he was obviously more talented than most of his contemporaries and more radical in his insistence on utility and construction as determinants of design.

In 1892–93 Wagner won first prize in a city-planning competition for Vienna with his scheme, "Artis sola domina necessitas." A commission to plan the Stubenviertel followed, and in 1894 came the gigantic task of designing the architecture of the new metropolitan subway, the Stadtbahn, which put him in close contact with large-scale engineering problems. In the same year Wagner was appointed professor of architecture at the Akademie der bildenden Künste, succeeding Baron Karl von Hasenauer. From this key position he published in 1895 what purported to be a textbook for his students but amounted to a manifesto: his book *Moderne Architektur*, which went through several editions and translations (in 1914 as *Die Baukunst unserer Zeit*), which contains Wagner's renunciation of the principles of eclecticism and his recognition of the need for a new architecture to fit the requirements of a new society. In it he boldly expressed the concepts of the new architecture: "The recognition must become general that the only point of departure for our artistic activity can be modern life.... This new style, the modern one, in order to represent us and our time, will have to express clearly ... a distinct change of what has been the sentiment till now, the almost complete decline of romanticism, and the accentuation of function in such a way that it usurps almost every domain.... Something impractical cannot be beautiful.... The architect must always develop the art form from the construction.... In the resulting art form of the future the carrying and supporting line, the handling of the surface as a slablike plane, the greatest simplicity of conception, and an energetic emphasis on construction and material will dominate strongly...."

The attitude expressed in these and similar formulations explains why in 1899 Wagner joined the Vienna Sezession, a radical artistic group that promoted a characteristic local version of Art Nouveau (q.v.). Following the trend of the times, Wagner also designed a number of interiors, including furniture and craft objects. Typical Art Nouveau elements, however, especially scrolls of decorative metalwork, occur in his *œuvre* for only a few years; later his classicist and rationalist tendencies made themselves felt more strongly again.

By the beginning of the 20th century Otto Wagner had created an architecture unmistakably his own, which in its best examples points clearly toward the future. In the face of hostility from many official circles he produced an impressive number of designs, only a few of which were realized as buildings, such as the Postsparkassengebäude (Postal Savings Bank, Vienna, 1903–06; V, PL. 100, FIG. 225), the Church of St. Leopold (Steinhofkirche, Vienna, 1903–07; V, PL. 100), a sanatorium (Heilstätten Heim für Lupuskranke, Vienna, 1908–09), and a second residence for himself at Hüttelbergstrasse 28 (1905–12). These buildings share a disciplined rationality in plan, a juxtaposition of simple geometric volumes, an insistence on flat planar elements, a preference for new materials such as aluminum and black glass, and a masterly use of light and color. Wagner's projects that remained on paper were numerous; they include designs for a number of churches, for ministries, a museum of technology, a hotel, a new academy of fine arts, the so-called "House of Glory" for San Francisco, and several versions of a design for a great museum of the city of Vienna that had important city-planning implications.

Wagner never lost a genuine interest in questions of city planning. In 1910 he made a project for a twenty-second district of Vienna, and in 1911 he published a study of the *Groszstadt*, which was translated into English in the *Architectural Record* of 1912. His influence was more far-reaching than is generally realized. He participated in many competitions, including the international ones for the Amsterdam Stock Exchange (Börse, 1884) and for the Vredespaleis (Palace of Peace) in The Hague (1905), and his "Artibus" design seems to have been sent to the United States. Published designs from his class at the Akademie were often quite revolutionary and almost utopian in character. His pupils or assistants included such leading figures as J. M. Olbrich and Josef Hoffmann, and his architecture was studied and admired by architects outside Austria, including Antonio Sant'Elia and Frank Lloyd Wright.

MAJOR WORKS (all located in Vienna unless otherwise indicated). 1863: First prize, competition for Kursalon, Stadtpark. – 1877: Apartment building, Schottenring 23. – 1879: Decorations, silver wedding celebration of Emperor Franz Josef. – 1880: Apartment building, Rathausstrasse 3. – 1881: Decorations for entry of Crown Princess Stephanie. – 1882: Apartment building, Stadiongasse 6–8; Länderbank office building, Hohenstaufengasse 3. – 1884: Apartment building, Lobkowitzplatz 1; project for Amsterdam Stock Exchange competition. – 1885: Villa Hahn, Baden. – 1886–87: First Otto Wagner villa, Hüttelbergstrasse 26; apartment building, Universitätsstrasse 12. – 1889–90: Otto Wagner town residence, Rennweg 3; apartment buildings, Rennweg 1a and 5. – 1893: Plan for Vienna. – 1894: Neumann department store, Kärntnerstrasse; "Ankerhaus," Spiegelgasse 2; Johanneskapelle. – 1894–98: Stadtbahn and Nussdorf water gate. – 1898: Apartment buildings, "Majolika Haus," Linke Wienzeile 38a and 40; project, Academy of Fine Arts, I; projects for church at Währing and for the Kapuzinerkirche. – 1900–12: Projects for a museum of the city of Vienna. – 1903–06: Postal Savings Bank. – 1903–07: Church of St. Leopold (Steinhofkirche). – 1904–06: Kaiserbad water gate buildings. – 1905: Project for competition, Palace of Peace, The Hague. – 1905–12: Second Otto Wagner house, Hüttelbergstrasse 28. – 1906: Project, Palast der Wiener Gesellschaft. – ca. 1907: Project, "House of Glory," San Francisco. – 1907–08: Project, Ministry of War and Ministry of Commerce. – 1908–09: Heilstätten Heim für Lupuskranke. – 1909: Apartment buildings, Neustiftsgasse 40 and Döblergasse 2 and 4; project, Technisches Museum für Industrie und Gewerbe. – 1910, 1914: Projects for uni-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

versity library. – 1910: Project, Academy of Fine Arts II; plan for a twenty-second district of Vienna. – 1913: Haus der Kunst. – 1917–18: Haus der Kindes.

MAJOR PUBLICATIONS. Einige Skizzen, Projekte und ausgeführte Bauwerke, 4 vols., Vienna, 1889–1922; Moderne Architektur, Vienna, 1895; Zur Kunstförderung, Vienna, 1909; Die Groszstadt, Vienna, 1911; Die Qualität des Baukünstlers, Vienna, 1912; Wagnerschule 1898–1900, in Der Architekt, Vienna, 1898–1901; Wagnerschule 1902, Vienna, 1903; Wagnerschule 1902/3–1906/7, Leipzig, 1905, 1910.

BIBLIOG. J. A. Lux, Otto Wagner, Munich, 1914; H. Tietze, Otto Wagner, Vienna, 1922; D. Frey, Otto Wagner, in Neue Österreichische Biographie, I, pp. 178–87, Vienna, 1923; H. Ankwicz, in Allgemeines Lexikon der Bildenden Künstler, XXXV, Leipzig, 1942 (full bibliog.); H. Ostwald, Otto Wagner (Diss., E.T.H., Zurich), Baden, 1948; Historisches Museum der Stadt Wien, O. A. Graf, Otto Wagner, Vienna, 1963 (cat.); H. Geretsegger and M. Peintner, Otto Wagner, Salzburg, 1964.

Eduard F. SEKLER

WALES. See GREAT BRITAIN.

WALPOLE, HORACE. English collector, connoisseur, and historian of art (b. London, 1717; d. London, 1797). Walpole was the youngest child of Sir Robert Walpole, 1st Earl of Orford (later George II's prime minister) and himself succeeded to the title as 4th Earl of Orford toward the end of his life. He was educated at Eton College and King's College, Cambridge. In 1739–41 he made the grand tour through France and Italy, setting out with the poet Thomas Gray but returning separately as the result of a quarrel.

In his long life, which is well documented by his writings and especially by his letters, Walpole was prominent in many fields. He was Member of Parliament for King's Lynn 1757–68; he was author of *The Castle of Otranto* (1764) and *The Mysterious Mother* (1768), described by Byron as, respectively, "the first romance and . . . the last tragedy of our language"; but to the student of the visual arts he is primarily the owner of Strawberry Hill and the author of *Anecdotes of Painting in England*.

Walpole bought the house that he named Strawberry Hill (VIII, PL. 109; see VI, cols. 780, 827), at Twickenham, Middlesex, in 1747. Gothic additions were begun in 1752 and continued, with intervals, until 1776. During the first decade the chief designers were John Chute and Richard Bentley; the gallery (1760–63) was designed by Thomas Pitt (later Lord Camelford), and the Beauclerk Tower (or Round Tower, 1776) by James Essex. In 1790 detached offices were built by James Wyatt after plans by Essex of 1777. Even in 1752 Neo-Gothic (q.v.) was no novelty, but Walpole's example established its respectability, and the imitation of specific medieval models in features of Strawberry Hill heralded a more archaeologically oriented phase of the Gothic revival (see X, col. 554).

At Strawberry Hill Walpole kept his collection of works of art and articles of virtu, and there in 1757 he set up the printing press from which came, *inter alia*, the first edition of *Anecdotes of Painting in England* (vols. I and II, 1762; III, with a "Catalogue of Engravers Born and Resident in England," 1763; IV, with an "Essay on Modern Gardening" appended, 1771 but not published until 1780). This work was the result of Walpole's purchase in 1758 of the notebooks in which the engraver George Vertue (1684–1756) had collected information about English artists from the earliest times to his own. In reassembling this "chaotic and often hardly intelligible material" in highly readable form, Walpole became the father of English art history, while his "Essay on Modern Gardening" remains the most eloquent vindication of the landscape school of the 18th century.

WRITINGS. R. Berry, ed., The Works of Horatio Walpole, Earl of Orford, 5 vols., London, 1798; Mrs. P. Toynbee, ed., Letters, 16 vols., London, 1903–05, with 3 supplementary vols., ed. P. Toynbee, 1918–25; P. Toynbee, ed., A Journal of Visits to Country Seats, Trans. of the Walpole Soc., XVI, 1927–28, pp. 9–80; W. S. Lewis, ed., The Yale Edition of Horace Walpole's Correspondence, 20 vols. to date, New Haven, 1937–

BIBLIOG. P. Yvon, La Vie d'un dilettante, Horace Walpole, Paris, 1924; W. S. Lewis, The Genesis of Strawberry Hill, Met. Mus. S., V, 1934, pp. 57–92; R. W. Ketton-Cremer, Horace Walpole, London, 1940; M. S. Briggs, Men of Taste, London, 1947, pp. 162–72; A. T. Hazen, A Bibliography of Horace Walpole, New Haven, 1948.

Marcus WHIFFEN

WANG MÊNG. Chinese painter of the Yüan period (b. Hu-chou [Huchow], now Wu-hsing [Wuhing], Chekiang, ca. 1308; d. 1385). Only two years before Wang Mêng's birth, Giotto had completed his Padua frescoes (ca. 1306), an artistic event that, although contemporaneous with Yüan painting, is completely unrelated to it. To point up the wide discrepancy between the aspirations of a Trecento master and those of an intellectual artist of 14th-century China, one has only to observe that the latter was groping toward an expressionistic art comparable to Western movements no earlier than the late 19th and early 20th centuries.

It is known from the Ming Annals (*Ming-shih*) that Wang Mêng, whose courtesy name was Shu-ming, was a grandson on his mother's side of Chao Mêng-fu (q.v.), a descendant of the Sung imperial family, a statesman, and a versatile artist who had contributed much to the change of artistic climate in his day and whose wife, Kuan Tao-shêng (1262–ca. 1325), Wang's grandmother, was a renowned painter in her own right. Of Wang Mêng's parents nothing is recorded, but certainly they enabled him to study literature and calligraphy and to make himself at home in the art world early in his life. Wang Mêng held minor official positions under both the Yüan and Ming dynasties: he was a supervisor of investigations under the former and prefect of T'ai-an-chou in Shantung under the latter. When the uprisings against the Mongols began, he withdrew to Huang-hao-shan ("Yellow Crane Mountain") near Hang-chou (Hangchow) in his home province. The locality accounts for Wang's literary name, Huang-hao-shan-ch'iao ("Fuel Gatherer of Yellow Crane Mountain"), which may have been adopted before his retirement, since it appears in his signatures of the 1340s. For a time Wang Mêng served under the first Ming emperor, T'ai-tsu (reign name Hung-wu; 1368–98), but in 1380, when Prime Minister Hu Wei-yung was executed for having plotted against the emperor, Wang Mêng was imprisoned as an alleged conspirator. He died in prison in 1385. The Ming Annals virtually exonerate him by relating that it was to see paintings in Hu Wei-yung's possession that he had visited the minister's residence.

That Wang Mêng was early aware of matters that occupied the minds of the foremost painters of the beginning of the 14th century may, in view of his family ties, be taken for granted. While he may not have been mature enough to have profited from encounters with his grandfather, who died when Wang Mêng was only fourteen, he certainly must have seen many of the elder's works and learned about his relationships with Chao Mêng-chien (1199–ca. 1295), Ch'ien Hsüan (ca. 1235–1300), and Kao K'o-kung (1248–after 1310), all of whom contributed works or ideas of importance to the profound reorientation in Yüan painting. Wang Mêng was no doubt well acquainted with Chao Yung (1289–ca. 1360), a son of Chao Mêng-fu, as well as with Ts'ui Yen-fu, grandson of Chao Mêng-fu, and Ts'ui Fu, Chao Yung's son-in-law. The two Ts'ui were noted painters, but there is only one work of Yen-fu now extant, a landscape signed and dated 1342 (Peking, Palace Mus.), a mountain scene that in its contrived linear structure and its dry, soft brushwork with light color but no tonal variations might have appealed to Wang Mêng. This landscape demonstrates no outright archaism or primitivism, the features that were characteristic of the older generation's struggle to break away from the sophisticated realism of Southern Sung painting. That primitivism is strikingly exemplified by a short handscroll, *Autumn Colors on the Ch'iao and Hua Mountains*, painted by Chao Mêng-fu in 1296, the year after Marco Polo's return to Venice. While it stands rather isolated within Chao's diversified *œuvre*, this scroll is such an outright denial of Southern Sung ideals as to be almost programmatic. The typically picturesque Sung landscape, enveloped in a vibrant atmosphere

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

evoked by exquisitely graded ink washes, has been replaced here by an arbitrary assemblage of commonplace things rendered in linear patterns and color, devoid of movement, air, and space. As in archaic landscape designs, the two mountains are brusquely set into this assemblage, disengaged from the rest. Perhaps this scroll of Chao Mêng-fu is more remarkable as a document of his resolute negation of the exhausted Sung tradition than as a positive achievement of a new form. It scarcely set a standard, but it did contain the seeds of some of the future standard features of landscape painting. As for Wang Mêng, in whose work we find only rarely any signs of direct indebtedness to others, it is difficult to tell whether he owed anything more to his grandfather Chao than his artistic inclinations and a comparable attitude of detachment from realistic representation. His style cannot be said to be derived from Chao's *Autumn Colors*, and it certainly owes even less to the various other manners and experiments of the older master. From the beginning, Wang's work seems to have developed in a circumscribed, personal direction.

Among Wang's close friends were Ni Tsan (q.v.) and Ch'ên Ju-yen (active ca. 1340–80). Ni Tsan, whose bleak and serene river views done in a most sparing technique contrast greatly with Wang's involved and exuberant mountainscapes, refers to him in the inscription of a picture of 1352; together with Wang he painted a landscape in 1361; and in his late "Lion Grove" handscroll of 1373, he once more mentions his friend in a jocular colophon in which he says, "Not even in his dreams could Wang Mêng have conceived of a picture that so truly captures the spirit of Ching Hao and Kuan T'ung." Ni Tsan's estimate of Wang Mêng's artistic rank is known through the words quoted by Tung Ch'i-ch'ang (q.v.) in an inscription on a painting by Wang Mêng: "There was not such a man in the last five hundred years" (Fang Hsün, *Shan-ching-chü hua-lun*).

Both Ni and Wang were acquainted with Ch'ên Ju-yen (courtesy name Wei-yün; executed in 1380) and with his brother Ch'ên Ju-chih (courtesy name Wei-yin). Ju-yen was a painter whose landscape style, which is said to have been based on Chao Mêng-fu's, agrees more closely with Wang Mêng's than does Ni Tsan's. Still, measured by Wang's impetuosity and dynamism, Ju-yen's landscapes have a very quiet and lucid air. Both Ni and Wang painted Ch'ên's Ya-i Mountain cottage, Wang's version dating from 1358 (PL. 390). Ch'ên Ju-yen's *Ching River*, depicting the scenery of the western banks of Tai Hu (literally, "Great Lake"), bears inscriptions of both friends. When Wang Mêng was prefect at T'ai-an in the early Ming period, Ju-yen came to see him, and two of Wang's extant works are dedicated to Ju-chih.

Wang Mêng's known dated works range from 1342 to 1370. Too little is known of the master's life to explain why there seem to be no works from the decade 1370–80, nor can the absence of any works dated before 1342 be explained. However that may be, the twenty-eight-year time span of his known works ought to give a fair idea of the painter's growth and maturity, even though the task of sifting his *œuvre* remains to be performed. On the whole his style is readily recognizable, and for precisely that reason it was widely imitated. It was bound to be imitated and reinterpreted also as one of the great intellectual achievements of its period.

To judge from the *River Dwellings among Autumn Mountains* of 1342 (PL. 389), Wang Mêng had by his early thirties achieved a style, consistent with his later works, that was unlike that of any of his great contemporaries. The long scroll is crowded with forms built up of innumerable small elements arranged in transparent patterns. These patterns for tree or forest, rock or mountain lack both volume and solidity, cohering chiefly through the geometric device of curves winding upward. Nor do they possess specific surface qualities as the rocks of Sung paintings do. Even the houses are reduced to simple ciphers that are, like the trees, commonplace elements rather than representations. In fact, a painting of this kind may be considered less a representation than a pictorial paraphrase of the theme of landscape.

A rare early work of Wang's, according to a colophon of 1506 by Shên Chou (1427–1509), is the handscroll *T'ai-pai Mountain*, in the Museum of Fine Arts in Boston (detail, PL. 389). Though unmistakably in Wang's style, the scroll does not closely agree with the painting of 1342; it has a neatness and ease of execution that may point to another hand. In contrast, a work that exhibits nothing truly typical of Wang's manner yet bears his own later-added signature, a mountainscape entitled *Ko Chih-ch'uan's Removal* (reproduced in *Chung-kuo ming-hua*, VII, Shanghai, 1926; formerly, Kuang-tung [Kwangtung], Tuan Fang Coll.), may well antedate the *River Dwellings* of 1342. For once it seems to reveal a dependence on Chao Mêng-fu, a feature that would be in keeping with its presumed early date.

Two paintings of the late 1350s may be singled out to represent the mature artist. The *Hall in the Glen of Heavenly Fragrance* (*T'ien-hsiang shen-ch'u t'ang*; PL. 389) of 1357 far surpasses in expressiveness and character the master's early creations. In his peculiar graphic idiom of short curly strokes he constructs here, with a weird and solemn effect, gigantic pillarlike cliffs that tower oppressively above the secluded homestead in the valley. The artificiality of the shapes and textures is enhanced by an unrelentingly precise technique. *The Ya-i Mountain Studio* (*Ya-i shan-chai*; PL. 390), painted for Ch'ên Ju-yen in 1358, is a smaller and less complex variation of the motif of the mountain hermitage, executed with an apparent tempo and in a sketchier manner. Extraordinary and disquieting is the effect of rocks in motion — an effect brought about by the changing direction of the dabs and flicks of the brush, fuzzy contours, and ambiguous definition of surfaces. Nothing is seen, however, of this restless air in the appealing scroll of 1361 in the Art Institute of Chicago, *A Quiet Life in a Wooded Glen*, which despite its intricate design, especially of the trees, is clearly articulated and of a serene expression.

Beginning with a very long and narrow scroll in the Palace Museum in Peking, *Remote Monastery in the Autumn Hills*, painted for Tsou Fu-lei in 1362, the forms coalesce. A unifying movement pervades the whole composition, the brush becomes pliant and softer, and the sharp contrasts of textures disappear. Wang Mêng's landscapes come to resemble colossal organic structures either in convulsive movement, as in *The Ch'ing-pien Hermitage* of 1366, or in an even rhythm and with a new awareness of open space, as in the painting of 1368 entitled *Dwelling in the Summer Mountains* (PL. 389). This late work scarcely differs thematically from the *River Dwellings* of the 1340s, which, however, seems by comparison like an insignificant, conventional exercise. The deeply personal and moving, if sometimes oppressive, images of the following decade reveal an artist of individual and unmistakable character who was to achieve in his work of the 1360s a true classicality.

SOURCE. Chang T'ing-yü (1672–1755) et al., Ming-shih ("History of the Ming dynasty: 1368–1643"), CCLXXXV.

BIBLIOG. Chêng Ch'ang, Chung-kuo hua-hsüeh ch'üan-shih ("A history of Chinese painting and art theory"), Shanghai, 1929; Ku-kung shu-hua-chi ("Reproductions of painting and calligraphy in the Palace Museum"), 45 vols., Peking, 1929–35, s.v.; Sun Ta-kung, Chung-kuo hua-chia jên-ming to tz'ü-tien ("Biographical dictionary of Chinese painters"), Shanghai, 1934; M. Loehr, Studie über Wang Mêng: Die datierten Werke, Sinica, XIV, 1939, pp. 273–90; O. Kümmel, ThB, s.v.; Ku-kung shu-hua lu ("Catalogue of painting and calligraphy in the Palace Museum"), Taipei, 1956; O. Sirén, Chinese Painting: Leading Masters and Principles, London, New York, 1956–58, IV, pp. 85–92, VII, pp. 137–39; A. Giuganino, La pittura cinese, Rome, 1959, I, pp. 144–45, II, pl. 269.

MAX LOEHR

Illustrations: PLS. 389–390.

WANG SHIH-MIN, CHIEN, HUI, AND YÜAN-CH'I. Chinese painters of the Ch'ing period, known as the "Four Wangs." They are grouped together not only because they have the same family name but also because the intellectual background from which they derived their inspiration was the same.

Wang Shih-min (1592–1680), his grandson Wang Yüan-ch'i (1642–1715), and Wang Chien (1598–1677) came from T'ai-ts'ang (Kiangsu), the region that gave its name to the school of painting founded by Wang Shih-min and Wang Chien. Wang Hui (1632–1717), whose father was an art dealer, was a native of

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Ch'ang-shu, also in the province of Kiangsu. Wang Hui and Wang Yüan-ch'i were both pupils of Wang Shih-min and were consequently able to enjoy the educational advantages of the rich art collection of Wang Shih-min's grandfather, Wang Hsi-chiao. Their styles show the influence of their studies of original works of art of the Sung (960–1279) and the Yüan (1260–1368) periods that were included in this collection, among which were paintings by four of the masters of the Yüan dynasty: Huang Kung-wang (1269–1354), Wu Chên (1280–1354), Ni Tsan (q.v.), and Wang Mêng (q.v.). Apart from this collection, however, it was not easy for the four Wangs to gain access to important originals for study. The styles of Ch'ing painters were for the most part formed by the study of such paintings as chanced to be accessible to them in private collections, rather than by general stylistic influences like those affecting European artists, who could study masterpieces in churches and other public buildings. In China such conditions simply did not exist; there had always been, instead, a small group of private owners and artists who influenced one another through reciprocal loans of available masterpieces. One cannot, therefore, speak of a "17th-century Chinese style" in painting, since, for example, during the same period such masters of Nanking as Kung Hsien (ca. 1625–after 1698) painted in a very different manner from the Buddhist monks K'un-ts'an and Shih-t'ao (Tao-chi), who were their contemporaries. The masterpieces of the great European artists determined the style of an epoch, which was modified by succeeding masters. As a result one can speak in European art of a "Gothic style" and a "Renaissance style" that, as period styles, differ basically. This phenomenon did not occur in China, where, instead, one differentiated between the "professional painters," whose domain was portraiture and the representation of historical scenes, and the "literati painters." The four Wang masters belong in the latter group.

The Confucian indoctrination in their education distinguished them from the professional painters, who had only a technical education. The most fundamental concept drawn from a Confucian education that had a specific influence on the development of the Wangs' approach to painting was their ability to discover and depict the timely essence of the general from an independent and careful study of the particular (see CONFUCIANISM). This ability could be achieved only through practice, through daily undertakings and repeated contacts such as the study of some masterpiece, approached each time with a renewed vigor. Whoever accustomed himself in daily life to the Confucian manner of continually measuring the unimportant against the important would always know how to separate the durable from the ephemeral, whether he was observing a masterpiece or creating one. In keeping with this, the literati painter might well mention reflections in water in his poetry but would never seek to represent something so fleeting in his painting. In the landscape paintings done by the literati the artist never selected a single specific slice of nature, recognizable as something that existed at a certain time and in a certain location and reproduced in the original coloring, but instead painted, after much observation, a kind of composite of the same object seen at different times and from different viewpoints. In this manner he unconsciously developed and expressed a deeper understanding of the subject, always keeping his emotions under control so as not to confuse his judgment of what is permanent.

This Confucian approach to painting had technical implications as well. The literati painter's faculty of synthesis — the bringing together in a larger context of the small particular observations that he has made from time to time — shows itself in his paintings in the uniform rhythm of the brush strokes. Likewise, the color in these paintings in no way changes the essence of the form of the object. Color was not considered by the literati painters as something that adds a lasting quality to the model, since the characteristics of color are subject to the changing influence of light. As a result, the colors in a painting were regarded as something superimposed on the basic form, whereas for the professional painter the relationship of color and form was a integral one.

How the four Wang masters reflected this philosophy of painting can best be determined from their own works (PLS. 391–396) and from colophons and their own inscriptions on their paintings. According to one inscription, Wang Shih-min and Wang Chien "studied and debated together the laws of painting," using famous works of the old masters as models. Wang Chien especially devoted himself to comprehensive study, copying almost all the Sung and Yüan masters, but more such studies of the old masters done by Wang Hui have been preserved. He worked a great deal with the collection of Wang Shih-min, as is shown by letters still in existence, and derived much of his personal style as well from the study of the famous originals that his father bought and sold.

This approach among the Ch'ing literati had its foundations not only in the concept of discipline as the only real means of first understanding and then expressing the inherent truth in nature, but also in the fundamental Confucian tenet of reinforced tradition. The principal duty of the educated Confucianist — the literati prototype — was the maintenance and development of tradition. Thus the Ch'ing painters' absorption in and emulation of the Yüan masters, with whom they had a certain feeling of historical kinship, was a seriously conceived artistic movement. But the works of the four Wangs reflect above all a concept intrinsic to the idea of *wên-jên-hua* — that there need not be a connection between the expressive purpose and the representational content in a work of art. The Ch'ing literati painters were concerned, therefore, not with new concepts of landscape themes but rather with the power of the brush stroke for representing established, immutable themes. Wang Yüan-ch'i described most fully the specifics of the artistic intuition of the literati painter: "What is important in paintings is that the artist have the inspiration before he applies the brush. When he has brush in hand, he must leisurely and meditatively adjust himself to his inspirations, purge himself of any trite feelings, compose himself, and concentrate. Then he should estimate the height and width and decide what should be inserted, what omitted, and how the main features of the composition should be arranged. When he has come to a final decision he then dips his brush into the ink, determines a lively mode of expression of the energy areas, so divides the space, and then decides on the amount and intensity of the shading. Certainly one must now and then change something, bring East and West into their proper relationship; but when the water flows and finds its natural level by itself, then a happy conclusion will undoubtedly be reached. To complete the arrangement, the rises and declivities should be brought into proper relationship with the distance, and the foreground and background should be clearly differentiated; sometimes the composition is worked toward the heights, sometimes toward the broad view; the relationship between the peak, the middle, and the foot of the mountain must be very carefully balanced. If one . . . fails to consider all these aspects, he will strangle the life of his representation, and it will lose its power of expression. . . . If, however, the painter brings the diagonals and verticals, the complete and the disintegrated, the separate and the united into such vitality that motion is incorporated in it, then he will have a 'real' painting."

Wang Yüan-ch'i, further explaining the philosophy behind his painting, also wrote in an inscription: "A breath must flow through every brush stroke, so that the oblique lines and the curves give life to the changes of direction in the painting. The brush strokes are the bones, the colored shading the flesh. Even sharp lines must not lose their mellowness, as they do when the painter allows the brush to lead him. Depiction of the surfaces begins with gentle tones, only gradually becoming forceful; one must never begin with the color just as it drips from the brush. Whatever one may produce from the time-honored rules depends on his own eye, his own judgment."

SELECTED WORKS ATTRIBUTED TO THE FOUR WANGS. *Wang Shih-min: River Scenery*, signed and dated 1636, Boston, Mus. of Fine Arts. – *Field Flowers*, signed and dated 1657, Stockholm, Östasiatiska Mus. – Landscape in the style of Huang Kung-wang, fan painting, signed and dated 1665, Lugano, Coll. J.-P. Dubosc. – Landscape in the style of Chao Mêng-fu, album leaf, 1670, New York, C. C. Wang Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Wang Chien: *River Valley between High Mountain Slopes*, signed and dated 1660, New York, C. C. Wang Coll. – Eight small landscapes after old masters, one signed and dated 1665, Stockholm, Östasiatiska Mus. – *White Clouds over Hsiao and Hsiang*, signed and dated 1668, Washington, D.C., Freer Gall.

Wang Hui: *Straw-covered Hut in the Autumn Mountains*, signed and dated 1674, Paris, Mus. Guimet. – *River Landscape in Autumn Colors*, signed and dated 1677, Paris, Mus. Guimet. – *Old Trees and Bamboos*, signed and dated 1688, Stockholm, Östasiatiska Mus. – Homestead under bare trees in early spring, fan painting, signed and dated 1689, Boston, Mus. of Fine Arts. – *Watching a Waterfall*, after Li T'ang, signed and dated 1692, Tokyo, Nat. Mus. – An old temple surrounded by leafy trees between two steep cliffs, signed and dated 1692, Cologne, Mus. f. Östasiatische K. – *Tall Bamboo and Distant Mountains*, signed and dated 1694, Cleveland, Mus. of Art.

Wang Yüan-ch'i: River landscape in the style of Ni Tsan, vertical scroll, 1704, Lugano, Coll. J.-P. Dubosc. – *Mountains in Mist*, combining the manners of Huang Kung-wang and Fang Ts'ung-i, 1712, Paris, Mus. Guimet. – Grassy mountains and tall trees, fan painting, Boston, Mus. of Fine Arts.

BIBLIOG. V. Contag, Die sechs berühmten Maler der Ch'ing-Dynastie, Leipzig, 1940; A. W. Hummel, Eminent Chinese of the Ch'ing Period (1644–1912), II, Washington, D.C., 1943–44, pp. 812, 823–24, 833–34, 844–45; O. Kümmel, ThB, s.v.; O. Sirén, Chinese Painting: Leading Masters and Principles, London, New York, 1956–58, V, pp. 95–109, 173–84, 200–11, VII, pp. 421–23, 425–32, 434–36, 439–43; V. Contag, Konfuzianische Bildung und Bildwelt, Zurich, 1964.

Victoria CONTAG

Illustrations: PLS. 391–396.

WANG WEI. Chinese poet, painter, calligrapher, and musician of the T'ang dynasty (b. 699; d. 759). Wang Wei, styled Mo-ch'i (which, when combined with his first name, forms the Chinese equivalent of *Vima*lakīrti, the great Buddhist lay saint), was also called Yu-ch'êng (a reference to his last official rank). Originally from the district of Ch'i in Taiyuan (Shansi), he came from a clan of great social eminence that contributed no less than 13 prime ministers to the T'ang dynasty. His father moved the family to P'u-chou, where Wang Wei was born, two years before the birth of the great poet Li Po. He was brought up at a time (1st half of 8th cent.) when the T'ang Empire was at an unprecedented height of material wealth and cultural vitality, an age that was immortalized by an unparalleled procession of artistic and literary giants whose imprints were left permanently not only on China but also on a large part of eastern Asia. In the capital, Ch'ang-an, figure painting at its fullest development had aroused great public excitement through large religious compositions on hundreds of temple walls, and landscape painting was on its way to revolutionary changes, pioneered by the two foremost masters of the time, Li Ssŭ-hsün (q.v.), who in 705 was Senior Lord of the Court of Imperial Family Affairs, and Wu Tao-tzŭ (q.v.), who in 713 had just been appointed Painter-in-Imperial-Service. These two had opened up a new continent for the following generation of painters, including Wang Wei.

Wang Wei's literary genius was recognized early in his childhood, but his success in the metropolitan examination in 717 may have been attributable less to his scholarship than to his musicianship. He was an acomplished composer, performer, and critic, and when he passed the palace examination for the highest degree (*chin-shih*) in 719, at the age of twenty-one, he was appointed assistant director of the Imperial Directorate of Music. From here he began his long and often frustrated climb in the bureaucratic hierarchy of the T'ang dynasty. When he died in 759, at the age of sixty-one, he occupied the powerful position of *shang-shu yu-ch'eng*, or Right Executive Assistant of the Chief Minister, overseeing the administration of 12 departments in the war, justice, and works ministries. Disillusioned in later life by public service and saddened by the deaths of his wife and his mother, he completely withdrew from society into a life of solitary Buddhism. In one of six impromptus written during this period, he said, "I may have been recognized, all by mistake, as a poet in this world, while I should have been a painter in my former life." It is believed, however, that he had taken up painting at a younger age. He is known to have done a portrait for a contemporaneous poet, Mêng Hao-jan, who died in 740, when Wang Wei was forty-two. His early interest in painting was also manifested in his financial support of the outstanding painter of horses, Han Kan, which is reported to have continued for nearly two decades, until the latter acquired national fame

Wang Wei's exalted position in Chinese art history rests primarily on his enshrinement as founder of the so-called "southern school" of painting by Tung Ch'i-ch'ang (q.v.), the most influential Chinese art critic of the last three centuries. Tung Ch'i-ch'ang's theory about the southern and northern schools, with its far-reaching implications, is admittedly an arbitrary hypothesis from a purely art-historical point of view. It does, however, reveal a deep historical insight that goes beyond the limited domains of style and technique, reaching the very heart of the social and philosophicoreligious background of Chinese art. The middle of the 8th century was a turning point in Chinese social history, as the new literati class coming from the landed gentry gradually began to displace the aristocratic families from the dominant position. In the person of Wang Wei, Tung Ch'i-ch'ang found an ideal model of the man who combined the best qualities of both groups: a gentleman of high birth and moral standards and of great social charm, a creative genius who could hardly be equaled in the "three excellences" of poetry, calligraphy, and painting, and an intellectual able to reconcile Confucianist principles with a Buddhist life. Even more important, the middle T'ang period was an age of renaissance in the sense that the southern culture of the Six Dynasties was being revived, and Wang Wei symbolized this nostalgic, spiritual return to a national heritage amid the influx of alien influences. This renaissance was partly a result of the success of the Chinese in transforming Ch'an Buddhism and integrating it into the commonplace immediacy of daily life, and Wang Wei, again, was best qualified to represent this transition. A rebellion in 755–56 marked the turn of public allegiance from the northern Ch'an Buddhist school of the priest P'u-chi to the southern school of Shên-hui. Wang Wei was probably first converted by the former, although he later became deeply devoted to Shên-hui.

One of the key statements in Chang Yen-yüan's *Li-tai ming-hua chi* (Eng. trans., *A Record of the Famous Painters of All the Dynasties*, in Acker, *Some T'ang and Pre-T'ang Texts on Chinese Painting*, 1954) declares that the revolution in Chinese landscape painting, which occurred sometime before 713, was initiated by Wu Tao-tzŭ and accomplished by the father and son Li Ssŭ-hsün and Li Chao-tao (q.v.). Wu Tao-tzŭ emancipated the symbolic landscape of the Six Dynasties tradition with his highly individual and expressive style and was the first great master to exploit the potential of the brush stroke for its evocative as well as its descriptive power, bestowing an illusion of realism on plastic forms and creating a new sense of movement and continuity in space in panoramic compositions. The two Li gave the spatial design of the picture a unified and atmospheric definition with a fully developed decorative and coloristic technique in the best tradition of Chan Tzŭ-ch'ien (ca. 550–620; IX, PL. 155). It is highly significant that Chu Ching-hsüan, author of *T'ang-ch'ao ming-hua-lu* (Eng. trans., *Celebrated Painters of the T'ang Dynasty*, by Soper, 1950), which was written less than a century after Wang Wei's death, emphasized that Wang Wei's brush style in paintings of pine trees, rocks, and landscapes reflected that of Wu Tao-tzŭ. Tu Mêng, who, with his brother, was probably the highest critical authority contemporary with Wang Wei, ranked the poet-painter above Li Ssŭ-hsün for his "profundity and subtlety" in pictorial expression. It appears that while the majority of Wang Wei's works were probably in color and comparable to paintings by Li Ssŭ-hsün in many other technical aspects as well, they also show the strong influence of the brush and ink methods of Wu Tao-tzŭ. His achievements certainly go beyond mere delicacy and lyricism — the only qualities granted to his works by later critics. This misconception became so deep-rooted and widespread that even Mi Fei (q.v.), at the end of the Northern Sung dynasty (960–1127), found it difficult to persuade collectors of Wang Wei's true worth.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Wang Wei made many major contributions to Chinese landscape painting. He is remembered first and foremost as the patriarch of Chinese "literati painting" (*wên-jên-hua*). Because he was the first great poet of this period as well as a great painter, he was historically in a position to raise painting to the social and intellectual level considered worthy of the endeavors of the literary elite. Moreover, being one of the keenest and most "impressionistic" observers of nature of all Chinese poets, he was able to project a strong poetic subjectivity into his pictorial art, transforming his landscapes into a mirror of the soul; indeed, it is exactly this that was to become the guiding principle of the *hsieh-i* (literally, the "writing of ideas") school of later Chinese painting.

Wang Wei was also one of the leading precursors of ink-monochrome painting in the middle T'ang period. His experiments with this medium in probing the inward sentiment of nature probably helped to give birth to a great new movement in the 9th and 10th centuries that was centered not in the capital but in the lower Yangtze Valley, the cradle of the southern tradition of Chinese landscape art.

Wang Wei was undoubtedly instrumental in establishing the *p'ing-yüan* ("level distance"), not only as a landscape type but also as an immensely important space concept that was one of the cornerstones in the foundation of later scholarly painting. His works were characterized by T'ang critics as *ch'ung-shêng* ("superimposed in depth") or *yu-shêng* ("solitude in depth"). Although these two terms have been interpreted as the equivalent of the "deep-distance" type of landscape painting, it is much more likely that they refer only to an atmospheric effect, probably achieved by an innovation in the ink technique.

Wang Wei definitely played a significant role in the development of the *p'o-mo* ("broken-ink") landscape. Contrary to the theories of most modern historians, there is strong evidence suggesting that this term originally connoted a brush technique, which in the case of Wang Wei was described by Chang Yen-yüan as "forceful and swift." This early meaning was gradually lost during the process of technical evolution until the term came to be understood by later critics as an ink method. This misunderstanding probably inspired the famous theory of Tung Ch'i-ch'ang, not without some historical justification, that Wang Wei was the first important landscapist who used graded washes as a substitute for the more traditional "hook and chop" strokes in the rendering of forms and textures.

As recorded in late T'ang literature, Wang Wei's works were mostly wall paintings, but only works on silk (and presumably also on paper) survived in the imperial collection in Emperor Hui-tsung's period (1101–26). The 126 items by Wang Wei listed in the *Hsüan-ho* catalogue include Buddhist paintings and scenes of fishing villages, but snowscapes are by far the commonest subjects. The important hand scroll known as "Snowy River" is extant in two versions (Kyoto, H. Ogawa Coll.; Honolulu, Acad. of Art; detail, *Clearing after Snowfall on Mountains and Rivers*, PL. 397), but there is little evidence of their common origin in the brushwork. These two paintings do demonstrate, however, two supposed characteristics of Wang Wei, namely, the concept of "level distance" — here in a beautiful composition that is probably too advanced to be dated to Wang Wei's period — and the special technique for snowscapes known as *liu-pai-(ti)-fa*, meaning literally "leaving-the-white (ground) method" (PLS. 397, 398). The *Snowy Stream* (PL. 397) from the *Hsüan-ho* collection of the Northern Sung period probably came much closer to the T'ang tradition, but with the dispersal of the large album *T'ang-Sung-Yüan-pao-hui-ch'a*, formerly in the Palace Museum in Peking, this painting was presumably lost.

Wang Wei's famous villa, built in 726–48 south of the capital at Wang-ch'uan, is known through a collection of great five-word poems and a painting devoted to its scenery. The painting was originally on the wall of the Ch'ing-yüan monastery and was then copied sometime before 809 on silk in a version that has since been known as the "Li Wei-kung Family version." This must have been the common source for two Northern Sung copies: the Kuo Chung-shu copy, which was the model for almost all later versions and was finally engraved on stone in 1617; and an anonymous landscape (PL. 397) in the Chicago Art Institute, identified by this author as a copy of *The Wang-ch'uan Villa* belonging to the tradition of Li Lung-mien (ca. 1049–1106).

SOURCES. Wang Yu-ch'êng chi (Collection [of the written works] of Wang Yu-ch'êng [Wang Wei]), compiled in 763 (ed. of Ma-sha of the Sung dynasty, in 10 chaps., Seikando Coll., Tokyo; collated ed. of Liu Hsü-ch'i of the Yüan dynasty, in 6 chaps.; ed. of Lü K'uei, in 6 chaps., 1504; ed. of 1555–56, in 18 chaps.; Ku Ko-chiu's annotation of the Liu Hsü-ch'i ed., in 6 chaps., 1590; ed. of 1736, annotated by Chao Tien-ch'êng, in 28 chaps. [including appendices of historical and critical notes drawn from 140 different sources, the most complete account of existing material], included in T. Tsuru, Ō-i shi sakuin ["Concordance of the poetical works of Wang Wei"], Kyoto, 1952; Ō-i [Wang Wei], poetical works annotated by H. Tsuru, Tokyo, 1958); Ch'ien Ch'i, Ch'ien K'ao-kung shih chi ("Collection of the poetry of Ch'ien Ch'i"), 8th cent.; Chang Yen-yüan, Li-tai ming-hua chi (A Record of the Famous Painters of All the Dynasties), 9th cent., in W. R. B. Acker, Some T'ang and Pre-T'ang Texts on Chinese Painting, Leiden, 1954, pp. 61–398; Liu Hsü (887–946) et al., Chiu t'ang shu ("Old history of the T'ang dynasty"), 945, Chap. 190; Chu Chin-hsüan, T'ang-ch'ao ming-hua-lu (Celebrated Painters of the T'ang Dynasty), 10th cent., trans. A. C. Soper, Arch. of the Chin. Art Soc. of Am., IV, 1950, p. 14; Sung Ch'i (998–1061), Ou-yang Hsiu (1007–72) et al., Hsin t'ang shu ("New history of the T'ang dynasty"), 1060, Chap. 202; Ch'in Kuan (1049–1101), Huai-hai chi ("Collection of the works of Ch'in Kuan"), Chap. 32; Chu I-tsun (1629–1700), Pu-shu-t'ing chi ("Collection of the works of Chu I-tsun"), Chap. 54; Pi Yüan, Kuan-chung shêng-chi t'u-chi ("Illustrated guide for historical sites in Shensi province"), 1776.

BIBLIOG. L. Binyon, A Landscape by Chao Mêng-fu in the British Museum, TP, N.S., VI, 1905, pp. 56–60; B. Laufer, The Wang ch'uan t'u, A Landscape of Wang Wei, OAZ, I, 1912–13, pp. 28–55; J. C. Ferguson, Wang Tch'ouan, OAZ, III, 1914–15, pp. 51–60; A. Waley, An Introduction to the Study of Chinese Painting, London, 1923, pp. 141–49; Liou Kin-ling, Wang Wei le poète, Paris, 1941; O. Kümeel, ThB; T. Kobayashi, O-i no shogai to geijutsu ("The life and art of Wang Wei"), Tokyo, 1944; T. Kobayashi, Chugoku kaigashi ronkō ("Studies of the history of Chinese painting"), Kyoto, 1947; Ch'ên I-hsin Wang Wei ti chên-chih shên-kuo ho ta ti shih-hsiang ("The political life and the thought of Wang Wei"), Wên-hsüeh i-ch'an hsüan-chi, II, 1956; O. Sirén, Chinese Painting: Leading Masters and Principles, Pt. 1, I, pp. 125–35, II, Annotated List of Paintings, p. 21, III, pls. 90–98, London, 1956; Chang Yin-nan and L. C. Walmsley, Poems by Wang Wei, Tokyo, 1958; Ch'ên I-hsin, Wang Wei p'ing-shên shih-chi ch'u-t'an ("Preliminary research for a history of the life of Wang Wei"), Wên-hsüeh i-ch'an hsüan-chi, Sup. 6, 1958; J. Hashimoto, Ō-i no kenkyū ("A study of Wang Wei"), Chūgoki bungaku shisō ronkō ("Studies of the thought of Chinese literati"), Tokyo, 1959; Ho Lo-chi, Wang Wei, Chinese Painters Series, Shanghai, 1959; S. Iritani, Wang Wei's Early Years, J. of Chin. Literature, XI, 1959; S. Iritani, Wang Wei's Middle Age, J. of Chin. Literature, XV, 1961; S. Shimada, Concerning the I-p'in Style of Painting, O. Art, N.S., 7, 1961–62, pp. 66–74; S. Iritani, Wang Wei's Old Age, J. of Chin. Literature, XVIII, 1963; M. Sullivani, Notes on Early Chinese Screen Painting, Artibus Asiae, XXCII, 3, 1965, pp. 242–45.

Wai-kam Ho

Illustrations: PLS. 397–398.

WATTEAU, JEAN ANTOINE. French painter (b. Valenciennes, Oct. 10, 1684; d. Nogent-sur-Marne, July 18, 1721). He was the second son of a well-to-do roof tiler, who was known for his violent and irascible character. Nothing is known of his mother except that her name was Michèle Lardenois. Since his elder brother had joined his father's business, Watteau's parents did not oppose his vocation as a painter, which became apparent very early. In 1699, when he was about fifteen, he was apprenticed at Valenciennes to J. A. Gérin, a painter of religious subjects.

Having left Valenciennes when his father refused to continue paying for his apprenticeship with Gérin, alone and penniless, Watteau made his way to Paris before 1702. He copied fashionable paintings for some obscure art dealers, and he frequented dealers in engravings in Rue St-Jacques, especially Pierre and Jean Mariette, who were patrons of Jacques Callot and admirers of Pierre Brebiette, François Collignon, and Stefano della Bella, all skillful draftsmen and engravers. The Mariettes probably introduced him to Jean's cousin, the painter Claude Gillot, known for his depiction of subjects from the Italian *commedia dell'arte*. Watteau worked with Gillot from 1703 to 1707 or 1708 and came strongly under the influence of his style. The two artists quarreled when Gillot became jealous of his pupil because of the preference shown him by clients, and Watteau left him.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

During his stay with Claude Audran III in 1708–09, Watteau studied and acquired a sound artistic back ground. Audran was the curator, or, as he was called, the "concierge" of the Medici Gallery in the Luxembourg Palace, which housed the largest and most remarkable collection of paintings by Rubens in France. Thus Watteau had occasion to meet the artists who came to admire and copy the works of the great Flemish painter. Moreover, Audran was primarily a great decorator, and as such he was employed by Louis XIV in the Château de la Muette; a drawing (Vienna, Albertina) proves that Watteau assisted him in his decorating work, mastering a quick, supple line and displaying light, sensitive brushwork in tracing arabesques of foliage, landscape elements, and figures on white and black grounds.

Before and after his brief return to Valenciennes in 1710, Watteau painted military subjects such as *Le Recrue* (Paris, Coll. Edmond de Rothschild) and *Alte* (formerly New York, Duveen Coll.), depicting the hard life of the soldier and the picturesque aspects of military campaigns. But he was soon to leave such subjects to his young colleague, Jean-Baptiste Pater, whom he brought back with him from Valenciennes and who worked with him for a short time. Watteau then went to live with his close friend Pierre Sirois, an art dealer of the Pont Notre-Dame area; his friendship was later extended also to Sirois's son-in-law, Gersaint, and several members of their family served as models for his paintings. Like all artists of his time, Watteau wished to perfect himself and to go to Rome; he never made the journey, however. On the recommendation of Charles de Lafosse and Antoine Coypel, he was made a member of the Académie on July 30, 1712, with the presentation of a painting entitled *Les Jaloux* (known from an engraving).

Nothing is known of Watteau between 1712 and 1715, with the exception of a record of a large painting representing Louis XIV decorating the Duc de Bourgogne with the Cordon Bleu, commissioned by a painter named Antoine Dieu, who provided the preparatory sketch.

During this period Watteau's style was influenced by his activity as a decorator in that he depended chiefly on the decorative aspects of landscapes and objects to frame his compositions and enclose his subjects. He attempted to break away from this formula in paintings such as the *Occupation selon l'âge* (Paris, Coll. Edmond de Rothschild), in which he depicts a scene with a bourgeois setting.

Watteau's stay with Pierre Crozat in 1715 was important both for his contacts with Crozat's artistic adviser, the painter Charles de Lafosse, and for his study of drawings by the old masters, especially those of the Venetian school, which the collector had brought back with him from Italy. This circle became Watteau's first real public, and his art began to attain popularity. His painting *La Conversation* (Paris, private coll.), painted in the spring of 1716, is noteworthy; the subject is modern and the painting probably represents Crozat's circle of friends, depicted amid the calm and harmonious landscape of the park of his residence at Montmorency. *La Finette* (Louvre) and *L'Indifférent* (PL. 406) are even more successful realizations of the same kind. He also attempted pictures with numerous figures such as *L'Accordée de Village* (London, Soane Mus.), the two paintings of *Le Bal Champêtre* (Paris, formerly Coll. Jules Strauss; Paris, Coll. Vicomte de Noailles), and the *Divertissements Champêtres* (London, Wallace Coll.). In these the influence of Rubens is strong.

In search of a quieter life, Watteau returned to the home of Sirois, and later went to live with Nicolas Vleughels at Rue du Cardinal-Lemoine; there, between 1716 and 1719, he painted his masterpieces. Watteau passed on some ideas for paintings and drawings to his friends, especially to Vleughels, suggesting compositional groups and poses to be imitated by them; thus he was able to satisfy an increasing demand for his work.

In 1717, at the specific invitation of the Académie, Watteau presented his *L'Embarquement pour l'Isle de Cythère* (Louvre), also known as *Fête Galante* (a title that was used throughout the 18th century for paintings of this kind). This masterpiece was preceded by a number of exploratory works, including the *Isle de Cythère* (Paris, private coll.), the *Réunion en Plein Air* (PL. 404), the *Assemblée dans un Parc* and *Faux-Pas* (both Louvre), and the *Récréation Galante* (Berlin, Staat. Mus.). Watteau painted a second version of *L'Embarquement pour Cythère* for the collector Jean de Jullienne; this replica (PL. 403) is somehow more modern, realistic, and precise. The artist probably executed it to conform with the collector's wishes, and, consequently, it is less moving than the original version.

L'Embarquement pour Cythère is subject of a controversy; C. de Tolnay (*Gaz. des B.A.*, Feb., 1955, pp. 91–102) and this author (since 1938) have held the opinion that the painting represents the pilgrims leaving for the Island of Cythera, but M. Levey (1961) has convincingly demonstrated that the couples may be returning from Cythera, and that this accounts for their apparent sadness.

Three paintings depicting courtly figures in rustic settings (PL. 399; others in London, Dulwich College; Potsdam, Palais-Royal), the *Gilles* (PL. 407), and the *Mezzetin* (PL. 400), *L'Amour au Théâtre Français* (PL. 401), and *L'Amour au Théâtre Italien* (Berlin, Staat. Mus.) are Watteau's most important and successful works and can be dated between 1716 and 1720. The *Gilles* has long puzzled art historians. This author has suggested (*Arts*, Dec. 7, 1950) that it represents the comedian Belloni, a famous interpreter of Pierrot, who, on retiring from the stage in 1718, opened a café in Rue Quincampoix at the corner of Rue Aubry-le-Boucher, where he hung his portrait as Pierrot in place of a signboard. Furthermore, before 1718 Belloni had opened another café in Rue des Petits-Champs where a ceiling painting represented the Italian actors and included his figure; this work may be related to *Les Comediens Italiens* (PL. 402). Panofsky, however, holds a rather different point of view (*Gaz. des B.A.*, May/June, 1952, pp. 319–40).

In 1719 Watteau went to London; Gersaint (1744) relates that he hoped to make his fortune there, but according to Walpole, he went to see Doctor Richard Mead of the Royal Society, for whom he painted *L'Amour paisible* (formerly New York, Balback Coll.) and the above-mentioned *Les Comédiens Italiens*. His stay was brief but had a great influence on the colony of French painters in London, some members of which, such as Philippe Mercier, completed his works and continued, long after Watteau's death, the painting style created by him.

On his return from London, Watteau suggested to Gersaint that he paint a signboard (PL. 404; IV, PL. 29) for the dealer's shop at Pont Notre-Dame; according to Gersaint, the artist executed it in eight days, working on it only in the mornings "to exercise his fingers." Gersaint's account should probably not be taken too literally, as his memory may have become faulty by the time he wrote it in 1744. However, one may assume that this masterpiece was painted rapidly and with enthusiasm. Contrary to what has been said, it does not symbolize a condemnation of the old style, represented by the stowing away of the so-called portrait of Louis XIV, but it is, nevertheless, a glorification of the modern style of painting which Watteau's genius helped to create.

Watteau had a delicate constitution and often was ill. Although of a retiring nature, he was always surrounded by a few good friends; little is known of his somewhat mysterious character except that he was contemptuous of money, discreet in his relationships with women, and passionately interested in his art. He died in 1721 in Nogent-sur-Marne, at the home of Philippe Le Fèvre, formerly "intendant" of Louis XIV's *menus plaisirs*.

The chronology of Watteau's works remains conjectural if one is to depend on the sources alone. No painting of his is either signed or dated. Only *Le Voyage à l'Isle de Cythère*, known as *L'Embarquement pour Cythère*, is documented. Some paintings are known to have been executed while Watteau was staying with Sirois, but the artist spent two different periods with him; others were painted at the house of Crozat but do not necessarily date from the time Watteau was staying there, since, although they quarreled for a time, the two are known to have resumed their close friendship. However, stylistic evidence, in addition to the scant information provided by the sources, leads to some positive conclusions.

Watteau was active as a painter from 1704 to 1721, executing

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

about 300 paintings in all; these were copied in engravings executed under the direction of Jean de Jullienne between 1721 and 1735. For various reasons a number of paintings were not engraved.

It is impossible to identify works by Watteau prior to the years about 1703, when he was staying with Gillot; the hypothesis of very early works proposed by Jacques Mathey (*B. de la Soc. de l'Histoire de l'Art Français*, 1939, pp. 150–60) is to be considered with reservations, since Watteau was not the only artist who painted in the style which he is known by, as later was also true of both Fragonard and Chardin.

The works executed before 1703 are few; three are known from engravings: *La Danse Champêtre*, *Le Repas de Campagne*, and *Le Départ pour les Isles*. This last is curiously analogous to the Abbé Prévost's *Manon Lescaut*, in its reference to the deportation of prostitutes, a frequent occurrence at the beginning of the 18th century, and a subject often treated in popular engravings.

Watteau's works dating from his stay with Gillot (1703–1707/08) are better known; almost all have been copied in engravings. Their subjects are derived mainly from the Italian *commedia dell'arte* and its French counterpart; some depict minor craftsmen or Parisian peddlers such as *La Marmotte* (PL. 400) and *Le Petit Savoyard* (lost). There has been a tendency to give a later dating to the *commedia dell'arte* scenes, since the Théâtre de la Foire had been closed since 1697, and Watteau would not have been able to see the company perform. However, all the society theaters presented the *commedia dell'arte* at that time. From 1708 onward Watteau's paintings can be classified in cycles and are more easily datable.

Watteau's art is, so to speak, isolated in its period. During the austere rule of the Marquise de Maintenon, religious and historical painting dominated French art. Courtly subjects were disguised as complicated allegories. During this period, Watteau worked as a decorator and painted small genre scenes. It was only after Louis XIV's death that he could give full expression to his art; for this reason it is incorrect to consider him a 17th-century painter. He was really the painter of the Regency.

Watteau's works have been often misunderstood. Classified as a painter of "fêtes galantes," who took joy and love as his subjects, he was successful and much imitated. His art is quite the opposite, however; the subjects of his paintings are "galants" insofar as they are pairs of lovers, but they are depicted facing life's weighty problems with touching anxiety. It is perhaps the greatest proof of Watteau's genius that the viewer of his paintings is able to penetrate so intimately into the world of his sensitivity through commonplace subjects.

The Goncourt brothers said of Watteau: "He has brought under the influence of his style, his taste and his vision, all the painting of the 18th century." This is evident from a study of his immediate disciples, many of whom died as much as 30 years after him. In England, Germany, Portugal, and Spain, Watteau's style survived until 1770, especially in decorative painting. Momentarily eclipsed by neoclassic painting, Watteau's art returned to favor as a result of the French Revolution, during which works by him, or in his manner, were confiscated and distributed to museums. Toward 1810, collectors and dealers were once more buying his works. These were also sought after during the romantic period (B. Hédouin, *Mosaïque*, Paris, 1856); others such as Lacaze formed their collections. In 1840 Victor Hugo wrote on the subject of Watteau (J. B. Barrère, *La Fantaisie de V. Hugo*, II, Paris, 1949, p. 374), and the Goncourts published articles on Watteau (*Watteau, étude*, Paris, 1860). Baudelaire evoked him in his poem, "Les Phares," in 1855 (Proust recited the poem in 1900 at the Louvre before *L'Embarquement*) and Verlaine paid homage to him in 1867, as had a number of lesser writers from the 1840s onward, a period important for his influence on contemporary art.

Certain aspects of Watteau and his art have only recently come to light. Many of his drawings (PL. 405; IV, PL. 279) were scattered and are known only from the album of engravings by J. de Jullienne (*Figures de différents Caractères, de Paysages et d'Etudes*, 2 vols., Paris, 1726–28). K. T. Parker's book *The Drawings of Antoine Watteau* (London, 1931) was a pioneer work on this subject and was followed by the two volumes on Watteau's drawings by Parker and J. Mathey (1957). Jean Levy (BM, July, 1954, pp. 197–202) has identified *Le Lorgneur*, mentioned in sources, with a painting in a private collection in Paris; another article by the same author is dedicated to Watteau and François Lemoyne (*Gaz. des B.A.*, Dec., 1958, pp. 347–54).

A. P. de Mirimonde has studied the statues and emblems in Watteau's *œuvre* (*Revue du Louvre*, XII, 1962, No. 1, pp. 11–20) and also the musical subjects (*Gaz. des B.A.*, LVIII, Nov., 1961, pp. 249–88, and *B. de la Soc. d'Histoire de l'Art Français*, 1962, pp. 47–53). He demonstrates how Watteau's choice of statues to be depicted was by no means haphazard and how they are intimately linked with the subjects of his paintings. On the basis of this, he suggests changing the titles of a number of pictures. Similarly, he analyzes the instruments depicted in the paintings of musical subjects.

SOURCES: A. de la Roque, Watteau, Mercure de France, 1721, pp. 81–83; J. de Jullienne, Abrégé de la vie d'Antoine Watteau, Paris, 1736; E.-F. Gersaint, Note sur Watteau, Paris, 1744; Comte de Caylus, Vie d'Antoine Watteau lué à l'Académie en 1748, in P. Champion, Notes critiques sur les vies anciennes d'A. Watteau, Paris, 1921.

BIBLIOG. E. de Goncourt, Catalogue de l'œuvre peint, dessiné et gravé d'Antoine Watteau, Paris, 1875; E. H. Zimmermann, Watteau, Stuttgart, Leipzig, 1912; E. Dacier, A. Vuaflart, Jean de Jullienne et les graveurs de Watteau au XVIIIe siècle, 4 vols., Paris, 1922–29; L. Dimier, Les peintres du XVIIIe siècle, I, Paris, 1928; P. Jamot, L'Embarquement pour Cythère du Musee du Louvre, Brussels, 1937; E. Michel, H. De Vallee, and Mme Aulanier, L'Embarquement pour l'Île de Cythère, Paris, 1939; H. Adhémar, Watteau, sa vie, son œuvre, précédé de l'univers de Watteau, par R. Huyghe, Paris, 1950; K. T. Parker and J. Mathey, Les dessins de Watteau, 2 vols., Paris, 1957; M. Levey, The Real Theme of Watteau's Embarkation for Cythera, BM, CIII, 1961, pp. 180–85; M. Gauthier, Antoine Watteau, Paris, 1962; J. Cailleux, Décoration par A. Watteau pour l'Hôtel de Naintel, BM, 1961, pp. 121–25; J. Cailleux, La Partie Quarrée, BM, 1962, pp. 1–5.

Hélène ADHÉMAR

Illustrations: PLS. 399–407.

WEAPONS. See ARMS AND ARMOR.

WEAVING. See BASKETRY; TAPESTRY AND CARPETS; TECHNIQUES; TEXTILES, EMBROIDERY, AND LACE.

WEBER, MAX. American painter (b. Białystok, Poland, Apr. 18, 1881; d. Great Neck, N.Y., Oct. 4, 1961). Brought up in the religious culture of Russian Judaism, Max Weber came with his parents to the United States in 1891, settling in Brooklyn, N.Y. After public school he studied at Pratt Institute from 1898 to 1900; he then taught in Virginia and in Duluth, Minn., until 1905, when he sailed for France. In Paris he studied under Jean Paul Laurens at the Académie Julian (1905–06) and at the Académie de la Grande-Chaumière and Académie Colarossi (1906–07). In 1906, 1907, and 1908 came long visits to Spain, Italy, Belgium, and Holland. From 1906 he was in close contact with the modern movements in Paris and with their leaders, becoming an intimate friend of Henri Rousseau. Weber helped to organize the famous Matisse class in 1908 (see IX, col. 588).

Returning to New York in January, 1909, Weber became one of the first American pioneers of modernism. His early work was allied to Fauvism, but in 1912 he began experiments in abstraction, notably paintings based on New York (*New York*, 1912, Santa Barbara, Calif., Wright Ludington Coll.); *Rush Hour, New York*, 1915; *New York at Night*, 1915, New York, Paul Rosenberg and Company. Weber interpreted the dynamism of abstraction in a style related to both cubism and futurism and also to the chromatic abstract expressionism of Kandinsky. Several small sculptures of 1915 (e.g., *Spiral Rhythm*, Mr. and Mrs. Aaron Davis Coll.) and 1917 were among the earliest purely abstract sculptures in modern art. In these years Weber was one of the first American exponents of abstraction, and the most inventive. His one-man shows in 1909, 1911, and

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

1912 were violently attacked by the critics, and for years he suffered from hostility and neglect.

In 1917 began a fundamental change to religious and poetic subjects expressive of his Jewish heritage. Weber's vision became more representational, his style expressionist (*Invocation*, 1919). After 1919 abstraction was abandoned for two decades. In this middle period his paintings were idyllic figure compositions (*Eight Figures*, 1927, New Rochelle, N.Y., Mrs. Nathan J. Miller Coll.; *Tranquillity*, 1930, New York, Downtown Gall.), mystical and contemplative in mood, and some landscapes and still lifes.

With the late 1930s Weber's subjects widened to include more contemporary content (*At the Mill*, 1939, Newark, N.J., Newark Mus.; *The Haulers*, 1939; *Refugees*, 1939; *The Builder*, 1940; *The Workers*, 1941; *The Toilers*, 1942) and greater imaginative fantasy. There was a trend to semiabstraction, which, however, never reached pure abstraction. His latest work was marked by growing plastic freedom and the use of line as a leading element (*Chassidic Dance*, 1940, New York, Edith and Milton Lowenthal Coll.; *Woman Carrying Picture*, I, PL. 124). His color developed from the grays of his middle period to a new richness and intensity.

Weber's works are in most American museums, one of the largest groups being in the Whitney Museum of American Art, New York (including *Summer*, 1911; *Chinese Restaurant*, 1915; *Listening*, 1930; *The Red Cap*, 1930; *Gaillardias*, 1933; and *Adoration of the Moon*, 1944).

BIBLIOG. H. Cahill, Max Weber, New York, 1930; Museum of Modern Art, Max Weber Retrospective Exhibition 1907–30, New York, 1930; American Artists Group, Max Weber, New York, 1945; L. Goodrich, Max Weber, New York, 1949.

Lloyd GOODRICH

WÊN CHÊNG-MING. Chinese calligrapher, painter, essayist, and poet (b. 1470; d. 1559), originally known as Wên Pi — the name with which he signed his works until 1518, when he adopted Chêng-ming as his official name and acquired the surname Chêng-chung — and also known as Master Hêng-shan, a name derived from the site of his family's original homestead near Hengyang (formerly Henchow, Hunan). Wên Chêng-ming is ranked with T'ang Yin (1470–1524), Ch'in Ying (first half of 16th cent.), and Shen Chou as one of the "Four Great Masters of the Ming Period."

His father, a prefect and a learned and severe moralist, was also a patron of literature and other cultural activities, so that Wên was exposed in his youth to many of the gifted and scholarly men of the time. His great-grandfather had abandoned the military service that was the family heritage in order to concentrate on Confucian scholarship, and Wên Chêng-ming grew up with the discipline and dignity of a strict Confucianist, dedicated to introspection, humility, perseverance, and thoroughness. He led a quiet, scholarly life, interrupted only when at the age of fifty-four he was appointed by the emperor to the bureau in charge of editing historical documents and given the title of *tai-chao* in the Han-li Academy. He was uncomfortable in public life, however, and retired from his post after three years, to produce in the thirty-some years that remained of his life his best work. During this time he became a leading figure in the arts and letters and the patron, friend, and teacher of many young artists, among them two of his own sons, both of whom also became well-known artists and connoisseurs, and a number of his grandchildren (the artistic tradition of the Wên family continued, in fact, down to the 18th century, producing more than twenty painters). The great Ming literati painter Tung Ch'i-ch'ang (q.v.), although born too late to have known Wên Chên-ming personally, also owes an obvious debt to Wên.

Wên Chêng-ming's art training began in early childhood. He subscribed to three scholars in particular as his masters — Wu K'uan in literature, Li Yin-chêng in calligraphy, and Shên Chou in painting. Wên's carefully written essays became the model for younger students, and his poetry has the repose of late T'ang poetry. In calligraphy he mastered all four major styles — seal script, chancery script, regular script, and running script (see CALLIGRAPHY AND EPIGRAPHY). In his younger years Wên Chêng-ming spent endless hours copying the old masters until Li Yin-Chêng persuaded him to abandon copying and to develop instead a style of his own. In doing so he achieved a grace and clarity equal to that of the calligraphy of the Western Chin dynasty (265–316).

He drew inspiration for his painting not only from his immediate teachers but also from the "Four Great Masters of Yüan" — Huang Kung-wang (1269–1354), Wu Chên (1280–1354), Ni Tsan (q.v.; 1301–74), and Wang Mêng (q.v.; ca. 1308–85) — from whom he derived some of the spirit of the Sung painters Tung Yüan (active 947–70) and Chü-jan (active about 975). His early detailed works and his painting in mineral pigments also reveal the influences of such Sung painters as Kuo Hsi (ca. 1025–ca. 1090; IX, PL. 26) and Chao Po-chü (1127–62; VII, PL. 257). In general, the painting of Wên Chêng-ming is not tied to a single style; his interpretation of the technique and essential spirit of the many old paintings that he studied is invariably detached, natural, and individual. He was always ready, however, to acknowledge his devotion to the old master Chao Mêng-fu (q.v.; III, PLS. 197–200), the ablest technician of the Yüan period. Chao Mêng-fu's intellectual efforts stimulated Wên Chêng-ming to become himself a well-rounded artist — essayist and poet, calligrapher and painter, scholar and connoisseur. Although neither was, strictly speaking, a professional painter, both Wên Chêng-ming and his Yüan master took the art of painting seriously, practicing it with diligence and sincerity.

Wên Chêng-ming can be said to have two styles, one detailed and deliberate, the other spontaneous. Both styles were executed with a varied technique. Sometimes, particularly in the rocks and slopes of such landscapes as the *Old Woods and Chilly Brook* (PL. 408), he used a dry brush to achieve the effect of *p'o-mo* ("broken ink," in wiping or twisting strokes); at other times, as in a fan in the Honolulu Academy of Arts (PL. 408), he employed a very wet brush to articulate lines and dots. Although Wên Chêng-ming was at his best in ink paintings, he also frequently painted with mineral pigments. He used a characteristic "pepper-dot" technique to depict trees with a distinctive and unmistakable movement (PL. 409). Besides landscapes he painted equally superb junipers (III, PL. 283), bamboo, orchids (PL. 408), chrysanthemums, and garden scenes, often copied from their actual settings and sometimes including figures (III, PL. 282).

In later life Wên Chêng-ming worked more and more in a spontaneous, summary manner, freeing himself from the meticulous detail of his early painting. Those paintings that represent him at his best are mostly hand scrolls, still little known to the public at large. They have a suggestive force that goes beyond realistic representation; their complex and taut inner power stands out as an expression of the artist's own genius.

Wên Chêng-ming's publication of collected examples of calligraphy was an important contribution to art. Engraved on stone and then reproduced in rubbings, these calligraphic specimens were published in two parts. The first, entitled *T'in yün kuan tieh*, contains rare examples by old masters; the second part, *Hsiao t'in yün kuan tieh*, comprises examples by great calligraphers contemporary with Wên Chêng-ming. These rubbings deserve particular attention because of their high quality. Wên Chêng-ming's collection and a similar one by Tung Ch'i-ch'ang are the best compilations of calligraphy that were assembled during the Ming period.

Another contribution by Wên was his revival of the art of seal cutting. The carving of seals had previously been done chiefly by unknown artists. Wên Chêng-ming's mastery of the art, however, gave it a new prestige, and seal cutters began to observe more carefully the rules of composition, style, and technique. Although seal cutting was only a secondary artistic pursuit for Wên Chêng-ming, his son Wên P'êng (San-ch'iao) became dedicated to the art. Wên's revival of the ancient art of seals, with their intricate and sensitive carving and new sense of space and design, was to have an important influence upon later Chinese painting.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

MAJOR WORKS ATTRIBUTED TO WÊN CHÊNG-MING. *Autumn Landscape in the Style of Ni Tsan*, signed hand scroll (Chicago, Art Inst.). – Bamboo and chrysanthemum by a garden stone, 1512 (Osaka, Municipal Mus., Coll. Abe). – *Chrysanthemums and Pine Trees*, signed short hand scroll, 1541 (Washington, Freer Gall.). – A gully in the mountains; two men on the road by the torrent, 1520 (Paris, Mus. Guimet). – Landscape with a waterfall, 1531 (Los Angeles, County Mus.). – *River Scenery in Rain*, fan painting (Met. Mus.). – *River Valley with Homesteads and Fishermen, After Wu Chên*, signed long hand scroll, 1540 (Br. Mus.). – The seven junipers, part of a scroll, 1532 (Honolulu, Acad. of Arts). – A slender bamboo and two bare trees growing by a garden rock, 1533 (Stockholm, Östasiatiska Mus.).

SOURCES. Ch'ien Ku (1508–74), Wu chün hua hsü chi ("Supplementary collection [of the written work] of Wên Chêng-ming from Kiangsu"); Wên Chao-chih (16th cent.), Wen shih wu chia chi ("Collection [of the written work] of five of the Wên family"); Wên tai chao t'i pa ("Collection of the colophons of 'tai-chao' Wên Chêng-ming"); Wên Han (17th cent.), Wên shih tsu p'u hsü chi ("Supplementary collection of the genealogy of the Wên family"); Wên Hsiang-mêng (17th cent.), Fu t'ien chi ("Collection [of the written work] of Fu T'ien [Wên Chêng-ming]"); Hsiang Tsu-ching (1525–90), Chin pao tsa lu ("Valuable miscellanea"); San ts'ai t'u hui ("Collected illustrations of three masters"), Peking, 1609; Wên Hsiang-mêng (17th cent.), Ku su ming hsien hsiao chi ("A short account of the famous sages of Su-chou"); Chang T'ing-yü (1672–1755) et al., Ming shih ("History of the Ming dynasty: 1368–1643"); Ku chin t'u shu chi ch'eng ("Encyclopedia of ancient and modern books and pictures"), Peking, 1725, 2d ed. Shanghai, 1884; Wu chiang chih ("Local history of Wu [Kiangsu] and Chiang [Kiangsi]"); Yüan ming shih lei ch'ao ("Documents on the Yuan and Ming dynasties").

BIBLIOG. Chung kuo shu pa ta chia wên chêng ming ("The great Chinese calligrapher Wên Chêng-ming"), Ku kung chou k'ang (Palace Mus. Weekly), 288–300; Fang I et al., Chung kuo jen ming ta tz'u tien ("Great Chinese biographical dictionary"), Shanghai, 1921, 2d ed., 1931; A. Waley, Index of Chinese Artists, London, 1922, p. 96; O. Sirén, A History of Later Chinese Painting, London, 1938, I, pp. 240–42; V. Contag, Wang Chi-chuan, Ming ch'ing hua chia yin chien: Maler- und Sammler-Stempel, Shanghai, 1940; O. Kümmel, ThB, XXXV, 1942, p. 368; Tsêng Yu-ho, The 'Seven Junipers' of Wên Chêng-ming, Arch. of the Chin. Art Soc. of Am., VIII, 1954, pp. 22–30; O. Sirén, Chinese Painting: Leading Masters and Principles, II, London, New York, 1956–58, IV, pp. 172–92, VI, pls. 199–212, VII, annotated list of paintings, pp. 257–63; Chang An-chih, Wên Chêng-ming, Shanghai, 1958; M. Loehr, A Landscape Attributed to Wên Chêng-ming, Artibus Asiae, XXII, 1959, pp. 143–52; A. Giuganino, La pittura cinese, Rome, 1959, I, pp. 178–80, II, pls. 322–35; Nat. Palace Mus. and Nat. Central Mus., Ku kung ming hua san pai chung ("Three hundred famous paintings in the Palace Mus."), Taipei, 1959, V, pls. 235–40; J. P. Dubosc, Wên Tchêng-ming et son Ecole, Lausanne, 1961; Ming Wên Chêng-ming mo chi hsuan ("The collected ink paintings of Wên Chêng-ming of the Ming dynasty"), Shanghai, 1964; Ming Wên Chêng-ming shu ch'ih pi fu (The Red Cliff *fu* of Wên Chêng-ming of the Ming dynasty), Shanghai, 1964; S. E. Lee, Literati and Professionals: Four Ming Painters, B. of the Cleve. Mus., 1, 1966.

Yu-ho TSÊNG

Illustrations: PLS. 408–410.

WEST, BENJAMIN. American painter (b. Springfield, Pa., Oct. 10, 1738; d. London, Mar. 11, 1820). West's early portraits in colonial America, largely the product of self-training, encouraged local merchants to send him in 1759 to Europe. In Italy this intelligent and outspoken Yankee gained the friendship of a group of artists and connoisseurs that included Anton Raphael Mengs, Gavin Hamilton, and Johann Joachim Winckelmann. In 1765 in England Matthew Pratt's painting *The American School* (I, PL. 97) showed West in his studio surrounded by the first of many young Americans who came to him for advice and instruction, including Pratt himself, Charles Willson Peale, Abraham Delanoy, Jr., Gilbert Stuart, William Dunlap, Ralph Earl, and John Trumbull. West's rise to fame was meteoric: at thirty he played a leading part in the foundation of the Royal Academy of Arts and at thirty-four became historical painter to King George III. He painted neoclassical compositions fifteen or twenty years before Jacques Louis David did and challenged convention by portraying a recent historical event in contemporary costume. Commissions multiplied for those large and complex canvases on historical, mythological, and religious themes which were then considered the highest form of art. At fifty-four West became president of the Royal Academy of Arts and held that position with only one year's interruption until his death at eighty-two. His later years were troubled by declining popularity, sharp criticism from contemporaries, financial difficulties because of the King's illness, and the jealousy of his colleagues in the Academy.

West's neoclassical style can be studied in *Agrippina with the Ashes of Germanicus* (1767; New Haven, Yale Univ. Art Gall.). One version (ca. 1770) of his *Death of General Wolfe*, of which he made several replicas, is in Ottawa, Canada (Nat. Gall.). Typical of his religious scenes is *Christ Rejected* (1814; Philadelphia, Pennsylvania Acad. of Fine Arts). A study for *Death on the Pale Horse* (1802; Philadelphia, Mus. of Art) anticipates by several years the turbulence of the French romantic painters; and a portrait, *Dr. Enoch Edwards* (1795; Amherst, Mass., Amherst College), and a landscape with figures, *Woodcutters in Windsor Great Park* (1795; Indianapolis, John Herron Art Mus.), have a breadth of handling and a sense of form and atmosphere seldom seen in his more ambitious works and prove his excellence in fields of painting that he considered inferior. Important works by West are in the Metropolitan Museum of Art in New York and in the National Gallery, Washington (I, PL. 104). Although West broke new ground for art, his effort to approach Titian and the Carraccis was usually defeated by lack of imagination, a meticulous but cold manner of drawing, a too literal reliance on the pictorial schemes of the old masters, a cautious and rather metallic coloring, and a chiaroscuro that achieved neither the force nor the unity of his admired models.

BIBLIOG. J. Galt, The Life, Studies and Works of Benjamin West, Esq., London, 1820 (unreliable in details); H. Marceau and F. Kimball, Benjamin West, Philadelphia, 1938 (an essay-catalogue); J. T. Flexner, The American School in London, BMMA, Oct., 1948, pp. 64–72; J. T. Flexner, The Light of Distant Skies, New York, 1954; G. Evans, Benjamin West and the Taste of His Times, 1959; A. T. Gardner, West's Legacy, BMMA, Mar., 1966, pp. 225–36.

Oliver W. LARKIN

WEYDEN, ROGIER VAN DER. Few facts are known about the life of the painter. He was probably born in 1399 or 1400, but his birthplace has never been established. Documentary evidence shows that in 1426 he married Elizabeth Goffaert of Brussels. His four children all seem to have been born there; among them there are records of Peter (1437–1510), a painter, and Jan (1438–68), a goldsmith. Another son, Cornelius, studied at the University of Louvain before entering the Carthusian monastery of Hérinnes. Rogier, who had probably been living in Brussels since 1426, if not earlier, became "Portraiteur de Stadt van Brussels" (official painter of that city) in 1435. He undertook a pilgrimage to Rome in the Holy Year of 1450 and was received by several Italian princes who ordered paintings from him. On June 18, 1464, he was buried in the Cathedral of St-Michel in Brussels.

The fame of Rogier van der Weyden and, in fact, even his very existence have long been confused with certain other painters of the period. Although he was one of the best-known artists of his day, his fame later died out to the point that J. D. Passavant did not even know his name when, in 1841 (in *Kunstblatt*, Stuttgart, Tübingen; Fr. trans. in *Messager des sciences historiques de Belgique*, pp. 313–16), he attributed several works by Rogier van der Weyden to a mysterious Roger de Bruges. Alfred Michiels, in 1845, introduced the name of Rogier van der Weyden in a general work, *L'Histoire de la peinture flammande et hollandaise* (Brussels, II, pp. 186–94, 210–13); but the true and definitive rediscovery of this remarkable master occurred only with the publication, in 1856, of the excellent monograph by the archivist Alphonse Wauters. On the basis of the fragmentary information at his disposal, Wauters was inclined to conclude that Brussels was the artist's birthplace, based on the fact that he was the official painter of that city from 1435. Also in 1856, however, another archivist, Genard, raised the first doubts on this subject with his discovery in the records of the painters' guild at Tournai of a certain "Rogelet de la Pasture, natif de Tournai," who was apprenticed to Robert Campin (q.v.) on Mar. 5, 1427, and became a master painter in 1432. The seeming coincidence in the dates of Rogier van der Weyden of Brussels and Rogelet (or Roger) de la Pasture of Tournai prompted Genard to conclude that these two painters

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

were the same person. This tempting conclusion, although oversimple and too hasty, was also accepted by Pinchart (1867). Neither author seems to have noticed the inconsistency involved in considering Rogier van der Weyden as Campin's apprentice in March, 1427, since Rogier was already a well-known painter on Nov. 17, 1426, when the magistrate of Tournai paid him the special honor of presenting him with eight casks or lots of wine.

The result of this unfortunate confusion was to prevent the grouping of all Rogier's works under his name. All those which might have been executed in his youth — that is to say, before 1426–27 — were attributed to an anonymous painter called the Master of Mérode, who was so designated because his most important and characteristic work, a triptych with an Annunciation, was preserved by the Mérode family at Westerlo until 1957; it was subsequently acquired by the Metropolitan Museum of New York for The Cloisters. In 1849, at Aachen, three panels from an enormous work, including a Virgin and Child, a St. Veronica, and a Trinity, were sold by Ignace van Houthem to the Städelsches Kunstinstitut of Frankfurt am Main. The previous owner had passed on the oral tradition of their provenance from a supposed abbey of Flémalle, near Liège. Von Tschudi (1898) consequently attributed them to the Master of Flémalle and grouped around this nucleus several paintings, including those assigned to the now discarded Master of Mérode, thus creating an impressive catalogue of works for this new anonymous artist.

In 1902 Georges Hulin de Loo (*Catalogue critique de l'Exposition des Primitifs à Bruges*, Ghent) suggested that the Master of Flémalle should be identified with Jacques Daret, a fellow apprentice of Rogelet de la Pasture in Robert Campin's studio, and later, in 1909, with Campin himself. [The Metropolitan Museum in New York, present owner of the Mérode Altarpiece (VI, PL. 66), identifies the Master of Flémalle with Campin.] These proposals, however, have not withstood serious criticism. In any case, the designation Master of Flémalle is a misnomer, since an abbey of Flémalle seems never to have existed. Art historians (e.g., Friedländer, 1924), however, continued to use this appellation to designate a specific artistic personality clearly distinct from Rogier van der Weyden.

The origin of these difficulties and complications lies in the juxtaposition and forced overlapping of the archival sources pertaining to the famous Rogier van der Weyden and the obscure Rogelet de la Pasture. Ingenious efforts have been made to "fuse" these two groups of documents at all costs, in order to "confuse" the two masters, although some scholars were from the first opposed to accepting the two as one and the same artist. Thus, as early as 1898, E. Firmenich-Richartz (ZfbK, X, 1, pp. 1–12) firmly opposed Von Tschudi's thesis. Before long, other reputable scholars defended the unity of Rogier van der Weyden's production, refusing to attribute his youthful works to the anonymous and elusive Master of Flémalle. As early as 1928, but especially in 1931, E. Renders brought about the collapse of the shaky scaffolding of the Master of Flémalle-Jacques Daret-Robert Campin theory; the main lines of his reasoning and conclusions were subsequently considered by Friedländer (1932, 1937).

At the 1953 Congress of Kortryk (Courtrai) the author presented decisive evidence of the unity of Rogier's *œuvre* based on an exceptionally faithful copy of the central panel of the Mérode Altarpiece in a private collection in Genoa. In 1857 the copy — then the property of Abraham Darby — had been lent for an exhibition of art treasures in Manchester, and at that time William Burger (*Trésors d'art exposés à Manchester en 1857*, Paris, p. 158) attributed the panel to Rogier van der Weyden. Since then, a cleaning of the Genoa copy has disclosed Rogier's signature in the lower right-hand corner. This signature is clearly by the hand of the late-16th-century copyist who executed the painting itself. Does the presence of this signature imply that the original Mérode Altarpiece, now in New York, once bore Rogier van der Weyden's name? In any case, it shows that before 1857 there was no doubt that the triptych was by Rogier. But more important, this new evidence removes from the *œuvre* of the Master of Flémalle the altarpiece that has always been considered his principal and most characteristic work.

Even a partial reconstruction of Rogier van der Weyden's *œuvre* encounters considerable difficulty because none of his works are signed and because numerous panels have been attributed alternately to him and to the Master of Flémalle. The author believes that the existence of the Master of Flémalle can now definitely be ruled out and that all the works which have been assigned to him (and which bear the stamp of a still inexperienced artist) are, rather, the youthful works of Rogier van der Weyden; everywhere they reveal — despite the inexperience they betray — Rogier's drawing, color, composition, and spirit. Furthermore, it is implausible that the Master of Flémalle, supposedly born in Tournai and active there, would have represented in his altarpieces so many Brabantine edifices, the presence of which clearly attests to the hand of Rogier van der Weyden. Is it not also surprising that several later painters should have combined in a single work copies of panels attributed to the Master of Flémalle and others most certainly by Rogier? For instance, the *Descent from the Cross* in Liverpool (Walker Art Gall.) and the Edelheer Triptych of 1443 in Louvain (Church of St-Pierre) take their central motif from Rogier van der Weyden's masterpiece of the same subject in the Prado, while the secondary subjects are those of the previously discussed panels attributed to the Master of Flémalle in Frankfurt am Main (Städelsches Kunstinst.). Finally, even if one were to admit the activity of the Master of Flémalle, it would be difficult to explain why all his paintings betray a youthful hand whereas not one youthful work by Rogier van der Weyden could be recognized. As for the absence of signed paintings by Rogier, documentary evidence has fortunately made possible the recognition of some basic works and hence the reconstruction of his entire *œuvre* so far as it survives.

Reconstructing the *œuvre* on this basis, it may then be said that during his youth — that is, until about 1430 — the master modeled his style, with its realistic tendencies, on that of his celebrated elder, Jan van Eyck. Nevertheless, Rogier's style is already recognizable in the more emphatic drawing and in the more thickly applied color. From this time onward, his personality reveals itself particularly by a predilection for rather cold coloring, while Van Eyck's palette is characterized by distinctly warm shades. It should also be noted that — contrary to his later preferences — Rogier van der Weyden's youthful production deals exclusively with the tenderest and happiest scenes from the Virgin's life. This is his euphoric period. Inexperience, awkwardness, and archaism are combined in the *Madonna in the Meadow* (ca. 1420) in Berlin (Staat. Mus., Gemäldegalerie). The figure, the cloak, and especially the hair of the Virgin show a scarcely promising stiffness, whereas the small flowers and innumerable small plants — although spread out in a purely decorative manner without any attempt at perspective — betray the expert hand of a practiced miniaturist. In the *Marriage of the Virgin* (ca. 1425; V, PL. 279) the duality of the scenes (the marriage at the right, the flowering of the staff of St. Joseph at the left) and the multiplication of figures detract from the beauty of the composition. The principal scene is shown beneath the uncompleted porch of the Church of Notre-Dame-du-Sablon in Brussels; this historical accuracy indicates that the artist of the panel was already resident in that city, where he was to marry the following year. Between 1425 and 1430 the artist painted at least three Annunciations: successively, the example in the Prado and that in Brussels (Mus. Royaux des B. A.), and the central panel of the Mérode triptych, which has been discussed above. The master's style became progressively softer and acquired breadth. Three other works also belong to this first period and should be dated about 1430. In the *Nativity* in Dijon (Mus. B. A.) the artist depicts a spacious landscape. As in the Prado *Marriage of the Virgin*, one can note a characteristic tendency of the master, probably a direct influence from the contemporaneous theater, to place in the foreground one or even several figures seen from behind, thus creating a complete cohesion of all the actors of the scene and thereby excluding the "spectator." In the *Madonna with SS. Peter, Benedict, and Augustine* (Aix-en-Provence, Mus.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Granet) there is not only a similar landscape but also a figure seen from behind. The scene of the Magdalen reading (PL. 411) is only part of a work depicting the Virgin surrounded by saints, of which the Gulbenkian Collection owns two other details (a head of St. Joseph and another, probably St. Catherine).

Between 1430 and 1450, when Rogier van der Weyden was at the height of his powers, he executed his impressive series of great masterpieces. Iconographically they fall into three distinct groups: he continued to paint scenes from the life of the Virgin, but he concentrated mainly on dramatic subjects relating to the Passion and also executed numerous portraits. A noteworthy work in the first group is the *Seated Virgin* (ca. 1435) in Lugano (Thyssen-Bornemisza Coll.). The *Marriage of the Virgin* in the Prado had already shown the artist's fondness for placing a Biblical scene within an architectural frame — in that instance an existing church porch — and this tendency was to continue throughout his career. In the Lugano painting the Virgin with the Child is seated beneath an imaginary porch, to which the artist gives particular importance. The openwork decoration of the outer arch of the porch is intended to create an illusion of depth; this motif can be found again, with increasingly skillful variations, in numerous later altarpieces as well as in the *Standing Virgin* in Vienna (Kunsthist. Mus.), which is contemporaneous with the Lugano work. The Louvre *Annunciation* (PL. 412) originally formed the central panel of a triptych with volets (Turin, Gall. Sabauda) representing a Visitation and a kneeling donor, whose original head has been cut out and replaced by the present one. It can be observed that Rogier van der Weyden's Virgins always have far more tilted heads than those of Jan van Eyck. However, the most striking feature of the Louvre *Annunciation* is the astonishing fidelity in the rendering of every detail, as, for instance, in the brocade cope of the archangel Gabriel and in the small still life on the fireplace mantel; nor can the attempt at chiaroscuro between the Virgin and the window be ignored. The general compositional outline of Van Eyck's *Madonna with Chancellor Rolin* (V, PL. 224) reappears in Rogier's altarpiece *St. Luke Painting the Virgin* (ca. 1435; Boston, Mus. of Fine Arts). Rather than attempting to rival his brilliant predecessor in the rendering of the most infinitesimal detail, Rogier here emphasizes the back-lighting effect, the nuances of which he already handles well.

During these years the master began to show a decided preference for tragic scenes, among which those from the cycle of the Passion predominate. Other artists before him had represented the same theme, but unlike his predecessors Rogier strove to analyze fully the sufferings of the Saviour during the successive phases of His Passion, as well as the different aspects of the grief of the Virgin, St. John, Mary Magdalene, and other figures. Highly typical in this respect is the dead Christ represented in the grisaille Trinity panel in the Städelsches Kunstinstitut, Frankfurt am Main, which also owns two other panels of the same lost altarpiece, namely, a standing Virgin nursing the Child and a St. Veronica, as mentioned above. Shortly after 1430 the master must also have painted a Deposition of monumental dimensions, judging from the large panel of the bad thief (also in Frankfurt am Main), which is actually only part of the right volet. Here the incisive style of the painter has become more assertive and his corrosive brush gives the impression of cutting into the panel. The plain background permits the artist to throw into relief the full intensity of the tortured figure's agony.

In his great masterpiece *The Descent from the Cross* (formerly in the Escorial, near Madrid, and now in the Prado) Rogier reached his peak. This altarpiece (PL. 413) was in the Church of Notre-Dame-hors-les-Murs in Louvain until 1574, when Mary of Hungary bought it as a gift for her nephew Philip II. All the figures are life-size and set against a gilt background; the master thus achieved a frieze of moving beauty, with each figure expressing in his own way his confusion, bitterness, and grief. The general feeling of sadness is expressed by the juxtaposition of the bent bodies. The sinuous line of the body of Christ, exhausted by pain, is strikingly echoed in the figure of His grief-stricken mother. Toward 1440 Rogier van der Weyden executed at least three Crucifixions, which are now in Vienna (PL. 414), Berlin (Staat. Mus., Gemäldegalerie), and Zurich (Abegg Coll.). In each of them it is the mystical and tragic beauty of the Christ that arouses admiration.

The triptych of the Virgin, now divided, dates from the same years; its three panels of equal size represent a Pietà (the central panel; PL. 182), the Nativity (the left volet), and the resurrected Christ appearing to His mother (the right volet). The central panel and left volet are preserved in Granada (Cath., Capilla Real) and the right volet is in New York (Met. Mus.). The Miraflores Altarpiece in Berlin (Staat. Mus., Gemäldegalerie) is an excellent contemporaneous copy of this triptych. In both triptychs the scenes are placed at the center of arches directly inspired by church portals of the period. This arrangement, undoubtedly deriving from the representations of mystery plays, sets the different groups in striking relief. The artist was not alone in exploiting this ingenious system; other painters were soon to make use of it in their works. Also belonging to the same cycle of dramatic subjects is the monumental altarpiece of the Last Judgment (ca. 1443–46) in Beaune (PL. 414). This work was commissioned by Chancellor Nicolas Rolin for the chapel of the Hôtel-Dieu, which he had just had built at his own expense. In this work recur several of the characteristics of the *Descent from the Cross* in the Prado. The figures are placed side by side to form a symmetrically rhythmic frieze on both sides of the central scene, and the flat gilt background causes the figures in the scene to stand out sharply, accentuating their individual emotions. The viewer has the sensation of assisting at the drama of the souls drawn toward the horrors of hell.

Although they are less spectacular and less "theatrical," the faces in Rogier's portraits are no less marked by intensity (PLS. 415, 416). Significant examples from this same period of his maturity (ca. 1430–50) are the two contrasting portraits in Berlin (Staat. Mus., Gemäldegalerie): the powerful and highly expressive head of Robert de Masmin (?) and the timid and mysterious countenance of the portrait of a young lady (PL. 416). The artist was already attracted by the problem of light; on the garments of this beautiful unknown woman, whose somewhat ironical glance betrays a sure sense of superiority, Rogier has discreetly used a kind of pointillism that can only be described as preimpressionistic.

Rogier van der Weyden's third and last period (1450–64) began with an important event in the life of the painter: his journey to Rome as a Holy Year pilgrim. During his stay in Italy and immediately after his return home, he executed several works for various art patrons south of the Alps. All these works show a sudden change in his conception, as if direct contact with the Italian Renaissance has noticeably modified his style. In his portraiture the change is complete. In the portrait of Francesco d'Este (New York, Met. Mus.), who is depicted proudly showing the hammer used by Pope Nicholas V to open the Porta Santa, the subject stands out from the light-colored background with great precision. Here the sense of mystery inherent in all Flemish portraits of the 15th century has been left behind. The mood is much less religious, less meditative — it has become more human.

Rogier's altarpieces of this period reveal a similar transformation. For the Medici family he painted the *Virgin and Child with Peter, John the Baptist, Cosmas, and Damian* (PL. 415), the first *sacra conversazione* in the history of Flemish painting. The tent beneath which the Virgin and Child appear is also borrowed from Italian art. *The Entombment* (Uffizi) shows a dual southern influence: the subject itself is inspired by Florentine examples (perhaps Fra Angelico), and the emphasis with which the beautiful nude body of the crucified Christ is "exposed" betrays a concept completely foreign to Flemish art before 1450. Another important detail is the way in which Nicodemus's gaze fixes the viewer and thus breaks the "closed circle" of the scene, even while the figure of Mary Magdalene shows that the artist has remained faithful to his habit of showing figures in rear view. But these are not the only changes in Rogier's iconography and style. There is a general softening of his style, encouraged no doubt by his contact with Italian artists,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

but also perhaps due to age and no less to increasingly frequent and apparent workshop assistance (perhaps Hans Memling) in the completion of his paintings. By way of example, it is sufficient to compare the triptych of John the Baptist (Berlin, Staat. Mus., Gemäldegalerie) with the previously discussed triptych of the Virgin, the panels of which are now divided between Granada and New York, even though their general disposition is similar. This loosening in Rogier's style is also evident in the numerous Virgin and Child paintings of the period (Caen, Mus. B. A.; Chicago, Art Inst.; San Marino, Calif., Henry E. Huntington Lib. and Art Gall.; etc.) and, above all, in the *Adoration of the Magi* (PL. 417), also known as the St. Columba triptych because it was long preserved in the church dedicated to that saint in Cologne.

In his last period the painter executed a few masterpieces without assistance, particularly when commissioned by important dignitaries at the court of Philip the Good. The most striking of these are the Nativity triptych, or Middelburger Altar (Berlin, Staat. Mus., Gemäldegalerie), painted for Pierre Bladelin, Contrôleur Général des Finances, and the Seven Sacraments triptych (PL. 415) for Jean Chevrot, Bishop of Tournai. During these same years Rogier also executed numerous portraits of Philip the Good (copies in Bruges, Groeninge-Mus., and Antwerp, Mus. Royal des B. A.) and of the most prominent figures in his immediate circle: Charles the Bold (Berlin, Staat. Mus., Gemäldegalerie); Antoine, Grand Bâtard de Bourgogne (or Jean de Coïmbre?; PL. 415); the courtier Philippe de Croy (Antwerp, Mus. Royal des B. A.); and Laurent Froimont (Brussels, Mus. Royaux des B. A.).

Whereas Jan van Eyck had aspired to include the entire visible world in his paintings, Rogier van der Weyden limited himself more to the analysis of human beings. This essential difference in their aims accounts for the rather secondary importance given by Rogier to landscape and interiors, to the degree that on occasion he did not hesitate to eliminate them altogether, reviving the tradition — already fallen into disuse by his time — of the plain, generally gilt, background. As a result his figures acquired more monumental dimensions and infinitely greater plasticity. Yet the quintessence of his art does not lie in this; his ideal was to express with the greatest possible intensity the most varying and preferably the most dramatic emotions, as demonstrated by his predilection for the Passion cycle. Another fairly consistent characteristic, already mentioned, is his placement of figures in an architectural frame, painted in grisaille, that gives a highly realistic effect and uncommon depth to the whole; in some instances the architectural element is reduced to a more or less decorated openwork arch used for the same purpose. His coloring in general is the opposite of Jan van Eyck's, as Rogier's palette is rather cold in tone, with blues predominating. Rogier's drawing is distinguished by an extraordinary precision, as attested by the sublime silverpoint drawing of the head of the Virgin (Louvre) or the dedication miniature of the *Chroniques du Hainaut* (Brussels, Bib. Royale), which shows Jean Wauquelin presenting his translation of Jacques de Guise's *Annales illustrium principum Hannoniae* to Philip the Good in the presence of the youthful Charles the Bold, the aged Chancellor Rolin, Bishop Jean Chevrot, and some friends, all Knights of the Golden Fleece.

Apart from Jan van Eyck, no other 15th-century Flemish master exerted so deep and so extensive an influence as Rogier van der Weyden (see V, cols. 409–410). All the painters in Brussels came under his stylistic influence during his lifetime and even after his death, at least until the artistic renewal stirred by Bernart van Orley (V, PL. 287). Among these followers may be mentioned Rogier's son Peter (possibly the Master of the Legend of St. Catherine), Vranck van der Stoct (Stock), and the Master of the Legend of St. Barbara, all of whom were active in the late 15th century; the Master of Affligem (perhaps Jacob van Laethem), of about 1500; and Colijn de Coter, the Master of the Legend of Mary Magdalene (perhaps Bernart van der Stoct), and the Master of Orsoy, all of the 16th century. Even the greatest of Rogier's contemporaries were susceptible to his influence, as may be seen in certain works by Petrus Christus, Dirk (Thierry) Bouts, and Hans Memling. Moreover, the imitation of his compositions, of his iconographic types, and of occasional revealing details spread beyond the frontiers of the Low Countries to Germany, in the works of Stefan Lochner, Martin Schongauer, and even Albrecht Dürer; to France, in the *œuvre* of Jean Bellegambe; to Spain, in the production of Bartolomé Bermejo, Pedro Sanchez, and Jorge Inglés; and to Italy, more particularly Ferrara, in the art of Cosmé Tura, Francesco del Cossa, and Ercole de' Roberti. Beyond this direct imitation by painters, many other artists, especially the Brabant sculptors of altarpieces and statues in the round and the designers of tapestry cartoons, were inspired by the works of Rogier van der Weyden.

BIBLIOG. A. Wauters, Rogier van der Weyden, ses œuvres, ses élèves et ses descendants, Brussels, 1856; A. Pinchart, Roger de la Pasture, dit van der Weyden, Brussels, 1867; H. von Tschudi, Der Meister von Flémalle, JhbPreussKSamml, XIX, 1898, pp. 8–34, 89–116; F. Winkler, Der Meister von Flémalle und Rogier van der Weyden, Strasbourg, 1913; K. Voll, Altniederländische Malerei, Leipzig, 1923; M. J. Friedländer, Die Altniederländische Malerei, II, Berlin, 1924; F. Winkler, Altniederländische Malerei, Berlin, 1924; G. Hulin de Loo, Hans Memlinc in Rogier van der Weyden's Studio, BM, LII, 1928, pp. 160–77; J. Destrée, Roger de la Pasture-van der Weyden, 2 vols., Paris, Brussels, 1930; E. Renders, La solution du problème Maître de Flémalle-Campin-van der Weyden, 2 vols., Bruges, 1931; E. Renders and F. Lyna, Le Maître de Flémalle, Robert Campin et la prétendue École de Tournai, GBA, N.S., II, 1931, pp. 289–97; U. van de Voorde, Het raadsel van den Meester van Flémalle, Brussels, 1931; M. J. Friedländer, Flémalle Meister-Dämmerung, Pantheon, VIII, 1932, pp. 353–55; P. Rolland, Les primitifs tournaisiens, peintres et sculpteurs, Brussels, 1932; J. de Groodt-Adant, Roger de la Pasture et la Cour de Philippe le Bon, Dijon, 1935; J. Lavalleye, Essai de classement de quelques œuvres de jeunesse de Roger van der Weyden, Brussels, 1936; M. J. Friedländer, Die Altniederländische Malerei, XIV, Leiden, 1937; C. de Tolnay, Le Maître de Flémalle et les frères van Eyck, Brussels, 1939; E. Michel, Rogier van der Weyden, Paris, 1945; W. Ueberwasser, Rogier van der Weyden, Gemälde aus dem Escorial und aus dem Prado-Museum, Bern, 1945; M. J. Friedländer, Noch etwas über das Verhältnis Rogier van der Weyden's zu Memling, Oud-Holland, LXI, 1946, pp. 11–19; P. Fierens, Roger van der Weyden, Brussels, 1948; T. Musper, Untersuchungen zu Rogier van der Weyden und Jan van Eyck, Stuttgart, 1948; P. Rolland, Les impératifs historiques de la Biographie de Roger, Rev. belge d'archéol. et d'h. de l'art, XVIII, 1949, pp. 145–61; W. Vogelsang, Rogier van der Weyden's Pietà: Form and Color, New York, 1949; H. Beenken, Rogier van der Weyden, Munich, 1951; J. Maquet-Tombu, Roger van der Weyden pèlerin de l'Année Sainte 1450, Brussels, 1951; J. Cortéz, Infantes de avis retratados por van der Weyden?, Rev. e B. da Acad. Nac. de Belas Artes, Lisbon, II, 1952, 4, pp. 8–14, 1953, 5, pp. 36–43, 6, pp. 23–28, 1955, 8, pp. 13–18; V. Denis, Un nouvel argument en faveur de l'unité de l'œuvre de Rogier van der Weyden, Ann. de la Fédération H. et Archéol. de Belge (35e Cong., Courtrai, 1953), V, pp. 541–47; J. Lavalleye, L'École bruxelloise de peinture au XVe siècle, in Bruxelles au XVe siècle, Brussels, 1953, pp. 165–86; E. Panofsky, Early Netherlandish Painting, Its Origins and Character, 2 vols., Cambridge, Mass., 1953.

Valentin DENIS

Illustrations: PLS. 411–417.

WHISTLER, JAMES ABBOTT MCNEILL. American painter and engraver (b. Lowell, Mass., July 10, 1834; d. London, July 17, 1903). Whistler spent his early childhood in the United States; in 1843 he went to St. Petersburg (Leningrad), where his father was a railroad engineer for the Russian government. He studied there until 1849 and returned to the United States in 1851 to take courses at the United States Military Academy in West Point, N.Y. In 1854 he abandoned his studies to take a job as cartographer for the Department of the Navy in Washington, D.C., at which time he began to paint.

In order to dedicate himself exclusively to painting, he moved to Paris in 1855 and enrolled in the atelier of Charles Gleyre, where he met Edgar Degas (q.v.), Alphonse Legros, and Félix Bracquemond and became a friend of Henry Fantin-Latour (q.v.), with whom he visited Gustave Courbet's (q.v.) Pavillon du Réalisme. This exhibition, prepared by Courbet in 1855 to display works of his that had been refused by the Exposition Universelle, made a great impression on Whistler. Courbet's influence is particularly evident in Whistler's paintings of this period and in his first series of etchings, published under the title of *Twelve Etchings from Nature* but commonly known as "The French Set" (1858; Washington, D.C., Freer Gall.).

In 1859 in Léon Bonvin's studio, Whistler and Fantin-Latour exhibited their paintings that had been rejected by the

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Salon jury — among them Whistler's *Portrait of Lady Seymour Haden at the Piano* (1859; Cincinnati, private coll.). Courbet himself visited the exhibition and expressed his appreciation of the American artist's work. Courbet's influence is also evident in some paintings executed by Whistler in England, such as *Wapping-on-Thames* (1861; New York, John Hay Whitney Coll.) and *The White Girl* (PL. 419). The latter, which the Royal Academy of London refused to exhibit, was shown instead in 1863 at the first Salon des Refusés in Paris. As Zola related (*L'œuvre*, Paris, 1886, chap. V), it created a public scandal. In 1865 Whistler and Courbet worked together in Trouville-sur-Mer where they met Monet (q.v.) and Boudin and, later, Daubigny. During this period Whistler's progressive withdrawal from Courbet's realism had already begun; his *Harmony in Blue and Silver: Trouville* (1865; Boston, Isabella Stewart Gardner Mus.) employs a tonal scale not unlike but quite distinct from that of the impressionists. Whistler's art was beginning to reflect the new cultural stimulus of Eastern art that was later to have such a profound influence on his painting. He had just discovered Japanese prints and had begun to collect Chinese porcelain; the chromatic delicacy and concise formal elegance in these works fascinated him, and this fascination immediately became evident in a group of paintings executed in 1864, including *La Princesse du Pays de Porcelaine* (*Portrait of Miss Christine Spartali*; Washington, D.C., Freer Gall.), which was exhibited at the Salon of 1865, and *The Little White Girl: Symphony in White, No. 2* and the *Lady of the Lang Lijsen* (both, PL. 420).

Whistler seems to have been chiefly preoccupied in this period with the search for subtle tonal relationships that would appeal immediately to the sensibilities of the viewer, independent of the representational content; for Whistler, in fact, subject matter was totally subordinated to these relationships (cf. AMERICAS: ART SINCE COLUMBUS, cols. 294–95). It is precisely this aspect of his work that constitutes the radical distinction between Whistler's stylistic credo and that of the impressionists, for whom the subject regained a specific and more immediate value by means of these relationships. In this search, Whistler tended to associate the expressive capacities of painting with those of music; this is indicated by his adoption of musical terms for the titles of his works: harmony, symphony, nocturne (as in *Old Battersea Bridge: Nocturne — Blue and Gold;* PL. 418), variation, arrangement, and so forth.

Whistler's new stylistic approach matured by 1867, when, in a letter to Fantin-Latour, he clearly repudiated Courbet's teachings and his own earlier paintings, claiming for painting a more absolute independence from the exigencies of nature.

However, his art remained closely linked to French figural and literary tradition, which he helped to spread in England, where he had settled after a trip to Valparaiso in 1865–66; he strongly influenced the development of Victorian esthetics. Exoticism contributed to a great extent to the development of Whistler's style, becoming one of the most obvious characteristics of his art. It found brilliant expression in the Oriental tendencies of the Peacock Room, executed for the London house of F. R. Leyland in 1876–77 (PL. 421). Although he became an intimate friend of Dante Gabriel Rossetti and other Pre-Raphaelites, Whistler did not share their enthusiasm for a medieval revival (see PRE-RAPHAELITISM AND RELATED MOVEMENTS). His philosophy of "art for art's sake" contrasted radically with the esthetics of William Morris (q.v.) and the Arts and Crafts movement. Consequently, although Whistler was important as an intermediary between Eastern art and the beginnings of Art Nouveau (q.v.) his paintings and engravings had little direct influence on that style, except as they affected A. H. Mackmurdo's decorative taste and Aubrey Beardsley's drawings.

In 1878 Whistler initiated a law suit against John Ruskin, who had contested the "willful imposture" and the price of the painting, *Nocturne in Black and Gold: Falling Rocket* (Detroit, Inst. of Arts), in an article (*Fors Clavigera*, July 2, 1877). The legal proceedings gave Whistler an opportunity to set forth his ideas on art with brilliant polemic spirit, in an account entitled *Whistler Versus Ruskin — Art and Art Critics*, which he published in 1879.

In 1879 Whistler went to Venice, where he spent a year before returning to London. In 1883 he executed the *Portrait of Théodore Duret* (PL. 420); Duret, supporter of the impressionists, later wrote about Whistler in the *Critique d'avant-garde* (Paris, 1885). He also executed *Arrangement in Gray and Black, No. 1, Portrait of the Painter's Mother* [Louvre (Ed. note: Most authorities give the date of this work as 1872)], which was exhibited at the Salon of 1883, and he organized a large exhibit of his engravings. In 1884 he moved again to Paris, where he opened a school of painting, and sent to the Salon the greatly admired *Portrait of Thomas Carlyle* (PL. 420). In the same year and again in 1886 he was invited to participate in the first exhibitions of the work of Les XX, a vanguard symbolist group, in Brussels. In 1886–87 Whistler held a large one-man show at the gallery of Georges Petit, who later organized another exhibition in which Whistler's work was included along with paintings by Morisot, Monet, Pissarro, Sisley, and Renoir. Thus, after about twenty years Whistler once again became associated with the impressionists.

His position as the principal exponent of estheticism in the figural arts was firmly established by the late 1880s and brought to him the increasingly lively attention of the littérateurs. Joris Karl Huysmans, writing in *Certains* (Paris, 1889), compared his painting to Verlaine's poetry. George Moore, who wrote of him in *Confessions of a Young Man* (London, 1888), was among the first to demonstrate an understanding of the profound difference between Whistler's art and that of the impressionists, and he considered him a "classicist like Ingres." In 1888 Mallarmé translated for the *Révue Indépendante* the so-called "Ten O'clock" lecture that Whistler had delivered in 1885 (Mallarmé, *Oeuvres complètes*, Paris, 1945). In this lecture the painter again expounded his concept of art and discussed some considerations in the use of artificial lighting in painting, a discussion that was, significantly, to interest Seurat later. Marcel Proust symbolized in the character of the painter Elstir in *A la recherche du temps perdu* (Paris, 1913) the ideal artistic personality that Whistler had been for his contemporaries; Proust refers to him explicitly several times in this work and again expressed his admiration for him in a preface to Jacques-Emile Blanché's *De David à Degas* (Paris, 1927).

In the last years of his life, Whistler once more set forth his ideas on art in *The Gentle Art of Making Enemies* (London, 1890) and in *The Baronet and the Butterfly* (London, 1899).

In Paris and then in London from 1896 until his death, Whistler dedicated himself almost exclusively to the execution of portraits, which are among the most refined expressions of the taste and the artistic ideals of the best society of the time.

BIBLIOG. For a comprehensive bibliog. see D. C. Seitz, Writings by and about Whistler: A Bibliography, Edinburgh, 1910; see also the bibliog. in W. Grohmann, ThB, 1942. J. Wedmore, Whistler's Etchings, London, 1886; T. Duret, Histoire de J. McN. Whistler et de son œuvre, Paris, 1904; F. Sorbatté, Exposition des eaux-fortes, Rome, 1904; L. Bénédite, Whistler, GBA, XXXIV, 1905, p. 142 f.; L. B. Butterfly, L'Exposition Whistler, La Rev. des Arts, XVII, 1905, pp. 387–97; E. R. Pennell and J. Pennell, The Life of J. McN. Whistler, London, 1908 (5th ed., 1911); E. R. Pennell and J. Pennell, Whistler's Journal, Philadelphia, 1921; J. Laver, The Life of Whistler, London, 1930; L. Venturi, Les Archives de l'impressionisme, Paris, New York, 1939; B. A. Stubbs, James McNeill Whistler, Washington, D.C., 1950; Smithsonian Institution, The Whistler Peacock Room, Freer Art Gallery, Washington, 1951; C. Lancaster, Oriental Contributions to Art Nouveau, AB, XXXIV, 1952, pp. 297–310; K. Pearson, The Man Whistler, London, 1952; P. E. Richardson, Sophisticates and Innocents Abroad, AN, LIII, 1954–55, pp. 20–23, 61–62; G. C. Argan, Elstir o della pittura (1947), in Studi e noti, Rome, 1955; R. Schmutzler, English Origins of Art Nouveau, Arch. Rev., 1955, pp. 110–15; J. Rewald, Post-Impressionism, from Van Gogh to Gauguin, New York, 1956; R. Riegger-Baurmann, Schrift im Jugendstil, Börsenblat für den Deutschen Buchhandel, XIV, 31a, 1958, pp. 495–97; P. Ferriday, Peacock Room, Arch. Rev., CXXV, 1959, pp. 407–14; P. Selz and M. Constantine, Art Nouveau, New York, 1959, pp. 14, 28; The Arts Council, James McNeill Whistler, London, New York, 1960; W. Gaunt, The Aesthetic Adventure, Harmondsworth, 1961; H. Honour, Chinoiseries: The Vision of Cathay, London, 1961; J. Rewald, The History of Impressionism, 2d ed., New York, 1961; D. Sutton, Nocturne — The Art of James McNeill Whistler, London, 1963; J. Sandberg, 'Japonisme' and Whistler, BM, CVI, 1964, pp. 500–07.

Oreste FERRARI

Illustrations: PLS. 418–421.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

WILIGELMO DA MODENA. Italian sculptor active in Modena in the first decade of the 12th century. It is thought from the character of his work that he was from northern Italy, but although he is often regarded as the first great artistic personality in the history of Italian sculpture, no other facts of his life are known. His chief work decorates the Cathedral of Modena, and his name is preserved in the last two lines of the epigraph on the façade of the Cathedral: *Inter sculptores quanto sis dignus onore — Claret scultura nunc Wiligelme tua.* The figures of Enoch and Elijah that flank the memorial tablet and are carved from the same block can therefore be considered signed works, and on the basis of these figures the portal with the prophets (PL. 424), the four reliefs from Genesis (PLS. 422, 425; XII, PL. 255), the two genii holding torches (PL. 425), the Samson, and the various capitals of the blind arcade of the façade are clearly also to be attributed to Wiligelmo.

The fact that Wiligelmo worked from about 1100 until sometime probably between 1106 and 1110 is evident from a study of the construction of the Cathedral (founded 1099, crypt consecrated 1106; construction begun — as is known from the available sources and from the evidence of the edifice itself — simultaneously from the apses and the façade). The dates of Wiligelmo's work are further confirmed by a number of works dating from the first and second decades of the 12th century that are obviously derived from the Modenese sculptures: the cathedra of Bishop Elia in S. Nicola, Bari, prior to 1105 (XII, PL. 261); Aragonese tombs; surviving sculptural decoration from the old Cathedral of Cremona, which was founded in 1107 and collapsed in 1117; the portal of the Abbey of Nonantola, begun in 1121; etc. Consequently, there is little basis for either the cautious extension of the dates of Wiligelmo's work to about 1125 (Schnaase, 1869; Cipolla, 1895; Dondi, 1896) or the repeated attempts of scholars to place his sculptures at a later date. These attempts have rested on various bases resulting in different hypothetical dates: on the so-called "archaeological method" and on the assumption of "progress" (Mâle, 1918, and Deschamps, 1925–26; ca. 1140); on the claim of derivation from the Provençal school of Saint-Gilles (Hamann, 1923, 1955, and Krautheimer-Hess, 1928; after 1117); on the gratuitous hypothesis that Wiligelmo succeeded Lanfranco as the architect of the Cathedral (Simeoni, 1933–34; after 1106); and finally, on the slight discrepancy in size between the two reliefs on the right and the adjoining parts of the wall, from which one could assume that the sculptures were placed there later (Jullian, 1945, 1958; ca. 1106–20) — although it seems equally logical to deduce from this that the relief sections were prepared prior to the construction of that part of the façade. The dating in the first decade is accepted by many scholars (Vedriani, 1667; Burckhardt, 1884; Zimmermann, 1897; Venturi, 1904; Porter, 1917; Bertoni, 1921; Toesca, 1927; Francovich, 1940).

Concerning the sources of Wiligelmo's style, it is necessary to reject both the Provençal thesis of Hamann (1923, 1955) and the Aragonese one expounded by Porter (1923) and supported by Beenken (1925, 1928). The Aragonese sculptures are closer to the style of Wiligelmo's disciple who executed the Porta dei Principi than to Wiligelmo's own; furthermore, the erroneousness of the current early dating of Spanish sculpture was partially shown by Gaillard (1938) and is still being demonstrated (Salvini, 1963). The observations of Porter (1917), Toesca (1927), and especially Morey (1919, 1924–25) regarding the derivation of Wiligelmo's art and of other Emilian Romanesque sculpture from Ottonian and Carolingian ivories and miniatures should be regarded with similar caution. Wiligelmo's art belongs to the early period of the formation of Romanesque sculptural expression, and it participated, with all the early Romanesque sculpture of the West, in the process of reordering the current of pre-Romanesque popular expression (often incorrectly defined as "barbarian"). This reordering took place under the influence of Roman art — particularly noticeable in Wiligelmo and demonstrable by careful comparisons with pieces of sculpture in the Modenese necropolis — and of the Carolingian and Ottonian court styles — difficult to detect in Wiligelmo. The only Romanesque precedents of Wiligelmo's art are some sculptures of the early Aquitaine (Languedoc) school, although Wiligelmo owes less to the still very archaic work of Bernard Gilduin in St-Sernin of Toulouse (XII, PL. 236) than to the reliefs of the pilasters and, even more, some of the capitals in the cloister of Moissac (ca. 1100; XII, PL. 237). The clear demarcation of volumes in the reliefs from St-Sernin slowly gave way at Moissac to a more articulated and sculpturally denser style, laying down the precedents that were to be followed, though in a different way, by the sculptor of the Portal of the Counts in St-Sernin and by Wiligelmo in the Modenese reliefs. The presence in Wiligelmo's work of the Aquitaine double lines marking drapery folds, pointed out some time ago by various critics (Porter, 1917; Toesca, 1927; Francovich, 1940; etc.), is clear proof of these relationships. This in no way detracts, however, from the profound originality and the extremely high artistic level of the work of Wiligelmo. The style, still archaically metaphorical, of the Aquitaine reliefs is translated by Wiligelmo into a vigorously personal and concrete idiom in which even the most purely ornamental aspects constitute an integral part of the basic sculptural arrangement.

Wiligelmo's style reveals an intensely sculptural vision based on the relation between the relief and the background; this is why the images remain partly engaged in the plane, almost as if they were emerging from it with difficulty. Thus arises, in the figures of the prophets in the niches on the jambs of the portal (PL. 424), the poetic image of a humanity fervidly inspired but burdened by a destiny of earthly servitude. On the outer sides of the same jambs young shoots of acanthus leaves and grapevines take shape in dense volutes, which enclose small intense figures of men and animals; this motif creates the impression of a continual germination under the impulse of a slow but irresistible force, and the whole recalls the 3d-century Roman portal now installed in the Chapel of St. Aquilinus in S. Lorenzo Maggiore, Milan. A doleful image is presented by the two telamons on the portal of the Cathedral of Modena (PL. 423), which are prototypes of this peculiarly Italian Romanesque motif, extensively used from Lombardy to Apulia. Here they are subhuman beings, condemned to support for eternity the enormous weight of the Tree of Life; sculptured with a perfect balance between the plastic expression of the mass and the rounding of the volumes, they evoke a sense of the slow, turgid rise and fall of a wave.

The inspiration of Roman sarcophagi is evident in the linear unfolding of the story and in the articulation of the background of the reliefs from Genesis, originally intended as a single continuous sequence but later separated into four panels on the façade (cf. view of façade, XII, PL. 219). The main portal is flanked by two panels: the one on the left depicts Adam and Eve rebuked by God, sent forth from the Garden of Eden, and condemned to till the earth (PL. 422); the one on the right portrays Cain and Abel making offerings and Cain slaying Abel and being cursed by God (PL. 425). The other two panels were moved in about 1200 to their present positions over the two Campionesi portals of the façade and are consequently better preserved. The relief over the left-hand portal shows the Creator and the creation and fall of Adam and Eve (PL. 422); that over the right-hand portal depicts the slaying of Cain, Noah's Ark, and the departure from the Ark (XII, PL. 255). In spite of its debt to Roman sculpture, however, the style of Wiligelmo's Genesis reliefs is a new one; the sculptor has replaced the worn-out *ars rhetorica* of his models with a sober and sparing treatment of forms. The compositions take shape slowly in a rhythm that is unusually sustained, comprehensive, and explicit; and the figures and their gestures, concentrated in broad masses, restrained and basic in their articulations, are sculptured with a force that gives an absolute and corporeal clarity to the action. In the monotonous severity of the narration, the naked and elementary reality of this primal humanity is heavy with a mysteriously dramatic sense of an ineluctible destiny of suffering. A peak of dramatic intensity is reached in the solemn, bell-shaped composition of the creation of Eve; the straight lines of the drapery introduce a tension that culminates in the harsh lines of Eve's face, with its distant stare. The death of Cain has a similar force; the inexorability of the

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

condemnation is clearly conveyed by the angular quality of the mass and is precisely stated in the clear-cut outlines of every feature.

The work must have been carried out according to the chronological order of the story, beginning with the reliefs of the creation and expulsion, passing to the sculpture of the main portal itself, and ending with the two reliefs on the right depicting the stories of Cain and Abel and the Ark. The sculpture of the portal (PLS. 423, 424) is characterized by a more accentuated chiaroscuro and a greater density, features that are further strengthened in the last reliefs. The figures of Enoch and Elijah that flank the memorial tablet, probably executed after the consecration in 1106, are closely related to the figures in the scene of the emergence from the Ark. The two genii holding torches (PL. 425) were done a little later, followed, as the result of a new spirit of restrained monumentality, by the relief of Samson and by the extremely inventive capitals, architectural and at the same time anthropomorphous, of the blind arcading of the façade. Some of the capitals, however, especially the two large ones on the left (a double-tailed siren and a ram) and the first four of the northern side, do not represent a subsequent phase of Wiligelmo's style (Arcangeli, 1951), but rather define, in this new accent of serene volumes, the personality of a talented disciple, the Master of the Evangelists, the sculptor also of the reliefs of the Lombard-type porch and the symbols of the Evangelists high up on the façade and of the Madonna of Carpi (Modena, Mus. Estense; PL. 426)

The roster of Wiligelmo's followers is, of course, substantial. Similar to the Master of the Evangelists, if not the same man in a subsequent phase, is the Master of the Nonantola Lunette (after 1121; PL. 426), who also executed the left portal of the Cathedral of Piacenza (after 1122). The work of the Master of San Geminiano is easily distinguishable from that of Wiligelmo; even as early as about 1106, in the Porta dei Principi of the Cathedral of Modena, he reduced the profound drama of Wiligelmo's sculpture to graceful narration. Among the sculptures surviving from the old Cathedral of Cremona (ca. 1110) is the work of the great Master of the Prophets, who, using Wiligelmo's style as a point of departure, retraced the Modenese sculptor's steps, but retrogressively, toward an affected archaic expression. Also distinguishable is the work at Cremona, in a more popular vein, of the Master of the Genesis, the sculptor who carved the tablet commemorating the founding of the Cathedral. All the other sculpture of the Cathedral of Modena, like that of the jambs of the portal of Nonantola (PL. 426), grafted new styles derived from Burgundy and from the third phase of the Aquitaine school (e.g., tympanum of Moissac, XII, PL. 237; reliefs of Souillac, XII, PL. 239) onto Wiligelmo's creative roots.

BIBLIOG. L. Vedriani, Historia dell'antichissima città di Modena, Modena, 1667; K. Schnaase, Geschichte der bildenden Künste im Mittelalter, 5 vols., Dusseldorf, 1869–76; J. C. Burckhardt, Der Cicerone, 5th ed., Leipzig, 1884, I, p. 312; C. Cipolla, Per la storia d'Italia, Bologna, 1895; A. Dondi, Notizie storiche ed artistiche del Duomo di Modena, Modena, 1896; M. G. Zimmermann, Oberitalische Plastik, Leipzig, 1897; Venturi, III; G. Bertoni, Atlante storico-paleografico del Duomo di Modena, Modena, 1909; A. K. Porter, Lombard Architecture, New Haven, 1917; E. Mâle, L'architecture et la sculpture en Lombardie à l'epoque romane, GBA, LX, 1918, pp. 35–46; C. R. Morey, The Sources of Romanesque Sculpture, AB, II, 1, 1919, pp. 10–16; G. Bertoni, Atlante storico-artistico del Duomo di Modena, Modena, 1921; R. Hamann, Deutsche und Französiche Kunst im Mittelalter, I, Marburg, 1923; A. K. Porter, Romanesque Sculpture of the Pilgrimage Roads, Boston, 1923; C. R. Morey, The Sources of Medieval Style, AB, VII, 1924–25, p. 49; H. Beenken, Das romanische Tympanon des städtischen Museums in Salzburg und die lombardische Plastik des zwölften Jahrhunderts, Belvedere, VIII, 1925, pp. 97–118; P. Deschamps, Le légende arthurienne à la cathédrale de Modène, MPiot, XXVIII, 1925–26, pp. 69–94; P. Frankl, Der Dom in Modena, Jhb. f. Kw., 1927, pp. 39–54; Toesca, Md; H. Beenken, Neuere Literatur zur ausser deutschen Plastik Romanischer Zeit, RepfKw, 1928, p. 187; T. Krautheimer-Hess, Die figurale Plastik der Ostlombardei von 1100 bis 1178, Marburger Jhb., IV, 1928, pp. 231–307; Z. Bonacini, Una scultura di Wiligelmo, L'Arte, XXXIII, 1930, pp. 251–56; L. Simeoni, L'iscrizione di Lanfranco, Rend. Acc. Sc. dell'Ist. di Bologna, Classe di Sc. Morale, Ser. III, VIII, 1933–34; G. Gaillard, Les débuts de la sculpture romane espagnole, Paris, 1938; G. de Francovich, Wiligelmo da Modena e gli inizi della scultura romanica europea, RIASA, VII, 1940; R. Jullian, L'éveil de la sculpture italienne, Paris, 1945; F. Arcangeli, Tracce di Wiligelmo a Cremona, Paragone, 21, 1951, pp. 7–20; R. Salvini, I dischi di Wiligelmo a Cremona, Comm., II, 1951, pp. 153–61; R. Salvini, La datazione dell'opera di Wiligelmo nella cattedrale di Modena, Atti e Mem. Acc. Sc. Lett. e Arti di Modena, Ser. V, XII, 1954, pp. 229–41; R. Salvini, Gli scultori del portale di Nonantola, AttiDeSPa Provincie Modenesi, Ser. VIII, VI, 1954; R. Hamann, Die Abteikirche von St. Gilles und ihre künstlerische Nachfolge, Berlin, 1955; R. Salvini, Wiligelmo e le origini della scultura romanica, Milan, 1956 (extensive bibliography); R. Jullian, Remarques sur la sculpture romane de l'Italie du Nord, RA, 1958, 1, Apr.–June, pp. 183–204, 2, July–Sept., pp. 65–93; H. Keller, Kunstchronik, XII, 1959; R. Salvini, La scultura romanica in Europa, Milan, 1963; A. C. Quintavalle, Wiligelmo, Firenze, 1967.

Roberto SALVINI

Illustrations: PLS. 422–426.

WILSON, RICHARD. Welsh painter (b. Penegoes, Montgomeryshire, 1712 or 1713; d. Colomendy, Denbighshire, 1782). The son of a country rector, Wilson received a sound classical education and early displayed a talent for drawing. Accordingly, in 1729 he was sent to London, where he became a pupil of Thomas Wright, a mediocre portrait painter, with whom he is said to have remained for six years. Wilson's earliest dated picture, *Captain Smith*, of 1744 at Hagley Hall (near Wolverhampton, Staffordshire), shows Wilson at this stage as a capable exponent of the portrait tradition of the then popular Joseph Highmore and Thomas Hudson. By the late 1740s Wilson had established a respectable London practice as a portrait painter and was also employed in executing topographical paintings under the influence of Samuel Scott and George Lambert. In 1750 he traveled in Italy, remained about a year in Venice, and reached Rome at the end of 1751 or the beginning of 1752. Perhaps through the influence of Francesco Zuccarelli or Joseph Vernet, he then gave up portraiture for landscape. He made numerous sketches and paintings of views in the vicinity of Rome and Naples (*Lago di Agnano*, Oxford, Ashmolean Mus.; *Temple of Minerva Medica*, VI, PL. 440) and executed commissions in the manner of Zuccarelli, Marco Ricci, Gaspard Dughet (G. Poussin), and, above all, Claude Lorrain, for visiting English milords on the grand tour.

Returning to England about 1757, he settled in the Covent Garden section of London and took on a number of pupils. He accepted commissions for topographical works, then the chief means of livelihood for an English landscape painter, and painted landscapes with subjects drawn from his Italian sketchbooks (*Hadrian's Villa*, Manchester, Eng., City Art Gall.), as well as views of the English countryside (*Okehampton Castle, Devon*, Birmingham, Eng., City Mus. and Art. Gall.; *A View of Dover*, Cardiff, Nat. Mus. of Wales) and the Welsh landscape (*Cader Idris*, PL. 183), but he never attained the popularity of Zuccarelli or George Barret. The most enduring influences on his style were Albert Cuyp and Claude Lorrain. He was one of the founders of the Incorporated Society of Artists in 1759 and a founding member of the Royal Academy of Arts in 1768. About 1772 Wilson's practice began to decline, and, dogged by illness and increasing poverty, he was glad to accept the post of librarian to the Royal Academy of Arts in 1776. In 1781, when he succeeded to some property, he retired to Wales and virtually ceased to paint.

The following works in public collections are representative of the best of his output in his different periods: *Admiral Thomas Smith* (probably 1746), now in London (Greenwich, Nat. Maritime Mus.); *Ponte Molle, Monte Mario* (signed and dated 1754; Cardiff, Nat. Mus. of Wales); *River Dee Near Eaton Hall* (1760, pair; probably exhibited Society of Artists, 1762; Birmingham, Eng., Barber Inst. of Fine Arts); *Snowdon* (perhaps exhibited Society of Artists, 1766; Liverpool, Walker Art Gall.); *Valley of the Mawddach* (ca. 1770–75; Liverpool, Walker Art Gall.). While never entirely shaking himself free from the conventions of the classical tradition of European landscape, except in his more direct oil sketches and drawings, Wilson reached far beyond the purely topographical and decorative intentions of his predecessors such as Samuel Scott, George Lambert, and John Wootton. In his study of the native scene and in his exceptional feeling for light, atmosphere, and the poetry of landscape, he anticipated the age of Constable and Turner.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

BIBLIOG. B. Ford, The Dartmouth Collection of Drawings by Richard Wilson, BM, XC, 1948, pp. 337–48; City Museum and Art Gallery, Birmingham, England, Richard Wilson and His Circle (cat.), London, 1949; B. Ford, The Drawings of Richard Wilson, London, 1951; W. G. Constable, Richard Wilson, London, 1953; E. Waterhouse, Painting in Britain 1530 to 1790, Harmondsworth, 1953, pp. 172–77; M. H. Grant, The Old English Landscape Painters, London, 1958, II, pp. 125–47.

John HAYES

WITTE, EMANUEL DE. Dutch painter (b. Alkmaar, ca. 1617; d. Amsterdam, 1692). The chronicler Arnold Houbraken (*De Groote Schouburg der Nederlandsche Konstschilders en Schilderessen*, Amsterdam, 1718–20) states that De Witte (also spelled Witt, Widt, Wit, With) was trained in painting by the still-life specialist Evert van Aelst. He became a free master in Alkmaar, where he entered the Guild of St. Luke in 1636. In 1639 and the following year he was at work in Rotterdam but soon after must have moved to Delft, where he became a member of the painters' guild and possibly came in contact with Carel Fabritius. He remained in Delft for most of the decade of the 1640s. About 1651 he moved to Amsterdam, where he lived and worked until his death. Although his paintings were highly valued even in his lifetime, Houbraken describes him as constantly harrassed by debts. He was difficult in temperament and prone to make enemies; he died by his own hand.

Although best known for his church interiors (*Interior of a Gothic Church*, Amsterdam, Rijksmus.; *View of the Interior of a Catholic Church*, The Hague, Mauritshuis; *Interior of an Amsterdam Church*, Detroit, Inst. of Art), architectural paintings were by no means the only field in which the versatile De Witte excelled. His extensive output also included house interiors (*Domestic Interior*, V, PL. 317), harbor scenes, landscapes and seascapes, and market pictures. His earliest works, painted in the 1640s, are mostly portraits and mythological scenes. After he moved to Amsterdam he could easily have known Rembrandt, Govert Flinck (1615–50), and Bartholomeus van der Helst (1613–70). De Witte is said to have begun to do his famous church interiors under the influence of his slightly older contemporaries Hendrik Cornelisz. van Vliet of Delft (1611–75) and Gerard Houckgeest of Delft (1600–61), but De Witte's paintings far excelled theirs in the effect of vastness and majesty he achieved. De Witte's views are not always of known and recognizable buildings, which suggests that he may have traveled out of Amsterdam and also that he employed a rich imagination in envisioning fantastic composite views of churches and cathedrals. He suggested in his paintings deep quiet spaces between huge sunlit columns and managed complicated architectural perspectives, convincingly constructed with light and shadow. His palette included rich warm colors, with bright accents in the clothing of the little figures placed in awe-inspiring settings that establish a mood of genuine reverence. De Witte's market scenes, especially the renowned *Fish Market in the Evening* (1672; Rotterdam, Mus. Boymans-Van Beuningen), have a lively and interesting genre quality as well as a quaint and atmospheric rendering of people and places; these market scenes exploit to the full his considerable skill in the painting of still life.

De Witte's pictures were much in demand, and the king of Denmark commissioned work from him. His output is uneven in quality, because he painted rapidly in a effort to earn more and also possibly because some pictures were left incomplete by him and were finished by other, inferior artists.

BIBLIOG. W. Martin, De Hollandsche Schilderkunst, II, 1936, pp. 408 ff.; E. P. Richardson, De Witte and the Imaginative Nature of Dutch Art, AQ, I, 1938, pp. 5–15; E. Trautscholdt, ThB, s.v.; J. Leymarie, La peinture hollandaise, Geneva, 1956, pp. 169 ff.; J. Rosenberg and S. Slive, Dutch Art and Architecture 1600–1800, Baltimore, 1966, pp. 192 f.

Margaretta M. SALINGER

WITZ, KONRAD. The painter, whose Latinized name was Conradus Sapientis, was born at Rottweil in Württemberg, probably between 1400 and 1410; the theory that he originated in Constance has been disproved by Hecht (1937). He eventually moved to Basel, undoubtedly attracted by the meeting of the great church council there, which began in 1431 and brought to that city the princes of the Church and their households. In 1434 he was accepted into the city's artists' guild "zum Himmel" as Meister Konrat von Rotwil. In 1435 he was made a citizen of Basel, and in 1437 his name appeared on the list of the Lukasbrüder (Brothers of Luke). He married Ursula Treyger (Träger) of Wangen, niece of the renowned painter Nikolaus Rusch, called Lawelin.

About 1435 Witz was commissioned to do the Speculum Altarpiece (Heilsspiegelaltar) for the high altar of either the Chorherrenstift of St. Peter or the Augustinian monastery of St. Leonhard. Records of 1441–42 show payments for paintings, probably frescoes (no longer extant), for the Kornhaus in Basel, and in 1443 he acquired as a residence the fine Haus zum Pflug on Freie Strasse, the main street of the old city. The St. Peter Altarpiece, commissioned from Witz by the Bishop of Geneva, Cardinal François de Mies (Miez, Mez), for his Cathedral, carries on its frame the inscription "Hoc opus pinxit magister Conradus Sapientis de Basilea mccccxliiij"; and the view of the Lake of Geneva in the depiction of the Miraculous Draught of Fishes indicates that the artist spent some time in Geneva. The artist died at an early age, probably in 1445/46, for from that time documents refer to his wife as a widow. He also left five dependent children; with the substantial patrimony of the artist, "mit seinem Hantwerk gewunnen" (earned by his trade), his daughter Katharina entered the Magdalen Convent in 1454. Of the works of Witz, which were highly esteemed, a few survived the iconoclastic destructions in Basel (1529) and Geneva (1535). The partly damaged Speculum Altarpiece was subsequently divided, sawed into fragments and dispersed anonymously into private collections, most particularly that of the Margrave of Baden-Durlach. In the 19th century these fragments — identified as Italian, Burgundian, or Flemish works — appeared in various museums (Basel, Geneva, Dijon, Berlin, Strasbourg, Nürnberg). Even the painter's name was lost until it was rediscovered in 1901 by Daniel Burckhardt; thereby another landmark in the history of the development of German painting was recovered.

The artistic development of the artist, his education and apprenticeship, can only be surmised. In Basel he probably worked at first as a partner of Rusch, known as Lawelin, his wife's uncle, who was an active painter from Tübingen. In Basel during the first third of the 15th century, the high point of Upper Rhineland painting, there flourished locally the highly developed *weiche Stil* ("soft style").

His earliest known masterpiece, the altarpiece typologically inspired by the *Speculum humanae salvationis* (see BIBLICAL SUBJECTS), places the artist among the masters of the 15th century. The twelve — possibly eleven — surviving panels do not, however, strictly respect the ratio of three prefigurations for each New Testament subject. Probably there are not enough elements remaining for a complete and conclusive reconstruction; above all, the central part of the altarpiece is missing. The outer sides of the wings were each divided into four parts; five — possibly only four — of the eight original paintings are still in existence. The outer scenes, which preluded the scenes on the inner sides of the wings, included the pair of the Church (PL. 427) and the Synagogue and that of the angel of the Annunciation (all three, Basel, Kunstmus.) and Mary (lost) in the upper row, and saints and sibyls (Ganz, 1947) in the lower row; the representation of St. Augustine is preserved in Dijon (Mus. B. A.) and that of St. Bartholomew in Basel (Kunstmus.). On the inner sides there were eight paintings with scenes from the Old Testament and prefigurations from ancient history (PL. 428), according to Wendland (1924) and others; Escherich (1914) believes that there were originally two pairs of wings. Seven of the inner scenes are extant: Augustus and the Sibyl of Tibur (Dijon, Mus. B. A.); the Queen of Sheba before Solomon (Berlin, Staat. Mus., Gemäldegalerie); Antipater before Julius Caesar (PL. 428); Abraham before Melchizedek; Esther before Ahasuerus; and two panels with David and the heroes Abisai, Sabobay, and Banaias (last four subjects, Basel, Kunstmus.).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The large central compartment, now lost, has been variously reconstructed as a single work, painted or in relief, with the Last Supper, which would correspond to all the prefigurations; or, improbably, as a Last Judgment and a Redemption (Escherich, 1914); or as consisting of several smaller pictures with subjects from the New Testament (typologically corresponding to events in the Old Testament), such as the Nativity, the Adoration of the Magi, the Last Supper, and Christ and Mary as intercedents. It may possibly have included New Testament scenes on the predella and the cusped arch. Wendland (1924) believes the central compartment contained four scenes, while Gantner (1941) and Stange (1951) propose four to six scenes; Baum (1948) holds that the central compartment consisted of several scenes of the Last Judgment in relief.

It is also possible that the existing fragments are actually remnants of several smaller Speculum altarpieces of the Flemish type, such as those produced by Van Eyck, Rogier van der Weyden, and Dirk Bouts (Gantner, 1941). In any case, all together the surviving scenes represent one of the most comprehensive and oldest programs for an altarpiece inspired by the *Speculum humanae salvationis*. It can be said that the wings of Witz's Speculum Altarpiece had single figures in narrow nichelike frames on the outer sides and pairs of figures against a background of golden drapery on the inner sides; the figures were shown seated in the upper row and standing in the lower, and all was arranged in a hieratic, rigid parataxis, creating a highly effective sculptural appearance.

Of the St. Peter Altarpiece, ordered by Cardinal François de Mies for the high altar of the Cathedral of St-Pierre in Geneva and installed there on Feb. 20, 1444, only the wings have been preserved. The outer side shows the Miraculous Draught of Fishes and the Liberation of St. Peter (PL. 429), and the inner sides contain representations of the Adoration of the Magi and the donor (Cardinal de Mies) being recommended by St. Peter to the Virgin (PL. 430). There is no reliable information regarding the missing central panels; the Gnadenstuhl (Throne of Mercy) in Berlin, proposed by Wendland (1924), does not seem to be a work by Witz; the two-level altar reconstruction suggested by Escherich (1914), Burckhardt (1926), and Ganz (1947) is rather unlikely. With the St. Peter Altarpiece, Witz established himself as a true master of the highly dramatic tale and the multifigured composition.

Of the remaining individual panels those depicting the Annunciation (Nürnberg, Germanisches Nat.-Mus.) and the meeting of Joachim and Anna at the golden gate (PL. 430), as well as the St. Catherine and Mary Magdalene (Strasbourg, Mus. B. A.), probably belonged to an altarpiece dedicated to the Virgin, which according to Ganz (1947) came from the Dominican convent "zu den Steinen" in Basel, and which was erroneously reconstructed by Wendland as the so-called "Olsberg altarpiece." The poorly preserved panel with St. Christopher in Basel (Kunstmus.) does not belong to the Speculum Altarpiece. Whether the panels of the Holy Family (Naples, Mus. di Capodimonte) and the Crucifixion (Berlin, Staat. Mus., Gemäldegalerie) should be included among the works of Witz remains a subject of debate; the former is composed of motifs employed by the artist, and the latter reveals links between the Burgundian painting of about 1420 and the art of Witz. He probably did execute the famous Dance of Death murals in the Predigerkirche in Basel as well as the so-called "Earthquake Picture" in the Kaufhaus (destroyed) in the same city, both of which can be judged only by later copies.

Like no other major German artist of his time, Witz comprehended the principal artistic problem of the Quattrocento: the conquest of the visible world, the here and now. After having surpassed the prevailing "soft style" in the Speculum Altarpiece, the young master concentrated primarily on the corporeal aspect of things. He treated the human form as a stereometric solid, rather like a painted statue, without much concern for anatomy, movement, individuality, or expression. His figures are set diagonally, rather than frontally or transversally, in a restricted space, and they impinge upon the plane of the picture with their severity and angularity. The standing figures conceived as "columns" and the sitting figures intended as pyramids, combine grace and majesty. Thus worldly phenomena are reduced "cubistically" to the palpable and solid. The Nürnberg Annunciation (Germanisches Nat.-Mus.), for example, lacks the lilies, the prayer desk, and all the usual household articles, as well as the symbolic apparitions of the dove, the rays of light, and God the Father. Even space, when carefully studied, can be seen to have form. For instance, the small niches in which the figures of the Speculum Altarpiece appear are conceived as hollowed-out stone blocks, as concave correlates of the figures. Still richer spatial figurations are found in the St. Peter Altarpiece, in which the interior spaces result from a combination of wall, floor, and ceiling forms; a clear, unearthly light gives these interior spaces an unmistakable spiritual aura. Clearly Witz the artisan did not proceed from the systematically abstract and preconceived construction of space that was characteristic of the Italians; nor was his composition determined by the space. Also he did not attempt to create that suspended interior atmosphere which is characteristic of Flemish art. In the representation of Miracle of the Draught of Fishes (St. Peter Altarpiece) the panoramic view of the Lake of Geneva, with its novel unity of water, mountains, sky, and Biblical scene, is inspired by a direct impression from nature and may well be regarded as a prototype of German landscape painting. Witz's figures are customarily placed toward the lower edge of the panel, so that the small intermediate space results in an emphatic perspective and in broad angles and abrupt convergences.

Witz was highly sensitive to fabrics, both those that draped heavily and the light, rustling kind, in cold or warm colors, and he could also depict the cold, glistening smoothness of metals; but he did not attempt to reproduce the texture of human skin. His preference for the inorganic, for stone and metal, reached its culmination in the "statues" he painted in grisaille on buildings and in his armored figures. In the rigid garments, arranged in abstract crystalline patterns, Witz seems to have been seeking to armor the body, so that its posture takes on a sculptural generality, without any transient or individual differentiation. There is no attempt to convey the dignity or significance of materials (in the manner of Flemish painting); his works show concern rather with the nature of matter, especially stone, wood, and water. Volume and a sense of solidity are the principal virtues of Witz's forms. The finely blended brushstrokes affirm the cool objectivity of the artist.

As was also the case with other realists of his generation, his sacred figures and events are depicted in the everyday world of the years 1430–40. In the panel from the Speculum Altarpiece showing David and the three heroes, for example, Sabobay's battle dress is a valuable document in the history of armor. Also the particulars of the scene — the rust, the spider webs, and the flaking whitewash — create a sense of actuality devoid of any important iconological significance; unlike the Flemish painters, Witz sought extreme simplicity and had no taste for still life. In the St. Peter Altarpiece the Lake of Geneva landscape looms over the scene of the Miraculous Draught of Fishes as an eyewitness to the wondrous event.

This powerful, though one-sided, talent created single figures, such as the St. Bartholomew (PL. 430) from the Speculum Altarpiece, and pairs of figures with a hieratic monumentality that in German art was reached again only by Dürer. With Witz the human figure breaks away from medieval tradition. In the St. Peter Altarpiece, the artist faced critical problems of composition. Though stirring tales and even miracles were to be represented, even here the artist was not expansive, nor did he seek variety; instead, clarity and tranquillity elevate the tale to a level of spiritual significance. Architecture and landscape were increasingly made use of in his compositions — most effectively in the above-mentioned scene of the Miraculous Draught of Fishes, in which the action is heightened by the presence of the hills and mountains. As a bridge from one object to another, Witz used cast shadows for contrast with the clear, direct, unatmospheric light. While the sharply contrasting colors in the Speculum Altarpiece shine symbolically, in the St. Peter Altarpiece there is a tendency toward graduated tones, broader rhythms, and fusion with the painting surface.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Witz as empiricist and discoverer was directly concerned with the objective world. He used set formulas and stylistic borrowings sparingly. His principal interest in the problem of figural plasticity allies him with Paolo Uccello and Andrea del Castagno; yet his works do not indicate that he treated this problem systematically, without reference to spatial composition or to anatomical beauty. He differs from his southern German contemporaries, such as Lukas Moser and Hans Multscher, in his objectivity, to which all expressive emphaticness, fantastic or caricatural, is alien.

Witz's art owes much to the Flemish painters, and more to the Master of Flémalle than to Jan van Eyck — though certainly not directly — as revealed, for example, in his use of deep diagonal spaces and extreme perspective. His eye is scarcely less acute than Van Eyck's, particularly in his observation of the play of light and shadow, of reflections, and of textural surfaces. Even in the rigid attitude of his figures, in the tension between figure and space, in the depth of his compositions, and in the dense, crystalline folds of the robes, Witz seems to have been inspired by the Flemish painters, although his work remains simpler, more temperate, and iconologically freer, with total emphasis on the dominant single figure. His heads do not have the individuality of the Flemish portraits, his drapery does not have the richness of the Flemish materials, and his light does not have the golden quality of the Flemish light. The Master of the Aix Annunciation blended the same influences with his own stylistic inclinations in a manner similar to Witz.

The outstanding and highly personal art of Witz failed to attract a large following, mainly because of the prevalent influence of the great Flemish masters.

BIBLIOG. D. Burckhardt, Festschrift zum 400. Jahrestag des ewigen Bundes zwischen Basel und den Eidgenossen, Basel, 1901, p. 273 ff.; M. Escherich, Der Heilsspiegelaltar des K. Witz, JhbPreussKSamml, XXXV, 1914, pp. 245–55; M. Escherich, Konrad Witz (S. zur d. Kg., CLXXXIII), Strasbourg, 1916; H. Graber, Konrad Witz, Basel, 1921; H. Wendland, Konrad Witz, Basel, 1924; D. Burckhardt, Wie Konrad Witz der Vergessenheit entrissen wurde, Die Ernte, Basel, 1926, p. 45 ff.; H. Rott, Quellen und Forschungen zur süddeutschen und schweizerischen Kunstgeschichte, I, Bodenseegebiet, 1933, pp. 3, 161, III, Oberrhein, 2, 1936, pp. 9, 20, Stuttgart, 1933–36; H. A. Schmid, ThB, s.v.; J. Hecht, Konrad Witz, ZfKg, VI, 1937, pp. 353–70; W. Pinder, Die Kunst der ersten Bürgerzeit (Vom Wesen und Werden Deutscher Formen, II), Leipzig, 1937, pp. 263–66; W. Ueberwasser, Konrad Witz, Basel, 1938; G. Schmidt and A. M. Cetto, Schweizer Malerei und Zeichnung im 15. und 16. Jahrhundert, Basel, 1940, pp. 10–15; J. Gantner, Zur Ikonographie des Heilsspiegelaltars von Konrad Witz, Jahresbericht der Kunstsamml. Basel für 1940, Basel, 1941; J. Gantner, Konrad Witz, Vienna, 1942; M. Meng-Köhler, Die Bilder des Konrad Witz und ihre Quellen, Basel, 1947; P. L. Ganz, Meister K. Witz von Rottweil, Bern, Olten, 1947; J. Baum, Der Schrein des Basler Heilsspiegelaltars, Kunst, I, 1948, pp. 18–23; A. Stange, Deutsche Malerei der Gotik, IV, Munich, Berlin, 1951, pp. 127–55; W. Ueberwasser, Witz und sein Konzilsaltar, Sitzb. der kunstgeschichtlichen Gesellschaft, Berlin, 1954–55, p. 25 ff.; G. F. Hartlaub, Zwei detailstudien zur Ikonographie des Magismus in der deutschen Kunst des spätmittelalters, ZfKw, X, 1956, pp. 23–24; H. Aulmann, Gemäldeuntersuchungen, Basel, 1958; E. Maurer, Konrad Witz und die niederländische Malerei, Z. für Schw. Archäologie und Kg., XVIII, 1958, pp. 158–66; H. Röttgen, Konrad Witz: Analyse und Geschichte seiner Farbgebung (thesis), Marburg, 1958; H. Röttgen, Zwei noch umstrittene Zuschreibungen an K. Witz, Jhb. der Berliner Museen, III, 1961, pp. 77–95; Das Ambraser Hofjagdspiel, JhbKhSamml-Wien, XXI, 1961, pp. 39–68; F. Maurer, Kunstdenkmäler Basel-Stadt, IV, 1961, pp. 223–30; A. Stange, Ein Madonnenbild von K. Witz, Pantheon, XIX, 1961, pp. 39–44; P. Felder, Die Chorfresken in Kaiseraugst: Ein Schulwerk von K. Witz, Z. für Schw. Archäologie und Kg., XXII, 1962, pp. 57–65; G. Schmidt, Konrad Witz, Königstein i. Taunus, 1962.

Emil MAURER

Illustrations: PLS. 427–430.

WOODCARVING. See SCULPTURE; TECHNIQUES.

WREN, SIR CHRISTOPHER. English architect (b. East Knoyle, Wiltshire, 1632; d. Hampton Court, 1723). His early training was not in architecture, but in science, and he became a professor of astronomy, first in London and then at Oxford, before he was thirty. He was a founding member of the Royal Society and became its president in 1680. Although he had turned from science to architecture long before that date, his knowledge of science proved of incalculable value to his career. He had an innate talent for mathematics and was concerned with many kinds of scientific experiment outside his own field of astronomy. He was constantly devising the apparatus for practical demonstrations, and, according to his great contemporary, Sir Isaac Newton, his experiments were a material contribution to the knowledge of the laws of motion. He was also a meticulous draftsman.

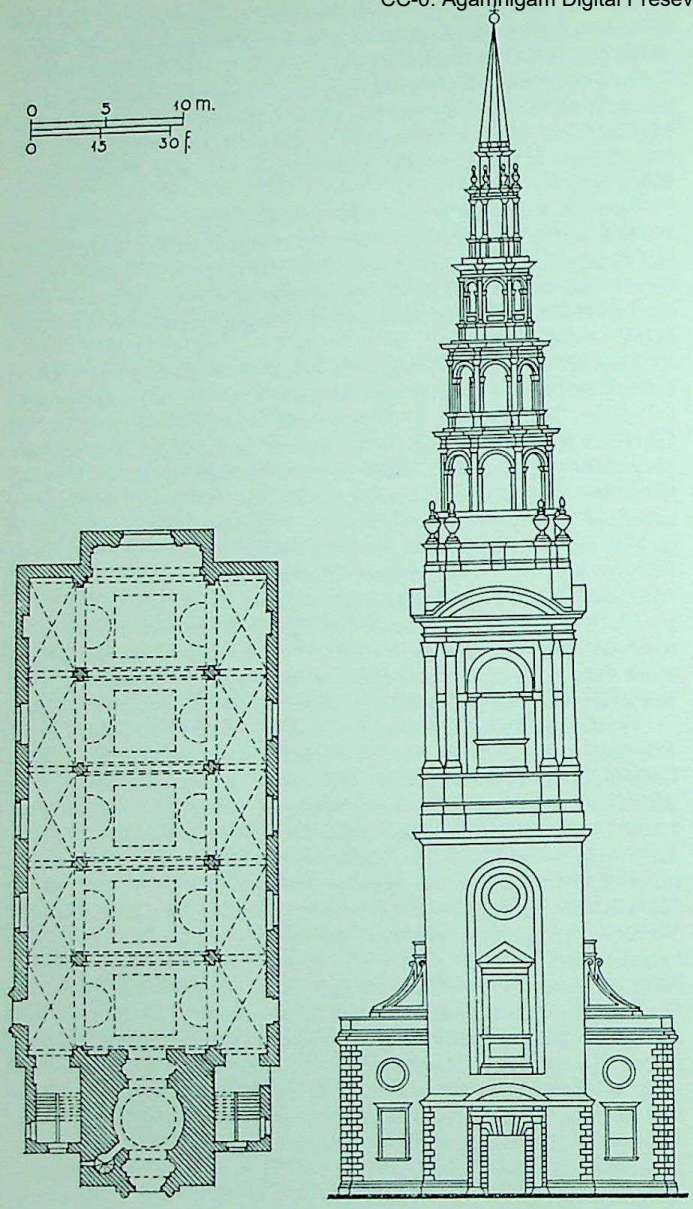
Wren's work as a scientist brought him to the notice of King Charles II, who was keenly interested in the work of the Royal Society. In 1661 Wren refused a royal commission to direct the construction of the fortifications of Tangier, part of the Queen's dowry. Later in the decade he received further proof of royal favor.

His first major building, the Sheldonian Theater at Oxford (1663–68) was a mathematical rather than an architectural triumph. This work, a great assembly hall presented to the University by Gilbert Sheldon, Bishop of London, was without precedent in England, and Wren's achievement in roofing over the 70-ft.-wide interior structure without supporting columns was noteworthy. The plan of the building, however, and its immature exterior design are clearly indicative of Wren's early concept of architecture. For his plan he had turned to antiquity, basing his design on the Theater of Marcellus (XII, PL. 284), which he knew only through Sebastiano Serlio's (q.v.) treatise. He also drew on Serlio for individual motifs of the main façade, but he was not yet capable of combining them in a coherent design, and his treatment was sometimes clumsy.

It was perhaps on Sheldon's recommendation that Wren was asked in 1663 to advise on the repair of Old St. Paul's Cathedral in London, then in unsafe condition. Before he presented drawings for this project in 1665, he paid his only known visit to the Continent, spending some months in Paris. Although he was still a scientist by profession, he was turning more and more toward architecture. Little is known about his visit to Paris, but it is certain that he met and admired Bernini (q.v.), that he was fascinated by Colbert's careful organization of the rebuilding of the Louvre, and that he bought many French engravings. The designs for St. Paul's that he presented soon after his return show that he proposed to replace the unsteady central tower with a tall dome, derived in part from that of Lemercier's Church of the Sorbonne, and that he wished to create a broad space beneath it. Although the designs were soon rendered useless by the destruction of Old St. Paul's, along with a large part of London, in the Great Fire of September, 1666, these two features were to remain in Wren's mind.

The Great Fire of London gave Wren his great opportunity. He was appointed one of the three Royal Commissioners for the rebuilding of the city, and although his baroque plan of piazzas, radiating streets, and major buildings at focal points proved too utopian, he was from that moment to devote almost all of his time to architecture. In 1669 he was made Surveyor-General of the King's Works, and he was knighted in 1673. His main contribution to the rebuilding of the city was the reconstruction of 52 churches, many of which are now destroyed, and of St. Paul's Cathedral. The churches date mainly from the 1670s; many of them were "beautified," chiefly by the addition of steeples, in successive decades. In building them Wren was faced with the problem of designing churches suitable for Protestant worship that were to be built on sites that were often irregular and confined; a further requirement was that they incur relatively little expense. He used mainly brick and plaster as his materials, with stone dressing for doors and windows; sometimes, as the site required, at least part of the exterior was constructed in stone. Wren showed endless ingenuity in the planning of these churches. The larger rectangular buildings that were divided into naves and aisles were generally conceived as basilicas on the Vitruvian pattern; there is, however, a great variety in the design of the piers and in their relation to the galleries (a motif used extensively by Wren), and also in the type of roof. In St. Bride's in Fleet Street (destroyed in 1940, since rebuilt; FIG. 855), large paired columns carry a brick and plaster barrel vault. Christ Church in Newgate Street

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



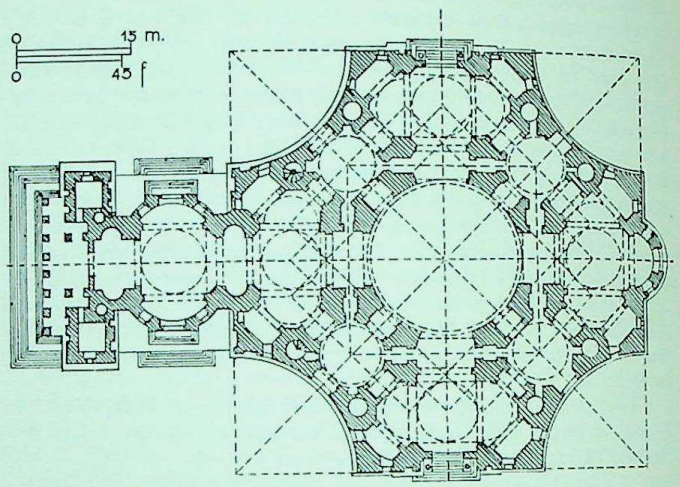
London, St. Bride's, ground plan and elevation according to the original design (*from V. Furst, The Architecture of Sir Christopher Wren, London, 1956*).

(destroyed in 1940) had single columns on high bases, a cross vault, and flat ceilings above the galleries. In St. Clement Danes (destroyed in 1940; since rebuilt) small columns start at the gallery level; this church is a freestanding building and has an apse instead of a flat east wall. Many of Wren's churches are quite small and are, therefore, built on a central plan. A few of these, such as St. Mary Abchurch, were designed with a dome over a square plan; others, among them St. Mary-at-Hill, are on a cross-in-square plan, derived, perhaps, from the Nieuwe Kerk at Haarlem. St. Stephen Walbrook (VI, PL. 435, FIG. 823), the most complex of the small parish churches, combined both of these plans.

The demands on Wren were so great during these years that he was unable to superintend all the work himself, and some of the detail in his buildings is poor. In some instances, however, such as the entrance door of St. Mary-le-Bow (ca. 1680; PL. 432), it is fine and bold and suggests that he could transmute his borrowings from earlier works into a personalized style. More interesting still is the design of his steeples, which fascinated Canaletto (q.v.) when he came to London in 1746. The tallest of these, piled tier on tier with varied outlines (PL. 432), are perhaps inspired by engravings of Giuliano San-

St. Peter's in Rome; others are composed of columns clustered around a core. The steeple of St. Magnus the Martyr at London Bridge (PL. 432) has a small open cupola, similar to that of the Church of St. Charles Borromée in Antwerp, while that of St. Martin Ludgate is in the form of a sharp lead needle and was surely conceived as a contrast to the rounded lines of the nearby dome of St. Paul's.

Wren's work on St. Paul's occupied him from about 1668 until the completion of the building in 1711. Two preliminary designs were made and rejected; one of these, a Greek-cross plan with the arms joined by concave curves (FIG. 856), survives in a wooden model (IV, PL. 194) and is said to have been Wren's



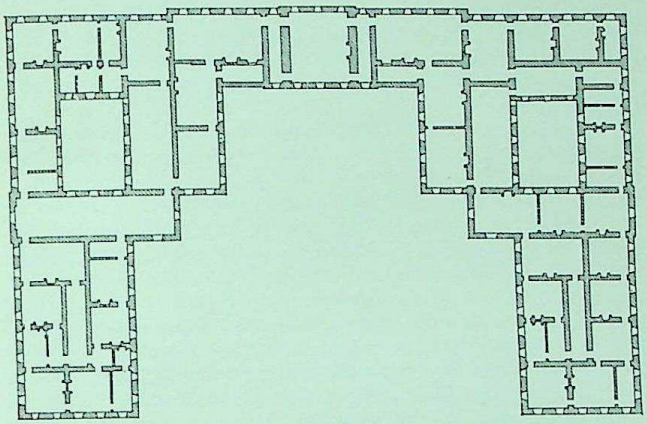
London, St. Paul's, redesigned ground plan according to one of the original designs (*from B. Fletcher, A History of Architecture, London, New York, 1950*).

favorite. The clergy, however, wanted a traditional Latin-cross cathedral (cf. VI, FIG. 822, above), and a building of this type was begun in 1675. The first design for it shows a high nave and choir flanked by lower aisles. This plan was soon altered; the upper parts of the nave walls were raised, so that the exterior rises in one unbroken plane 90 ft. to the main cornice, and, though the upper walls are only screen walls, their weight is an important factor in the buttressing of the dome. The support of the great dome was a major problem; in order to solve it, Wren adopted a system of relieving arches above the eight main piers (PL. 432). Although this device is not entirely successful the dome itself is a masterly achievement. Designed late in the architect's career (ca. 1704–11), it is a triple structure, with the high stone lantern supported by a hidden cone between the inner and outer dome (VI, FIG. 822, below). Not only is the construction admirable, but the exterior design, in which the buttressing is arranged in such a way that the sweeping circle of the drum remains unbroken, is one of the great achievements of northern European architecture. The main exterior elavation (PL. 431), dating from the late 1670s and, therefore, from much earlier in Wren's career, was inspired by Inigo Jones's (q.v.) Banqueting House (II, PL. 147) in its superimposed order of pilasters in front of a channeled wall; the rich surface decoration that ties the whole together and leads the eye from one part to another is inherently baroque. Wren wanted to give the Cathedral a giant portico, but a suitable stone was lacking. He was compelled, therefore, to employ a motif of superimposed columns, coupled to give an effect of greater volume. Above these columns, the west towers, with their broken silhouettes, are evidence that, by the end of his career, Wren was tending toward the baroque.

The same development can be seen in his public buildings. The Library of Trinity College, Cambridge (begun 1676; VI, PL. 435), with its well-proportioned stories and clear-cut, simple lines, is one of Wren's most refined designs. It is, actually, less simple than it appears, for the main-floor level is not that of the lower cornice but is dropped to the springing of the arches below in order to make a finer room above. In the Royal

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Hospital in Chelsea (PL. 433) and in Winchester Palace (not completed; FIG. 857), both begun in 1683, Wren experimented for the first time with the massing of large-scale blocks and with the use of giant orders as accents. Both buildings were created as experiments; in his first design for Hampton Court Palace (1689) he used a giant order and a dome with far greater assurance. This design proved to be too lavish, however. As something more modest and less expensive was required, he devised, instead, a brick and stone palace (PL. 433) that was domestic in nature and of a tranquil charm. Only in the King's Entrance (PL. 433), with its Ionic colonnade, is there an indication of the sophistication of the earlier, more massive design.



London, Winchester Palace, partial ground plan according to the original design (*from V. Furst, The Architecture of Sir Christopher Wren, London, 1956*).

Wren was unfortunate in his larger commissions. His splendid scheme for replanning the entire Whitehall complex after a fire in 1698 came to nothing, but it reveals an ability to plan on a great scale that is unparalleled in England. When, in 1694, the sovereigns wished to transform the existing parts of an older palace in Greenwich into a hospital for seamen (Royal Hospital; VI, PL. 435), the architect was not able to carry out his scheme for a domed central building with a long vista to the river, because it would have blocked the view from the Queen's House (by Inigo Jones; VIII, PL. 340). He produced a second solution, placing two smaller domes nearer the river and leaving a long vista open to the low block of the Queen's House, which he linked to his baroque domes by means of the horizontal line of his colonnades (VI, FIG. 821).

Few architects have accomplished so much within a lifetime. Much of Wren's work remains, but its full range can hardly be grasped without a study of the many drawings for these and for other projects, some of them abortive. Not all his buildings, if executed, would have enhanced his reputation, but they are a most impressive proof of his devotion to his profession and his ceaseless attempt to master its disciplines.

BIBLIOG. S. Wren, Parentalia, London, 1750; The Wren Society, 20 vols., London, 1924–43; G. Webb, Sir Christopher Wren, London, 1937; J. Summerson, Sir Christopher Wren, London, 1953; H. M. Colvin, A Biographical Dictionary of English Architects, 1660–1840, London, 1954, pp. 699–715; E. Sekler, Wren and His Place in European Architecture, London, 1956; M. D. Whinney and O. Millar, English Art 1625–1714, Oxford, 1957, pp. 143–52, 154–68, 200–06, 210–17, 317–33; K. Downes, Nicholas Hawksmoor, London, 1960, pp. 13–33; J. Summerson, Architecture in Britain 1530–1830, London, 1963, pp. 119–47.

Margaret WHINNEY

Illustrations: PLS. 431–433; 3 figs. in text.

WRIGHT, FRANK LLOYD. American architect (b. Richland Center, Wis., June 8, 1867; d. Taliesin West, Scottsdale, Ariz., Apr. 9, 1959).

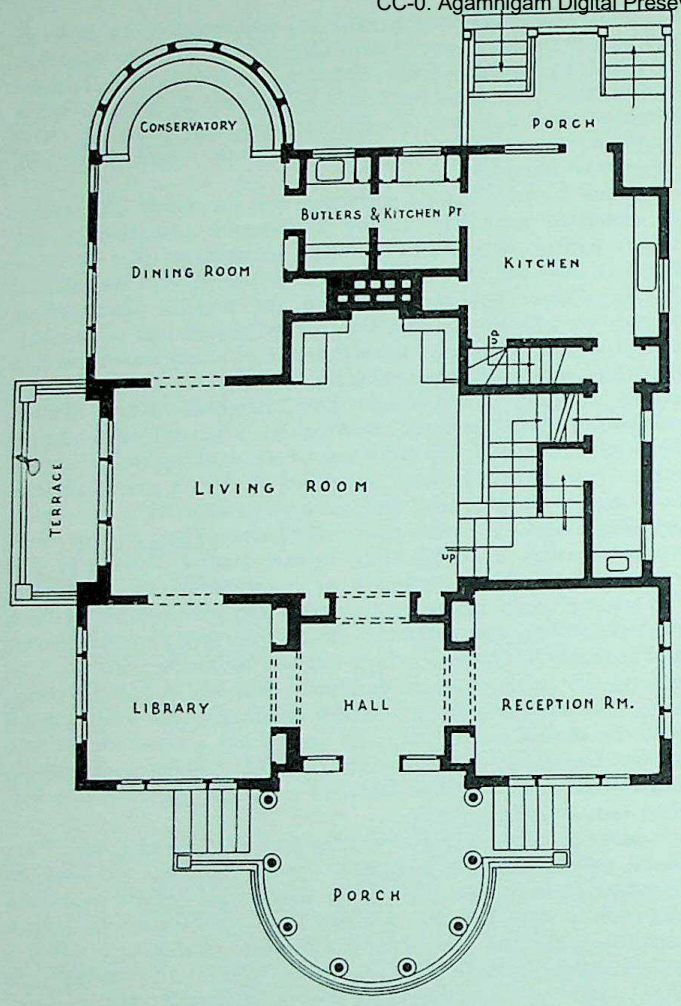
Wright's Celtic temperament was inherited from his mother, Anna Lloyd-Jones, whose father, a Welsh farmer and Unitarian minister, had immigrated to America and established a farm in rolling hill country near Spring Green, Wis. It was here that Wright later built his home, Taliesin, and founded the Taliesin Fellowship. The architect's father, William C. Wright, was a musician and preacher, English in stock but raised in New England. There were three children: Frank Lloyd, the eldest, Jane, and Maginel.

Frank Lloyd Wright's childhood was inevitably affected by an unsettled home life and by an irregular education; it was also a period of profound personal experiences that later influenced his work. In 1876, while the family lived in Weymouth, Mass., Wright was introduced to the Froebel kindergarten games, an educational method that employed sets of wooden blocks and geometrically shaped pieces of colored cardboard to construct increasingly complicated structures — structures not unlike buildings that Wright later designed. When Wright was twelve his family settled in Madison, Wis., and subsequently his summers were spent at Spring Green working on his uncle's farm — an experience that engrained in him a profound love and respect for the land and an appreciation for natural and growing things. He apparently left Madison High School without graduating, in April, 1885; in that month William Wright received a divorce on grounds of desertion by his wife, with the court records indicating that domestic harmony had seldom existed between man and wife. Wright was then almost eighteen and probably left school to help support his mother and younger sisters. He worked as a draftsman for A. D. Conover, and early the following year — while continuing his employment with the engineer-architect — he enrolled as a part-time student at the University of Wisconsin. His few courses (including descriptive geometry and drawing) were the equivalent of less than one academic year.

Early in 1887 Wright left Madison for Chicago, where he found employment with Joseph Lyman Silsbee, a residential architect from upper New York State who helped introduce the shingle style into the Middle West. Silsbee had a strong impact on Wright, who stayed, however, only 5 to 7 months before obtaining work with Dankmar Adler and Louis Sullivan (q.v.), who were then designing the Auditorium Building (1886–89) in Chicago. Wright assisted Sullivan with the ornament for this building, helped with some of the skyscraper designs and the Victoria Hotel (Chicago Heights; 1892–93), and also was responsible for designing most of the residences for which the firm accepted commissions. Best known among these was the James Charnley house of 1891, a severe, precise design of great simplicity in which was inherent the same logic found in Sullivan's skyscrapers. In violation of his contract with Sullivan, however, Wright designed several houses on his own, which led to a rupture between the two men in 1893.

When Wright entered private practice he was a skilled designer, yet nearly nine years passed before he perfected a fully mature style of his own. By 1893 he had absorbed much of the best that American architecture had to offer and had begun to synthesize it as E. E. Viollet-le-Duc — the only architectural writer he unreservedly admired — had recommended. From Silsbee and the eastern architects of the shingle style he had acquired a love for the texture of materials and had gained an appreciation for the continuity of exterior surface and for open planning — the latter being reinforced by his knowledge of Japanese architecture gained at Chicago's World's Columbian Exposition of 1893. From the architects of the academic reaction, particularly McKim, Mead & White, he acquired a profound respect for order, discipline, and the axial layout of interior space. From Henry H. Richardson he learned to appreciate monumentality, unity, and the basic dignity of architectural forms; he also learned how to relate a building to the ground. And from his "lieber Meister," Louis Sullivan, he acquired a logical, analytical approach to design and a concept of natural organic growth. This was incorporated into Wright's own theory of organic architecture: "By organic architecture I mean an architecture that *develops* from within outward in harmony with the conditions of its being as distinguished from one that is *applied* from without" (F. L. Wright, "In the Cause of Architecture, II," *Arch. Record*, XXXV, 1914, p. 406).

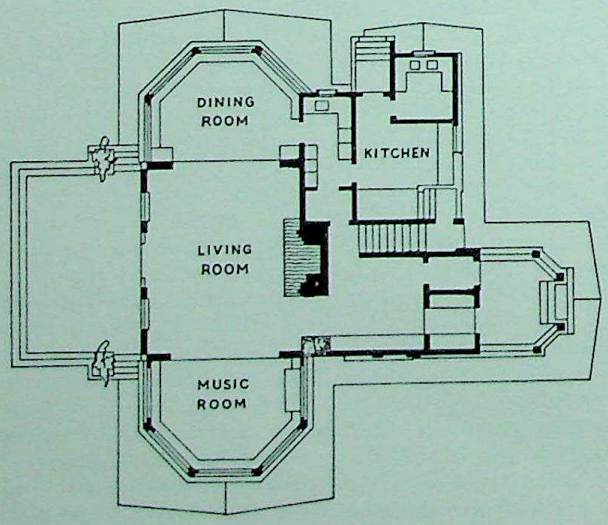
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

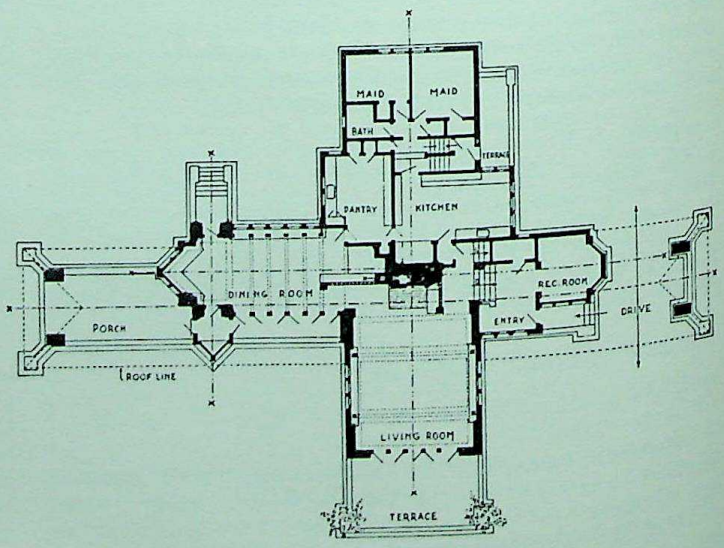


George Blossom house, Chicago, 1892, plan.

The search for a uniquely personal style took many years, yet in retrospect the line of development seems clear. First came Wright's exploration of interior space, as is evident in the plans for his own house in Oak Park, Ill., the Henry N. Cooper project (La Grange, Ill.), the McAfee project (Chicago), the Robert G. Emmond house (La Grange), and particularly the George Blossom house (FIG. 859), all of which were designed before 1894. The search for a formal architectural expression was more protracted; yet unconsciously it was essayed by 1893 in two designs for barns: the projected barn and stables for Henry N. Cooper and the barn behind the William H. Winslow house (River Forest, Ill.). What Wright had achieved, almost spontaneously, in barn design took a decade of development to attain in houses. Several of these were of seminal importance. The Winslow house, dating from shortly after Wright had left Sullivan, was of classic simplicity, with an ordered, monumental design of great forcefulness. Its broad, hipped roof, central chimney, and dominant horizontality were all harbingers of the future. The McAfee project of 1894 explored the possibilities of a lower, asymmetrical massing based on a T- or L-shaped plan that five years later was redesigned for the Joseph W. Husser house (Buena Park, Ill.; demolished) of 1899. Earlier, with the Chauncy L. Williams house (River Forest, Ill.; 1895) and the River Forest Golf Club (1898; demolished; I, PL. 90), a more horizontal massing and earth-bound form was gradually being evolved.

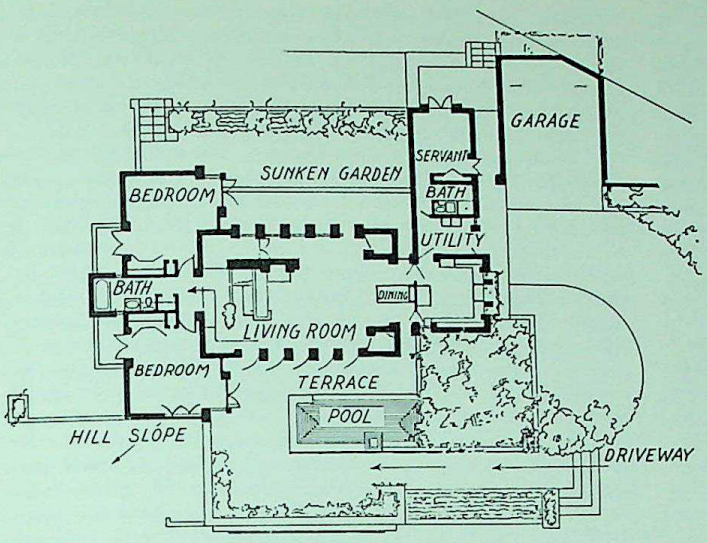
From 1900 to 1902 a final synthesis occurred between interior space and exterior form. This was first accomplished in two projects for the *Ladies' Home Journal* ("A Home in a Prairie Town" and "A Small House with 'Lots of Room in It' ") and in two houses at Kankakee, Ill. (the B. Harley Bradley house, Glenlloyd, and the Warren Hickox house), designed in 1900. For the Hickox house (FIG. 859; I, PL. 90) Wright used a modified version of the Emmond house plan of 1892, which he combined with thin, crisp gables that were reminiscent of Japanese design. But the culminating masterpiece in this synthesis, the design in which the fully mature "Prairie" house emerged, was the Ward Willits house at Highland Park of 1902 (I, PL. 90). The building stretches across the flat prairie landscape with the far-flung extremities (porch and porte-cochere) permitting a free interweaving of interior and exterior space, while near the center of the cruciform plan the massing becomes more compact and pyramidal. Particularly notable is the continuity of the horizontal surfaces — foundations, walls, rows of casement windows, and low hipped roofs — and the centrally placed living room, which extends out onto an enclosed terrace. The entire concept is dynamic, yet at rest, being locked together by a massive chimney at the crossing. The exterior materials are light: off-white stucco articulated by strips of wood that are stained rather than painted and are left unplaned. The plan (FIG. 859) is a brilliant essay in spatial organization. The open, axial — yet often static — planning of the shingle style is here redefined in terms of a flowing, interpenetrating space that, when experienced, offers tantalizing mysteries that invite exploration. The areas of various rooms (and also porches) often overlap yet are seldom directly accessible, either visually or physically, without first progressing through a predetermined series of spatial experiences. The subtlety of this spatial organization is enhanced by an inge-

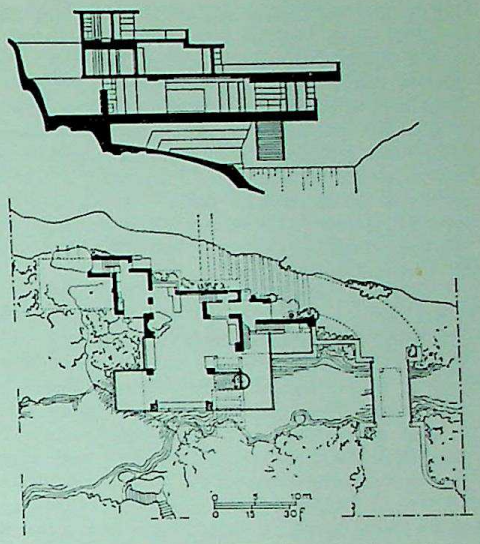




Left: Warren Hickox house, Kankakee, Ill., 1900, plan. *Right*: Ward Willits house, Highland Park, Ill., 1902, plan.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Left: John Storer house, Los Angeles, 1923, plan. *Right*: Falling Water, Edgar J. Kaufmann weekend house on Bear Run in Pennsylvania, 1936, section and plan.

nious adjustment of axes that also injects greater vitality into the plan. The three major horizontal axes, for example, are in close alignment. One coincides with the roof ridge and extends the length of the building; it defines the limits of certain interior walls. Two other horizontal axes terminate in fireplaces; one is the center line of the dining room and the other of the reception room. This subtle adjustment is also reflected in the exterior elevations, where the ridge of the porte-cochere roof (at the right) is on a line with the eave of the porch (at the left). It is precisely because of these complexities of design that the Ward Willits house achieves such vigor and unity, and it is here that the essence of Wrightian space may be fully appreciated.

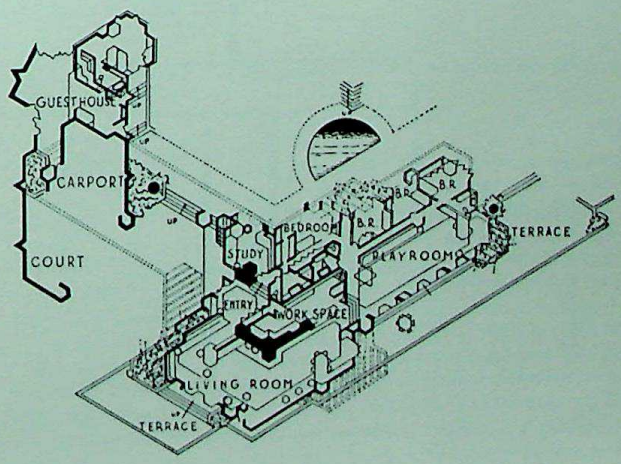
Two other designs from 1902 also attest to Wright's mastery. One is the Arthur Heurtley house (Oak Park, Ill.), which is more in the Richardsonian tradition and which revives the broad, hipped roof of the Winslow house (yet with a more plastic envelope around its asymmetrical plan). The other is the Hillside Home School (Spring Green, Wis., later incorporated into the Taliesin Fellowship complex), which is distinguished by its rough-faced masonry piers and broad areas of vertically divided glazing. This assertive use of piers foreshadows certain nonresidential designs such as the Larkin Company Administration Building (Buffalo, N.Y.; now demolished; see I, col. 261) and Unity Church in Oak Park, Ill., of 1906.

Unity Church (I, PL. 91), with its great corner blocks (stairways) and its broad yet high podia upon which rest piers that support the cantilevered slabs of the roof, is almost an embodiment of the Froebel kindergarten constructions. The roof slabs, repeated on the four sides, effectively reiterate the truncated cross of the auditorium plan. The structure is of reinforced concrete — one of the earliest examples of its use in the United States — and the aggregate is left exposed on the surface. A low attic story is inset with deep, square light wells that provide interior illumination and simultaneously establish the square-and-right-angle theme of the interior decoration (PL. 434). The interior space is considerably enlivened by the location of the peripheral balconies at half levels above the auditorium floor.

These nonresidential designs, culminating with Unity Church, influenced Wright's residential work and resulted in the more cubic, slab-roof type of design evolved in three projects of 1906 — the Warren McArthur apartment house, the "Fireproof House for $ 5,000" for the *Ladies' Home Journal*, and the studio house for Richard Bock. Soon, however, the heavy enclosing walls of these projects were replaced by long bands of windows, projecting porches, and cantilevered balconies that echoed the slab of the roof and simultaneously developed a rich interplay between interior and exterior space. Nowhere is this better seen than in the splendid little Thomas Gale house in Oak Park, Ill., of 1909 and the Mason City, Iowa, hotel of 1910.

It is generally assumed that no apparent development occurred in Wright's Prairie houses after the concept was formulated in 1900–02, yet the preceding analysis suggests the contrary. Actually, three principal types of Prairie houses are distinguishable, typified respectively by the Willits house, by the Heurtley house, and by the slab-roof houses commencing in 1906. By analyzing any Prairie house in relation to these types it is possible, upon stylistic evidence alone, to place it chronologically among other designs and to approximate its date. The Frederick C. Robie house (PL. 435), for example, is related to the Willits type, yet its almost cubist interplay of sliding planes and geometric masses indicates that the design postdates 1906. Similarly the stabilized planes and symmetrical massing of the Avery Coonley Playhouse (Riverside, Ill.; altered, now a residence) — the progenitor of which was the Isabel Roberts house (River Forest, Ill.) — represent a still later development and prefigure the brilliant design of Midway Gardens (1914, demolished 1923; PL. 434; see I, col. 262), where virtuosity and inventiveness reached a high point even for Wright's career.

By the date of Midway Gardens — that is, by 1914 — Wright was already internationally known as an architect. His work was first published in 1900, and the following year his



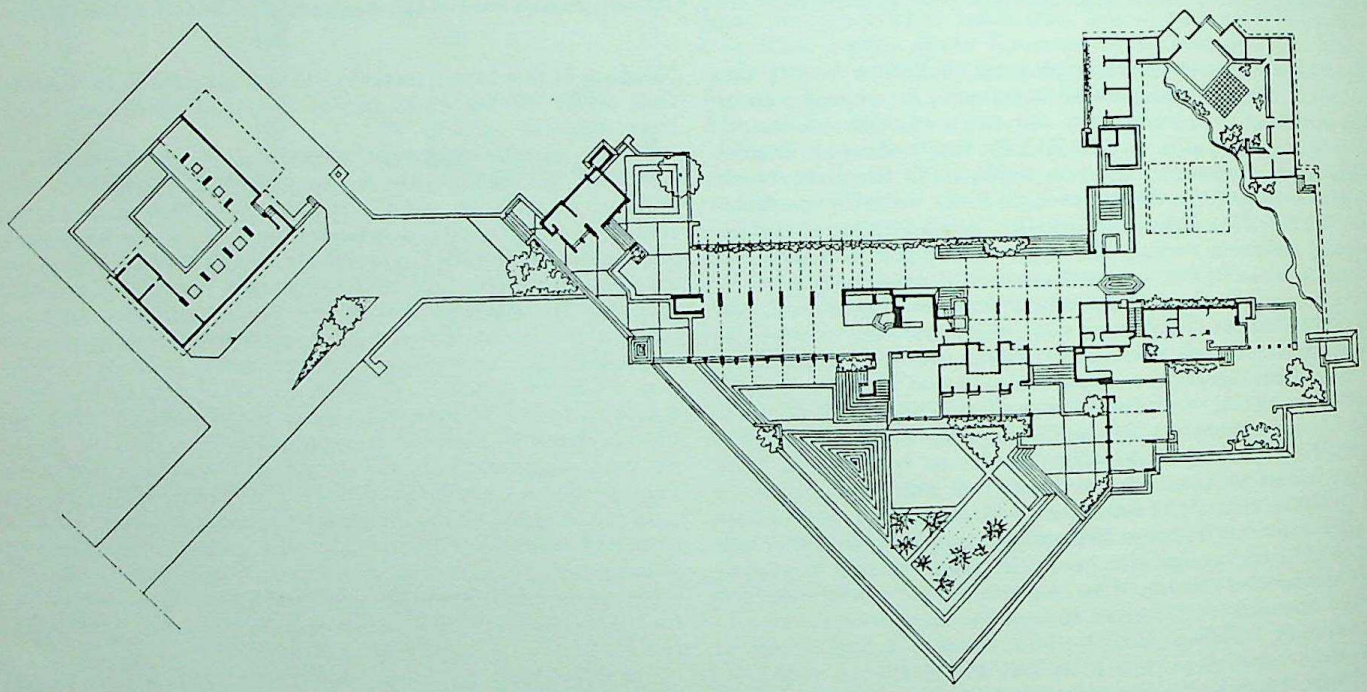
Paul R. Hanna house, Palo Alto, Calif., 1937, plan.

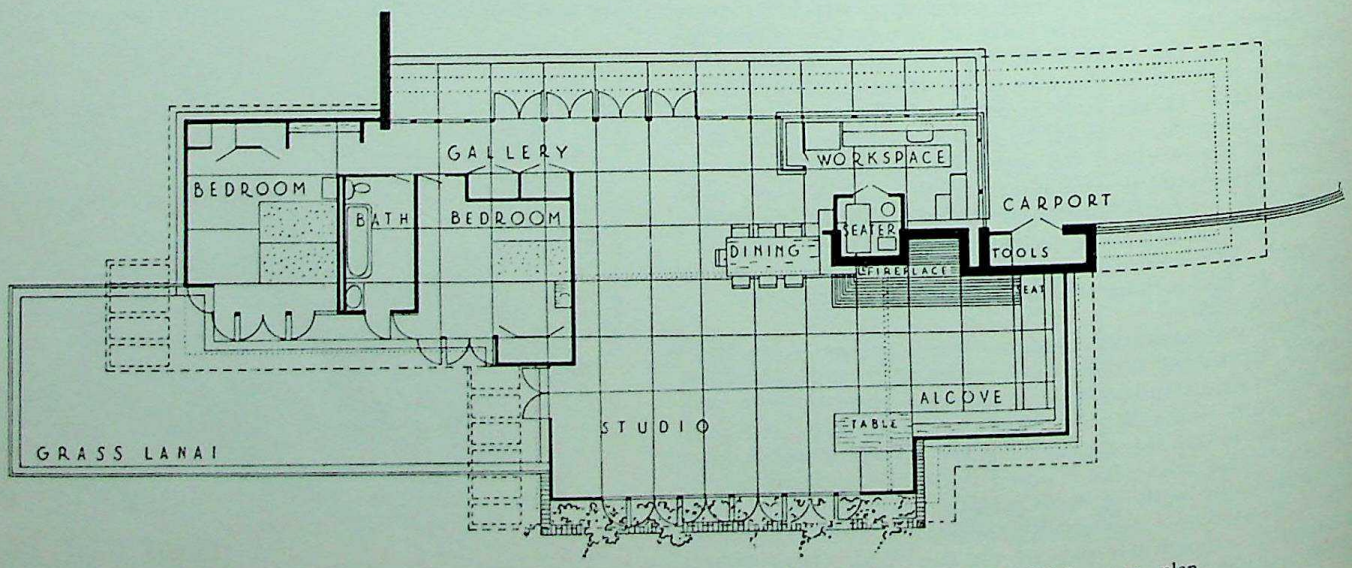
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

talk, "The Art and Craft of the Machine," was printed. In 1908 he wrote "In the Cause of Architecture," with its sequel appearing in 1914. But of unique significance was *Ausgeführte Bauten und Entwürfe von Frank Lloyd Wright*, a magnificent folio of 100 plates (perspective drawings, plans, and details), which was published by Ernst Wasmuth in Berlin in 1910. This work profoundly influenced European architectural design and as such stands as one of the most important architectural publications of modern times. In 1911 Wasmuth published another volume devoted to Wright's work, in this instance illustrated with photographs and with an introduction written by Charles Robert Ashbee.

Wright's private life had a direct influence on his professional career. After his marriage he built a home (1889) in Oak Park, Ill., beside which he constructed a studio (1895). There he employed five or six assistants (several of whom, notably Walter Burley Griffin, Barry Byrne, Marion Mahony, and William Drummond, later made substantial contributions on their own). But family discord developed, and in October, 1909, Wright left his wife, six children, and a thriving architectural practice and departed for Europe with Mamah Borthwick, the wife of a former client. Upon his return he built Taliesin on the Lloyd-Jones homestead near Spring Green, Wis., where, in 1914, a deranged servant brutally murdered Mamah Borthwick, her two children, and four employees before setting fire to the house. Wright, who was at Midway Gardens at the time, rebuilt Taliesin, but the human loss apparently unnerved him and for years he was destined to roam. The Midwest no longer held his interest, but rather Japan and California.

Architecturally he sought greater monumentality, and in pre-Columbian architecture he found new inspiration. This was particularly manifest in the A. D. German Warehouse (Richland Center, Wis.; ca. 1915), in the decoration for the F. C. Bogk house (Milwaukee; 1916), and in several of his California houses, notably those for G. M. Millard (Pasadena), Charles Ennis (Los Angeles), and Aline Barnsdall (Hollyhock House; Los Angeles), all of which were completed between 1920 and 1924. The plan of the Barnsdall house repeats the basic cruciform layout common to Wright's Prairie houses, but at the John Storer house (Los Angeles; FIG. 861) of 1923 a significant change may be noted. The organization is looser, with the walls creating pavilions of space on a broad terrace; interior and exterior seem almost interchangeable, with areas being defined, rather than confined, by the walls. In the building of these California houses (except the Barnsdall house, which was the earliest) Wright experimented with a precast





Above: Taliesin West, Scottsdale, Ariz., 1938, plan. *Below*: Winkler-Goetsch house, Okemos, Mich., 1939, plan.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

reinforced-concrete-block type of construction. This permitted the casting of decorative patterns on the face of each block, an idea that he had first introduced at Midway Gardens.

Prior to 1922, however, Wright's major concern was not the houses in California but rather the Imperial Hotel (PL. 436) in Japan, a vast H-shaped complex of buildings that were jointed and "floated" on the thin earth crust of Tokyo in such a way as to resist the frequent earthquakes. The exterior material was brick trimmed with richly carved lava stone, and the effect, at least as seen in photographs, was somewhat heavy and ponderous.

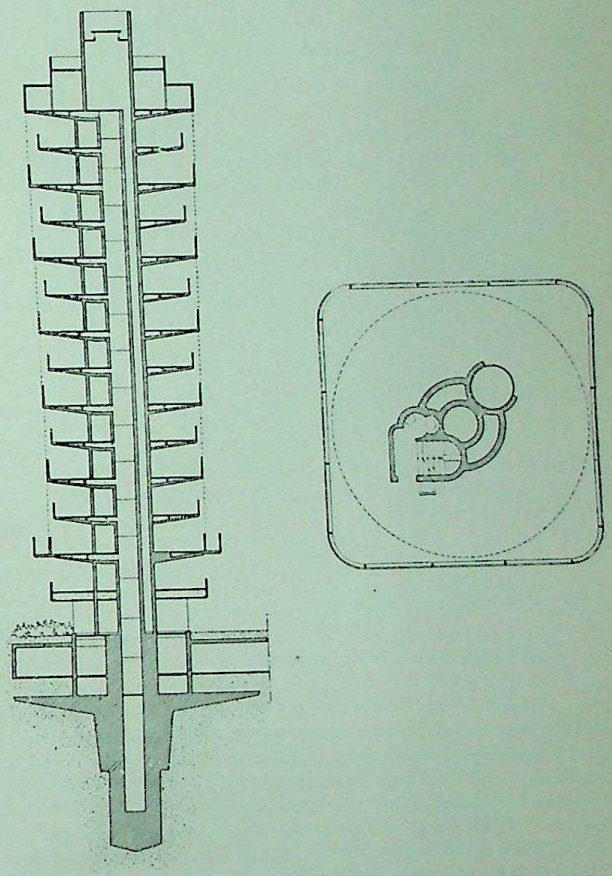
The remaining years of the 1920s, in spite of the building boom that preceded the depression, were not materially prosperous for Wright. Few commissions were realized, although several grand projects were designed. Yet during this decade Wright formulated many ideas that were exploited in later years. The 1929 project for the tower of the vestry of St. Mark's-in-the-Bouwerie (New York) became the prototype for the Price Tower of 1953 (PL. 437; FIG. 868); and the spiral shape for the Gordon Strong Automobile Objective (Sugar Loaf Mountain, Md.) of 1925 was the progenitor of such designs as the Solomon R. Guggenheim Museum (X, PL. 217, FIG. 414), the Baghdad Opera House project (PL. 438), and the project for the Pittsburgh Golden Triangle (I, PL. 408). The project for a steel cathedral of 1926 matured as the Beth Sholom Synagogue at Elkins Park, Pa., of 1956; and the valley-leaping arches of the Edward H. Doheny ranch development (Los Angeles) of 1921 were finally realized in the Marin County (Calif.) Civic Center buildings of 1959 (PL. 438). New ideas for plans were also initiated during these years; the most significant was the use of the 60/30-degree triangle for formulating the plan rather than the traditional 90-degree angle. The 60/30-degree method was first used in Wright's projects for San Marcos-in-the-Desert (Chandler, Ariz.) of 1927 and was fully developed in the Paul R. Hanna house (FIG. 862) at Palo Alto, Calif., of 1937.

In the late 1920s, after two divorces, Wright's personal crises ended happily in an enduring marriage. The domestic tranquillity that ensued, plus the encouragement of his wife, led Wright in 1932 to write his autobiography and to found the Taliesin Fellowship. The Fellowship, which eventually numbered three- or fourscore students, was organized on the broadest possible educational basis; ideally, if not in practice, each student devoted equal time to domestic and farm labors, to construction work and the processing of materials, and to work in the drafting room. The community was largely self-supporting — a necessity during the depression years. The milieu was ideal for Wright; he was always at his creative best when in the company of younger people, and the Fellowship effectively reestablished, although on a more autocratic basis, the environment of his earlier, highly productive Oak Park years.

The Fellowship soon became involved with Broadacre City (PL. 147), Wright's defiant response to the spreading metropolis that he held in such disdain. Broadacre was, in fact, not a city but rather a community of strictly limited size where the agrarian ideal was preserved by providing each family with its own home and arable plot of land. This necessitated low-cost housing, a design problem repeatedly attacked by Wright, as in his project for American System Ready-Cut houses of ca. 1915 and in his experiments with concrete-block construction in the early 1920s. The development of the "Usonian" house was another step in this direction.

The real symbols of Wright's comeback as an architect were two brilliant designs of 1936: the Edgar J. Kaufmann weekend house, Falling Water, on Bear Run in Pennsylvania, in which cantilevered planes dramatically hover over a forest brook (FIG. 861; I, PL. 91), and the Johnson Wax Company Administration Building at Racine, with its smooth, curving surfaces of brick and glass tubing and its tapering interior columns (PL. 437; I, PL. 415). Although different in appearance, both designs reflect Wright's awareness of European (specifically Dutch and German) design, which had earlier received much impetus from his work. Wright's response to contemporary Dutch architecture, with its brick construction, strong horizontals, and continuity of seemingly thin (and often curved) exterior surfaces, is evident in the Johnson building and in the Herbert F. Johnson house, Wingspread (Wind Point, Wis.). In Falling Water (see I, col. 268), on the other hand, Wright reinterpreted his own earlier work in terms of the international style (perhaps as a dramatic gesture to demonstrate that, first, he could outdo the European architects at their own game and, second, he had done it first anyway). For this design his most immediate source was his own Thomas Gale house in Oak Park, of 1909.

In 1938 Wright began to build a winter home in the desert, called Taliesin West, in Scottsdale, Ariz. (PL. 437, FIG. 863; VIII, PL. 116). Stone set in concrete and canvas stretched on wood comprised his materials; the design, although highly ceremonial in layout, rested quietly in the desert landscape to which it seemed to belong. Rugged masonry, primitive in its simplicity, contrasted with the translucent, tentlike canvas covering, while the rust-colored stone and the redwood trusses harmonized with the desert hues and dramatically repeated the silhouette of the mountain backdrop.



Research Laboratory Tower, Johnson Wax Company, Racine, Wis., 1947, section and plan.

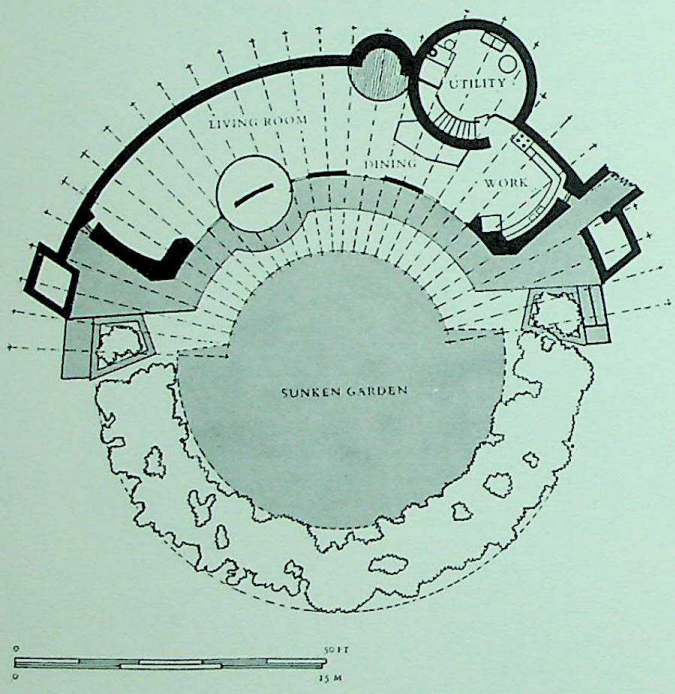
During what is often called Wright's "second career" — that is, the period from 1936 until his death — there is no characteristic design, such as the Prairie house, that typifies his work. In this brief discussion, however, his buildings will be grouped, according to their plans, as designs based on right angles, on triangles, or on circles. The Usonian houses are typical right-angle plans, and the Winkler-Goetsch house at Okemos, Mich., of 1939, is a particularly fine example (FIG. 863). The open planning first noted at the Storer house (FIG. 861) is here adjusted for a more rigorous climate without loss of freedom in interior arrangement. Nor has Wright neglected the human need for intimacy and seclusion, which are provided by the cavelike "alcove" with its dim lighting from above and its warmth-giving fireplace. On the exterior the most striking

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

features are the slab roof that hovers over the cubic masses and the spur walls that define rather than enclose the space. Although the imprint of Mies van der Rohe is apparent, the interpretation is entirely Wright's; the materials — brick, redwood, and glass — harmonize with the site to an extent unknown in European design.

Level sites were requisite for Wright's earliest designs, but first at Taliesin and then with the California houses he began utilizing hillsides and ravines, until finally, in a complete reversal of his initial practice, he elevated houses that were situated on the prairie (Lloyd Lewis house, Libertyville, Ill.; 1940) or on the desert floor (David J. Wright house, Scottsdale, Ariz.; I, PL. 424; 1952). Falling Water is, of course, the most dramatic instance of this; the George D. Sturges house (Brentwood Heights, Calif.) and the John C. Pew house (Shorewood Hills, Wis.) of 1939–40 are also splendid examples.

Designs based on circles and spirals developed from the Ralph Jester house project of 1938. Designed in abstractly ar-



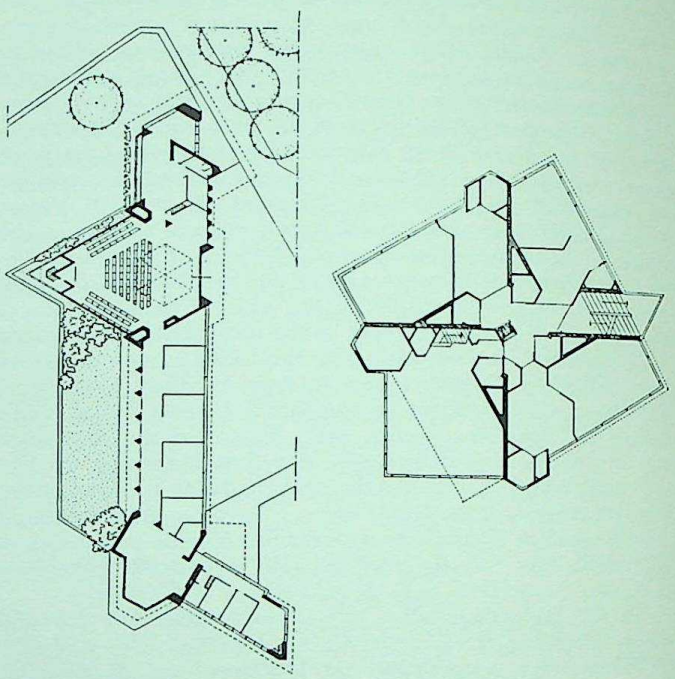
Herbert Jacobs house, Middleton, Wis., 1948, plan.

ranged circles, the various components of this house (rooms, garden walls, and swimming pool) strikingly recalled (when read in plan) Wright's decorative murals for Midway Gardens. Segments of circles (arcs) were also exploited by Wright at the Herbert Jacobs house, Middleton, Wis., of 1948 (FIG. 867). Here the arc shape was tucked into the ground with its outer perimeter banked with mounded earth and its interior view focused on a central sunken garden. Other variations on this theme were built by Wright for his sons: the David Wright house, which spiraled up from the Arizona desert floor, and the Robert Llewellyn Wright house near Bethesda, Md. (1953), which consisted of several cantilevered segmented circles.

Circular shapes were of great importance in Wright's nonresidential designs, for example, the previously mentioned Guggenheim Museum, initially designed in 1943, the Golden Triangle designs for Pittsburgh, and the Baghdad Opera House project. The double saucer — a circle in plan — first entered Wright's vocabulary of forms in the late 1940s and was realized in the splendid Greek Orthodox church at Wauwatosa, Wis. (1956–59), with its saucer-shaped auditorium crowned by a low "floating" dome.

Triangles were less common in Wright's work than circles and generally predate them. Excellent examples are the Hanna house (FIG. 862), the layout of the grounds at Taliesin West (FIG. 863), the plan and elevation of the Unitarian Church in Madison (FIG. 868; 1951), the Beth Sholom Synagogue, and the Price Tower (FIG. 868).

The Price Tower and the Research Laboratory Tower (1947; PL. 437, FIG. 866) for the Johnson Wax Company in Racine were the only towers built by Wright; he designed many others. The structural system he devised during the 1920s for towers was revolutionary. The floors were not supported on load-bearing walls; instead Wright, using the analogy of a tree with its tap root and branches, cantilevered the floors from a central core that was rooted deeply in the ground. From the extremity of the floors was hung a curtain wall.



Left: Unitarian Church, Madison, Wis., 1951, plan. *Right*: Price Tower, Bartlesville, Okla., 1953, plan.

In later years Wright's designs apparently were more decorative, that is to say, richer in their color scheme and more varied and intricate in form. But much of this richness existed only in the preliminary projects (cf. PL. 438; I, PL. 408, below) and was not incorporated in those buildings which were actually constructed by Wright (cf. X, PL. 217). The executed buildings were inevitably more monumental and severe than the earliest designs would lead one to expect.

Wright's architecture always expressed a uniquely American point of view — his was the tradition of Emerson, Thoreau, and Whitman. He believed in Jeffersonian democracy, an agrarian state, yet held himself to be of the aristocratic elite. His inspiration was derived from nature and from the land; his buildings were of the earth, bound to it, and usually inseparable from it while echoing its horizontal lines. His materials, particularly in his early career, recalled their natural state: wood direct from the sawmill, never planed, sanded, or painted, and the earth-given materials of brick or rough quarried limestone. He rethought the problem of the house, and the result was the destruction of the box; he opened the house within itself and opened it out to nature.

It is in the realm of architectural space rather than that of architectural forms that Wright made his most valuable and enduring contribution. Intangible and elusive — and fully comprehended only by those who have experienced them — Wright's splendid essays in interior space owe their uniqueness not to what he achieved in monumental buildings but rather to what he so brilliantly created for the individual in the single-family private house.

LISTS OF WORKS. Three lists of Wright's innumerable works are readily available, each being appended at the back of a book. The

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

only complete list that includes executed works (but without street addresses) and projects, together with biographical information, appears in Olgivanna Lloyd Wright, *Frank Lloyd Wright: His Life, His Work, His Words*, New York, 1966. A list that includes works, with addresses, and projects up to 1941 is published in Henry-Russell Hitchcock, *In the Nature of Materials*, New York, 1942, where most of the important items are illustrated. *Frank Lloyd Wright: Writings and Buildings*, edited by Edgar Kaufmann, Jr., and Ben Raeburn, New York, 1960 (available in paperback), contains a directory, arranged geographically, of Wright's executed designs.

BIBLIOG. Wright was a prolific author, yet a good idea of his thought and style may be gained by reading *An Autobiography* (published in 1932 and enlarged in 1943; London, New York, Toronto), the so-called Princeton lectures (*Modern Architecture . . . Kahn Lectures for 1930*, Princeton, 1931), *A Testament* (New York, 1957), and *Frank Lloyd Wright on Architecture, Selected Writings 1894–1940*, edited by Frederick Gutheim, New York, 1941.

The standard monograph on Wright, and the best single source of illustrations, is Henry-Russell Hitchcock, *In the Nature of Materials*, New York, 1942, which was published 17 years before Wright's death. For a detailed study of his early career see Grant C. Manson, *Frank Lloyd Wright to 1910, The First Golden Age*, New York, 1958, and for a short and provocative account of his entire life work see Vincent Scully, Jr., *Frank Lloyd Wright*, New York, 1960. The chronological documentation for Wright's early life (prior to 1887), including the factual evidence for his 1867 (vs. 1869) birth date, is contained in Thomas S. Hines, Jr., "Frank Lloyd Wright — the Madison Years," *Wisconsin Magazine of History*, L, 2, Winter 1967, pp. 109–19. Bruno Zevi, in *Towards an Organic Architecture*, London, 1950, emphasizes Wright's contribution in the domain of architectural space, and Norris Kelly Smith, *Frank Lloyd Wright, A Study in Architectural Content*, Englewood Cliffs, N.J., 1966, presents an interpretation of Wright as a designer. For a fascinating account of Wright's maternal ancestry — the Lloyd-Joneses and their immigration to America — see Maginel Wright Barney (Wright's sister), *The Valley of the God-almighty Joneses*, New York, 1965. On the specialized topic of Broadacre City there is an incisive article by George R. Collins, "Broadacre City: Wright's Utopia Reconsidered," in *Four Great Makers of Modern Architecture*, New York, 1963, pp. 55–75. Architectural drawings by Wright are illustrated in color in *Frank Lloyd Wright, Drawings for a Living Architecture*, edited by Edgar Kaufmann, Jr. (New York, 1959); and 300 drawings are reproduced in the Museum of Modern Art book/catalogue by Arthur Drexler, *The Drawings of Frank Lloyd Wright*, New York, 1962. For an analytical study of Wright's early drawings see H. Allen Brooks, "Frank Lloyd Wright and the Wasmuth Drawings," *Art Bulletin*, XLVIII, 2, June 1966, pp. 193–202.

An extensive bibliography of books and articles by and about Frank Lloyd Wright (up to 1958) will be found in Grant C. Manson, *Frank Lloyd Wright to 1910*, New York, 1958; also useful, but not widely available, is Bernard Karpel, *What Men Have Written about Frank Lloyd Wright: A Bibliography Arranged by Decades from 1900 to 1955*, published by House Beautiful Magazine, New York, 1955. Many previously out-of-print publications are now available in reprints and facsimile reproductions.

H. Allen BROOKS

The figures illustrating this article have been taken from the following sources: FIGS. 859 above left, 861 left and right, 862 and 863 above and below are from H.-R. Hitchcock, *In the Nature of Materials*, New York, 1942; FIG. 859 left below is from H.-R. Hitchcock, *Architecture: 19th and 20th Centuries*, Harmondsworth, 1958; FIG. 859 below right is from G. Manson, *Frank Lloyd Wright to 1910, The First Golden Age*, New York, 1958; and FIG. 867 is from H.-R. Hitchcock and A. Drexler, *Built in U.S.A.*, New York, 1953.

Illustrations: PLS. 434–438; 8 figs. in text.

WU LI. Chinese painter of the Ch'ing dynasty (b. 1632; d. 1718). Wu Li was born in Ch'ang-shu, Kiangsu, the same province in which four other Ch'ing masters, the "Four Wangs," were born (see WANG SHIH-MIN, CHIEN, HUI, AND YÜAN-CH'I). He was also known as Yü-shan, Mo-ching-tao-jên, and T'ao-chi-chü-shih, and after his conversion to Catholicism his teacher, Father Philippe Couplet, gave him the name Simon Xavier. He accompanied Father Couplet in 1681 to the Portuguese island of Macao, where he entered the Jesuit order. In 1692 he was ordained priest under the name Acunha and was put in charge of a mission post in Chia-ting (Kiangsu). He died in 1718 while on a trip to Shanghai.

Wu Li was not raised in the home of an art collector or art dealer as were the "Four Wangs," who from their youth had the opportunity to study and to copy outstanding works of masters of the Sung (960–1279) and Yüan (1260–1368) periods in order to develop their own styles. Wu Li was, however, a friend of both Wang Shih-min and Wang Hui, who taught him a great deal. He led a rather secluded life in his youth, pursuing his hobbies of music, poetry, and painting and reading the philosophy of religion. He aspired to the Confucian ideal of *wên*, for which the polite arts were a vehicle (see CONFUCIANISM). The stress *wên* placed on the personality of the individual artist was manifested in the visual arts by *wên-jen-hua*, or literati painting. This is reflected in an inscription on a painting by Wu Li that reads, "Even in ancient times it was said when speaking of paintings that only eminent men have the talent for brush and ink. Only he who has recognized that the use of brush and ink is not merely a matter of scrupulous performance, that one must free himself from time-bound thinking, and that one must understand clearly what is meant by that purification which for our inner selves is like a bath in snow — only he understands how to handle the brush in natural harmony with the quickening breath of heaven and earth! He who can become a part of his surroundings, as the mist is one with the rain, can fashion something meaningful from the countless phenomena which he strives to bring to expression." This inscription is an expression of Wu Li's conviction that what is tied to time and place has only transient value. Hence the European paintings that he saw in Macao had no influence on his style, which derived its character from a Confucian education, as did the styles of the "Four Wangs." Wu Li was brief and to the point in his criticism of these European paintings, with their views in perspective, saying: "In our paintings we do not aspire to an exact reproduction of form or to the creation of an impression of depth, as if one were peering into a cave; they, on the other hand, are striving for precisely this cavelike effect."

In his paintings of mountains and streams (PLS. 439–441), which were to him the symbols of the functioning cosmos, Wu Li sought to reproduce the breath of the spiritual horizon that he had developed step by step within himself. Technique was for Wu Li merely a means to the end of capturing this spiritual essence, and he believed that the individual style of each artist was uniquely suited to express that artist's thoughts and feelings. He says in an inscription on another of his paintings: "*Steep Cliffs and Deep Woods* is an exceptionally fine work of Huang Kung-wang [1269–1354]. . . . The brushwork in this painting is of remarkable virtuosity. Each time that I visited Wang Shih-min's studio I asked him to let me view this painting, and since I always had my brush with me, I copied it. Although I followed the original to the smallest detail, it was quite difficult to achieve the same feeling." He is referring in this inscription to the specifics of brush manipulation, for the paintings of the Ch'ing literati often differed not in the content of the landscape they chose to represent but principally in the manner of using the brush. The brushwork of these artists has such a personal character that one can recognize the hand of a great painter from even a small section of his painting, just as one familiar with a person's handwriting can recognize a letter from him by a mere glance at the envelope. Wu Li himself utilized exceptionally short strokes to fill in his outlines. In whatever style he chose to paint, therefore, his work can be readily distinguished from that of the four Wang masters.

Literati painters were inspired not only by the works of the great masters who preceded them but also by poetry, music, and nature itself. Wu Li had a particularly strong interest in music and poetry. One of his paintings, *Zither Player in the Mountains* (1674; Shanghai, Coll. Chang Tsung-yü), reflects his happy memories of having studied that instrument in his youth, and in an inscription of a painting he wrote: "I would like to paint a picture, 'The Zither Sings through the Valley of Pines,' in order to express these thoughts . . . . Today as I returned from a lengthy visit and the sky was clearing after a long rain, I wrote — in the ancient style — the following poem in seven-word lines: With the sound of the zither one should mimic the clear call of the birds. For twenty years I have striven under this Master! Today I listen to the pines, the mountain torrents, the waterfalls. When the water cascades down from the high mountains, one no longer needs to touch the strings." In reference to his painting of a site celebrated in a poem of T'ao Yüan-ming, Wu Li wrote, "Then I could sympathize in the depths of my heart with the words of T'ao Yüan-ming, and his poetry will nurture this painting."

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

All of Wu Li's paintings were signed with his Chinese names, not with the Christian name that had been given him. He maintained his Confucian approach toward everything that surrounded him, and to the end of his life he painted with the Confucian eye of all-embracing discernment. Thus he united a Christian approach with the philosophical detachment of the cultured Confucianist.

SELECTED WORKS ATTRIBUTED TO WU LI. Signed hand scroll of a landscape, 1699, Lugano, Coll. J.-P. Dubosc. – Landscape after Wang Mêng, 1707, Washington, Freer Gall. – Landscape with a scholar in a hut, inscription 1703, Met. Mus. – Mountain landscape after Wang Mêng, Osaka, Municipal Mus., Coll. Abe. – Mountain landscape in autumn, signed fan painting, Boston, Mus. of Fine Arts. – *Myriad Valleys and the Flavor of Pines*, signed, Cleveland, Mus. of Art.

BIBLIOG. V. Contag, Die sechs berühmten Maler der Ch'ing-Dynastie, Leipzig, 1940; A. W. Hummel, Eminent Chinese of the Ch'ing Period (1644–1921), II, Washington, D.C., 1943–44, pp. 875–77; O. Kümmel, ThB, s.v.; O. Sirén, Chinese Painting: Leading Masters and Principles, London, New York, 1956–58, V, pp. 184–92, VII, pp. 446–49; V. Contag, Konfuzianische Bildung und Bildwelt, Zurich, 1964.

Victoria CONTAG

Illustrations: PLS. 439–441.

WU TAO-TZŬ. The one painter who has been extolled by Chinese critics of every period as the greatest master in all categories of subject matter is the T'ang master, Wu Tao-tzŭ. He is ranked above all others in the *shên* ("inspired grade"). Wu Tao-tzŭ was born probably about 680, and the period of his florescence coincided with the golden age of T'ang painting under Emperor Ming-huang (T'ang Hsüan-tsung, 712–56; see CHINESE ART). He is described as having been possessed with a kind of divine energy and alone of all painters is said to have been the master of all "Six Principles" of painting. His repertory of subjects is thought to have included Buddhist icons, landscapes, clouds, dragons, human figures, demons, birds and beasts, architectural subjects, flowers and grasses, and terrifying hell scenes. It is not at all surprising that, when even in the 12th century Master Wu's paintings were a rarity, not a single original has survived to the present day.

Wu learned his craft from a calligrapher, not a painter, and this training may explain the tremendous power of his draftsmanship, as described by critics of the late T'ang and Sung dynasties. Various comments on his performance in such works as the *Li-tai ming-hua-chi* (*A Record of the Famous Painters of All the Dynasties*) and the *T'ang-ch'ao ming-hua-lu* (*Celebrated Painters of the T'ang Dynasty*) can give at least some idea of the character of his style. His paintings are described as bold and filled with supernatural energy: "When Master Wu was about to paint the halo of a divinity on the central gate of one of the temples in the capital, old as well as young, who raced to the spot to get a view, surrounded him like a dense hedge, and then raising his brush, he swirled it about with the force of a whirlwind, so that all the people said he must be receiving supernatural aid." Another passage says that "in some places there are wall paintings by Master Wu done entirely in ink, and in recent years there has been no one who could justly add color to them." Of the many works formerly attributed to Wu Tao-tzŭ, such as the Śākyamuni trinity in the Tōfukuji (PL. 442), none is now recognized except as remote reflections of his style. The pair of landscapes in the Daitokuji (Kyoto) formerly attributed to Wu are now assigned to the circle of Li T'ang.

There are innumerable literary references to great cycles of wall paintings of Buddhist subjects executed by Wu Tao-tzŭ in temples in and around Loyang (Honan), but certainly all these had been destroyed even before the end of the T'ang period in the course of persecutions of Buddhism and in other civil disturbances. The great painter and critic of the late 11th and early 12th centuries, Mi Fei (q.v.), states that in a lifetime devoted to the appreciation of ancient paintings he had seen only four pictures that could be attributed to the hand of Wu Tao-tzŭ. Among the engraved copies of lost works by Wu is a stone at Chengtu representing the emblem of the north, an entwined tortoise and serpent, a single rubbing of which is in the British Museum. Another engraved stone, depicting Confucius and a pupil, is in the Pei-lin at Sian (Shensi). A scroll representing the miraculous events attending the birth of the Buddha (Osaka, Municipal Mus., Abe Coll.) has been attributed to Wu Tao-tzŭ, but its style can hardly be earlier than the Ming dynasty (1368–1644) or perhaps even the Ch'ing period (1644–1912), so that it is at best no more than a shadow of the great artist's style.

Perhaps the most accurate reflections of Wu Tao-tzŭ's style are to be found in the stone engravings after now-lost paintings, which were made for the purpose of taking rubbings. There are, for example, a number of different versions of a painting of Kuan-yin, presumably all derived from the same original. The Bodhisattva of Compassion is shown as a soft, feminine figure, with the effect of wistful compassion emphasized by the languorous pose and the softly curving lines. The lines of the robe, as reproduced in these rubbings, reveal a powerful, even coarse, brush stroke. These broken and raveled lines summarily describe the heavy drapery of the robe and at the same time stand out as an independent abstract design in powerfully moving, dynamic rhythms. It is this quality which seems to correspond most closely to the literary accounts of the titanic force of Wu Tao-tzŭ's brush stroke. In contrast to the strength of the drapery lines in these Kuan-yin rubbings is the extreme delicacy, perhaps exaggerated in these later copies, of the linear definition of the face and hands of the bodhisattva.

It is, of course, the absence of any original paintings and the consequent complete dependence on literary descriptions that make it so difficult to envisage the enormous development over earlier painters that is credited to Wu Tao-tzŭ. As already indicated in quotations from early critics of his work, this progress is invariably described in terms of an unfettered imagination and a dynamic spontaneity of expression and line. Indeed, the descriptions of Wu Tao-tzŭ's facility would not be inappropriate as a characterization of the freedom and spontaneity of expression in monochrome ink paintings executed hundreds of years later. Wu Tao-tzŭ was undoubtedly a great innovator and artist, but the extravagant praise lavished on him by critics writing in early Sung times (960–1279) must be considered relative to the prevailing style of painting in the Six Dynasties (220–589) and early T'ang periods. A series of articles by the Japanese scholar Kobayashi (1939–40) has clearly demonstrated that a change in artistic taste may have taken place in Wu Tao-tzŭ's own lifetime: a change from the admired control and rational definition in precise contour and local tone to a more spontaneous and activated expression in terms of swirling monochrome and creative vitality — a departure from mere correctness and good form in the Confucian sense.

Perhaps the one reflection of his work that more than any other gives some idea of the stupendous power and freedom of the brush attributed to Wu Tao-tzŭ by Chinese critics may be seen in the stone engraving of a flying devil preserved at Ch'ü-yang (Hopei). In comparison with Six Dynasties paintings and the work of early T'ang artists, this is a design filled with tremendous movement and energy, in which the thinning and thickening of the lines with the moving brush alone make for the powerful and plastic realization of the form. The figure appears as though swelling and bursting with the pressure of pent-up energy. In its demoniacal and heroic quality it bears comparison with the *terribilità* of Michelangelo. The swirling scarves of the drapery impart at once a feeling of movement and of airborne lightness to the celestial figure. The lines as reproduced in the engraving are executed in long, casual sweeps of the brush with a continuous thinning and thickening in the course of a single stroke, so that the line not only acquires the vibrancy but also through its thickening fulfills the function of an abstract modeling. This is to all intents and purposes the same line that appears in the engraved copies of Wu Tao-tzŭ's Kuan-yin. What amounts to a very accurate description of the kind of activated drapery that characterizes these Wu Tao-tzŭ designs may be found in the passage in the *Li-tai ming-hua-chi* in which the author contrasts the style of Wu Tao-tzŭ with

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

that of the painter Ts'ao Chung-ta: "Wu's brush gave an effect of smooth curving and his robes billowed upward. Ts'ao's robes were clinging and tight. It was for this reason that later men held that Wu's girdles were caught by the wind while Ts'ao's garments were drenched in water."

Another possible reflection of Wu Tao-tzŭ's style is the painting of a bodhisattva in the collection of the Shōsōin (PL. 443). This figure, executed entirely in ink outline, provides a very close approximation of the style preserved in the engraving at Ch'ü-yang. As may be seen here once again, the novelty of Wu Tao-tzŭ's innovation lay in his departure from the accepted controlled precision of line with the expression of a sort of dynamic turbulence, enhanced by the very impetuosity of the brush stroke, and in his development of painting in ink without color. The very fact that the Shōsōin bodhisattva is entirely in monochrome is another reason for relating this picture to Wu Tao-tzŭ, whose preference for this mode was so often signalized by early writers. This painting, like the rubbings, reveals the emergence of a new criterion of performance and of taste based on the artist's ability to achieve effects of spontaneity and vitality through the controlled bravura of his brushwork. The suggestion of whirling movement in broadly swept lines of the brush conveys the impression of an inner dynamic life, or *ch'i*, in a far more explosive, baroque fashion than was ever possible with the "unfaltering correct use of the brush" that characterized the work of Six Dynasties artists.

Various mentions in Chinese critical texts compare the style of Wu Tao-tzŭ to developments in Chinese sculpture: at the end of Kuo Jo-hsü's account of the methods of Master Wu and Ts'ao Chung-ta, for example, it is remarked that "the contrast between Ts'ao's and Wu's styles is a basic one also for sculpture." It should be noted first of all that Ts'ao Chung-ta is invariably described as an artist from the "western countries," perhaps from Samarkand, who flourished in Northern Ch'i times (550–77). It is apparent that his style derived from the semiclassical school of Gandhara. The descriptions of his drapery formula completely fit the type of clinging garment, with the folds of the robe defined in multiple parallel lines, that is encountered in many examples of T'ang Buddhist sculpture and in painting as well. The Ts'ao style may be recognized in many statues of Central Asian or Gandharan types at Yün-kang and in many steles and gilt bronzes of Six Dynasties and early T'ang date.

The clue to understanding Wu Tao-tzŭ's dynamic drapery style is to be sought in various formulas already developed in Six Dynasties art; a notable illustration would be the panels of flying apsarases formerly decorating the Six Dynasties caves at T'ien-lung-shan (most of them now in Cambridge, Mass., Fogg Art Mus.). In these reliefs the figures themselves appear almost bodiless, so involved are they in the blustery rhythms of their scarves. The long sweeping lines of their movement are repeated in echoing curvilinear shapes that admirably suggest the gossamer flight of ethereal spirits. Both design and movement clearly anticipate the Wu style as seen in the engraving of the flying devil. A somewhat similar suggestion of weightless elegance is present in many of the figures in Ku K'ai-chih's scroll of *The Admonitions of the Instructress to the Court Ladies* (III, PL. 235; VIII, PLS. 406, 407). In these Six Dynasties examples the line is completely even and controlled throughout its length. This kind of drawing was transformed by Wu Tao-tzŭ to convey an impression of dynamic vitality through variations in the thickness of individual lines and through the tremendous sweep and power of the brush itself.

SOURCES. Chang Yen-yüan (9th cent.), Li-tai ming-hua-chi (A Record of the Famous Painters of All the Dynasties), in W. R. B. Acker, Some T'ang and Pre-T'ang Texts on Chinese Painting, Leiden, 1954, pp. 61–398; Chu Ching-hsüan (10th cent.), T'ang-ch'ao ming-hua-lu (Eng. trans., A. C. Soper, Celebrated Painters of the T'ang Dynasty, Arch. of the Chin. Art Soc. of Am., IV, 1950, pp. 5–28, 2d ed. Artibus Asiae, XXI, 1958, pp. 204–30); Kuo Jo-hsü (11th cent.), T'u-hua ch'ien-wên-chi (Eng. trans., A. C. Soper, Experiences in Painting, Washington, D.C., 1951).

BIBLIOG. E. Chavannes, TP, N.S., V, 1904, p. 310 ff.; T. Kobayashi, Kokka, 1939, p. 587, 1940, pp. 591, 593; O. Kümmel, ThB, s.v.; W. Cohn, Chinese Painting, London, 1948, pp. 47–49; B. Rowland, A Note on Wu Tao-tzŭ, AQ, XVII, 1954, pp. 144–50; L. Sickman and A. Soper, The Art and Architecture of China, Harmondsworth, 1956, pp. 84–87; O. Sirén, Chinese Painting: Leading Masters and Principles, London, New York, 1956–58, I, pp. 109–25, II (annotated list of paintings), p. 22.

Benjamin ROWLAND

Illustrations: PLS. 442–443.

YAMATO-E. The name of an ancient Japanese province (mod. prefecture of Nara), later applied to the whole of Japan, Yamato provides the designation for a particular style of Japanese painting called Yamato-e. The Yamato-e school was bound up with the aristocratic class and flourished especially in the middle of the Heian period (i.e., ca. 894–994). It represents one of the most original and authentic aspects of Japanese art (q.v.) — which is indebted in most cases to China and Korea — precisely because it was directly inspired in its themes and modes of expression by the sensitivity and the forms of Japanese life.

SUMMARY. Historical evolution of the Kara-e and Yamato-e styles (col. 874). Essence and characteristics of Yamato-e (col. 876). Yamato-e and illustration: *emakimono* (col. 877). Masters and masterpieces of Yamato-e (col. 878). Yamato-e in relation to succeeding styles (col. 879).

HISTORICAL EVOLUTION OF THE KARA-E AND YAMATO-E STYLES. About A.D. 300 an independent state, generally designated by historians the Yamato government, was formed in the territory of Yamato (the administrative district equivalent to mod. Nara) with a federal type of control under the predominant authority of the Tennō (the present ruling house). For some time the influence of the Chinese civilization of the Han (206 B.C.–A.D. 221) had been manifest in Japan, but in a sporadic and intermittent manner. The Japanese invasion of Korea in A.D. 369 had as one of its effects the importation into Japanese territory of Korean culture, close in character to that of China under the Han and the Six Dynasties (220–589), when Korea was subject to China (see CHINESE ART; KOREAN ART). Later, as a result of the progressive diplomatic and cultural contacts between the archipelago and the mainland, the forms of Chinese civilization were introduced continuously. In 552 the Korean kingdom of Paekche sent sacred texts and images appertaining to Buddhism (q.v.) to the Yamato government. The newly introduced faith, based on ideological unity with the state, was systematically organized as the national religion. The state of Yamato, which was undergoing constitutional changes, being converted from a federal regime to a rule with the power concentrated in the hands of a single sovereign, welcomed the new religion and the political ideology comprehended in it. Subsequently the Yamato sovereigns invited Korean monks and craftsmen to settle in Japan, and Chinese emigrants were also well received. In 594 the prince regent, Shōtoku (572–621), promulgated in the name of Empress Suiko (593–628) an edict protecting and propagating the Buddhist faith. Shōtoku was responsible for numerous religious establishments, the most famous being the Hōryūji near Nara. He did everything in his power to encourage the rapid diffusion of Buddhism; following his example, the nobles of the country were converted to Buddhism and vied with each other in the construction of temples and of large and small sanctuaries. This development was accompanied by the spread of religious art inspired by that of China of the Six Dynasties and of the Sui dynasty (581–618). As a result, Yamato and the surrounding area were filled with images from the Buddhist pantheon.

Japanese painting before the introduction of the culture and art of the mainland had been divided into two branches: painted terra-cotta surfaces (see CERAMICS), often decorated with abstract motifs, and wall paintings in tombs. Both types, however, fall into the category of primitive and, so to speak, folkloristic art, since Japan, before contact with the mainland civilization began, did not possess concepts or works that relate to painting in the broad sense. In the years 645–46 Japan succeeded in realizing the administrative improvements known as the Taikwa Reforms and in strengthening the central power of the emperor through the adoption of institutions in operation

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

in China during the T'ang period (610–966). The union between the state and Buddhism became increasingly strong; the devotion of the sovereigns and the aristocratic class to the Buddha became ever more fervent, and consequently a great number of temples and sanctuaries were constructed in Nara and in other centers throughout the country. Many monks, scholars, and skilled artisans went to Korea and T'ang China to obtain direct knowledge of the continental civilization and also maintained continuous contact with the representatives of the local culture. Thus began a period of imitation and assimilation of foreign civilization, a phenomenon that has remained characteristic of the development of Japanese thought. At first, then, Japanese Buddhist painting was no more than an imitation of Chinese examples.

Even after the establishment of the centralized power in the year 645, no permanent capital was created, in deference to an old Japanese custom that required each new sovereign to change the seat of government. However, in 694 the empress regent Jitō founded a large city, Fujiwara, on the outskirts of the modern city of Nara, and in 710 the empress Gemmyō founded Heijō, another large city, with a palace and numerous religious establishments, which developed into modern Nara. The plan of Heijō, in imitation of that of Ch'ang-an, capital of the T'ang (III, FIG. 454), was rectangular and divided into square sections (VIII, FIG. 813). With Heijō, which contained magnificent palaces, temples, and dwellings, there emerged for the first time in Japan a capital whose planning reflected its function. Almost nothing survives of the ancient monuments, but it appears that a *kōdō* (lecture hall) of the Tōshōdaiji of Nara formed part of Heijō's palace, the plan of which was based on the palace of Ch'ang-an, though it was entirely constructed of wood.

All court ceremonial was borrowed from T'ang China, as was the style of furniture and decoration in general, and even objects of continental origin were used. The decoration of interiors also reflected T'ang styles. In that epoch the art of painting in China had indeed reached very advanced levels through the works of artists of high quality. The painters of Yamato adhered to large dimensions in the works executed for the court, which comprised mural paintings; *byōbu*, or folding screens; and *tsuitate*, or single-paneled screens (see FURNITURE; HOUSEHOLD OBJECTS). The subjects of these paintings may be divided into three categories: portraits of sovereigns, important personages, and worshipers; landscapes with streams and mountains (*sansui-ga*); and didactic paintings inspired by Confucianism and Taoism (qq.v.). The secular subjects depicted in the Heijō palaces represented a very different type from the Buddhist paintings that decorated the temples and sanctuaries of the Asuka (552–644) and Nara (645–793) periods, since by the 8th century Japan had acquired the concept of two sources of pictorial inspiration, the religious and the secular. Typical examples of the former are to be found in the frescoes of the Kondō, the main or Golden Hall, of the Hōryūji, and of the latter in the screens of the Shōsōin of the Tōdaiji.

In 794 the seat of government was transferred from Nara to Heian-kyō ("Capital of Peace and Tranquillity"; mod. Kyoto), which was also built in Chinese fashion on a rectangular plan divided into square sections (VIII, FIG. 818). Whereas Buddhist culture continued to be inspired by that of China, the way of life of the court and of the aristocracy was assuming a national character. The reason for this is to be found not only in the changing political, economic, and social conditions but also in the changes in taste and in the creation of a typically Japanese architectural style, the *shinden-zukuri*, in accordance with which buildings were composed of various rooms divided from one another by sliding doors (*fusuma*), folding screens (*byōbu*), and cedarwood partitions (*sugi-to*). Also the paintings were adapted to the new architectural concept. In other words, in contrast with the earlier style, of Chinese inspiration, the art of painting came to reflect, in subject matter and style, the peculiarities of the Japanese taste and culture. The new orientation is increasingly apparent in the secular subjects and landscapes during the course of the 10th and 11th centuries, though generally speaking the style follows the T'ang tradition. The new themes, of course, demanded original expression, and consequently it is possible after the 10th century to distinguish two styles of painting: Kara-e (Chinese-style painting) and Yamato-e (national painting).

ESSENCE AND CHARACTERISTICS OF YAMATO-E. During the Nara period the China of the T'ang was known in Japanese as Kara, and all objects imported from the mainland were designated with that name used as an adjectival prefix (e.g., *karabitsu*, Chinese casket; *karakami*, Chinese paper). (The artistic term Kara-e was not yet in use, since all the paintings of the period were painted in the Chinese style.) On the other hand, just as the Chinese designated Japanese things with the prefix *wa* (from the Chinese pronunciation of the Japanese ideogram for Yamato), so, in Japan, the adjectival prefix *yamato* was used to distinguish Japanese from Chinese objects (e.g., *yamato-bitsu*, Japanese casket). After the 10th century, following the crystallization of the national style, the artistic term Yamato-e came into use, the first evidence being found in an entry of Oct. 30, 999, in the diary (*Gonki*) written by Fujiwara-no-Yukinari (972–1027), a master calligrapher and high dignitary of the court. It can thus be concluded that the origin of Yamato-e dates to the beginning of the 10th century. There are a few documents indicating that such artists as Kose-no-Kanaoka (fl. 850–80) and Kose-no-Omi (active 899) painted large-size portraits and landscapes for the royal palaces and the dwellings of the aristocracy in a style very different from the traditional Kara-e. These artists should therefore be regarded as the founders of Yamato-e.

Thus the shaping of the Yamato-e trend began in aristocratic circles, whose official and private life it portrayed. Consequently Yamato-e had a markedly aristocratic character since it fulfilled the decorative requirements of that milieu with large paintings for royal palaces and smaller paintings for *byōbu* and *fusuma* (necessities of the official ceremonies and private banquets) depicting the life and customs of the nobility. The aristocrats of the time, who generally held the high civic offices, numbered among their favorite pastimes attendance in gala dress at court ceremonies, visiting Buddhist and Shinto temples (see SHINTOISM), making journeys to famous sites to admire the view, and, lastly, gathering in groups to read Chinese poems or to compete in the writing of the Japanese poems known as *waka*. All the meetings and ceremonies had fixed dates coinciding with the changes of the seasons, which they represented symbolically. Yamato-e portrayed these various aspects of life and their sometimes elusive manifestations in splendid epical and lyrical interpretations. Unfortunately almost all the larger paintings are lost, but from the evidence of the few extant documents the existence of four thematic series can be deduced: *shiki-e* (paintings of the four seasons), also called *tsukinami-e* (paintings of the months), representing festive scenes in the various months; *meishō-e* (paintings of famous places), representing well-known monuments and beautiful landscapes with mountains, rivers, seas, and plains; paintings of traditional and genre scenes; and commemorative portraits.

Of these series of paintings the most important was the *shiki-e*, whose theme was the source of inspiration for the greater number of paintings and, in general, for those of higher esthetic merit. It can be said, then, that the principal current of Yamato-e in the Heian period was connected with the representation of landscapes and the seasonal aspects of nature. After having asserted itself in large-size works, Yamato-e entered upon a new phase toward the beginning of the 11th century with the appearance of paintings of smaller dimensions and different form: the painted scrolls known as *emakimono*.

The painted partitions and sliding screens of the Heian period are of various sizes. A *byōbu* usually consisted of six panels of silk stretched on wooden frames, the measurements of each panel varying between a maximum of about 8 ft. in height and 4 ft. in width and a minimum of about 4 ft. in height and 2 ft. in width (VIII, PL. 277). These paneled screens could be folded vertically. A *fusuma* was usually composed of four single elements whose measurements corresponded more or less to those of the *byōbu* panels. The *byōbu* were painted on

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

one side only, whereas the *fusuma* were painted on both. Although they were made up of separate panels, both the *byōbu* and the *fusuma* could be painted with compositions covering the whole surface, scenes with numerous figures and rich in detail. In the case of the Kara-e style, the Japanese painters referred to Chinese models, not having direct knowledge of the places represented. In contrast, the Yamato-e painters depicted subjects that fell under their direct observation and interpreted them in a free and personal manner in accordance with their first-hand experience. Hence the Yamato-e style, being capable of evoking immediate echoes and the feeling of an ambience, gradually superseded the Kara-e style, tied as it was to established and traditional themes.

An idea of the primitive phase of Yamato-e may be gained from the fragments of mural paintings dating from 1053 in the Hōōdō (Phoenix Hall) of the Byōdōin in Kyoto. The subject represented — Amida Raigō, or the descent of Amitābha and his assistants to receive the souls of the dying — is a traditional theme of Kara-e painting. Here, however, a landscape is depicted in the background, with figures in costumes characteristic of the Yamato region and following the style common to *byōbu* and *fusuma* painting. Another painting of the same subject, dating from about 1100, in the Kongōbuji (prefecture of Wakayama) also has a landscape background rendered in a realistic and detailed style.

In any case, all the large-size paintings were inspired by literary taste, in whose orbit the various themes of Yamato-e paintings had been expressed. The poetic form of the *waka* had always held a prominent place in the history of Japanese literature from the Nara period onward, and it was in full flower in the Heian period. Nobles and court ladies vied in writing poems, and with excellent results, particularly in this type of composition, the subjects of which coincided with those of Yamato-e. It could even be said that this artistic current constituted a kind of illustration of *waka* poetry, and often verses in beautiful calligraphy, expressing the same themes as the paintings, were transcribed onto *byōbu* and *fusuma*. This fusion of painting and literature, of painterly and calligraphic elements, constitutes one of the most original aspects of Yamato-e.

Yamato-e and illustration: emakimono. Beginning in the 10th century, a new literary genre came into existence in Japan: the *monogatari*. At first these tales followed Chinese prototypes, as in the *Taketori Monogatari* (*The Tale of the Bamboo-cutter*). In the course of time, however, the narrative became more developed in both style and form and assumed an altogether national character, achieving its most evolved expression in 1006, in the novel *Genji Monogatari* (*The Tale of Genji*) by Murasaki Shikibu, a lady-in-waiting to the empress. The novel was, in fact, the form preferred by court ladies. After the 11th century, the illustrations of these novels were executed in the Yamato-e style, thus giving rise to a new trend, the *monogatari-e*, with illustrations in the text; these fall into two groups, the *emakimono*, or horizontal scrolls with alternating text and illustrations, and the *toji-hon*, or bound volumes. In both types the texts were written in a calligraphic style known as *kusa-kana*, or *sōgana*, which was in vogue at that time, especially with women. In the Yamato-e paintings this script was preferred for its symbolic and sensitive expression.

Contemporaneously with the beginnings of the novel other literary forms developed in religious circles: the *engi*, which was a sort of legend about the origins of Buddhist sanctuaries, and the *reigen-ki*, legends and miracles of the Buddhist divinities or sainted monks. The prototypes of the *engi* may be found in the writings in Chinese characters of the Nara period, but the *engi* of the Heian period were written in Japanese characters. The production of illustrated *engi* underwent a notable increase as a result of the spread of the Buddhist cult, and in the Heian period both the *monogatari* and the *engi* were written and illustrated in *emakimono* as well as in *toji-hon*; however, the former were predominant in number and in quality. Among the painted scrolls of the period the most famous are the *Genji Monogatari Emaki* in the Tokugawa Art Museum, Nagoya, and the *Shigisan Engi Emaki* (History of Shigisan) in the Chōgosonshiji, prefecture of Nara.

In summary it may be said that the Yamato-e style, originally employed for works of large dimensions, gradually became adapted to the vogue for small illustrations of novels and sacred legends (pl. 444). On the other hand, whereas the production of *byōbu* and *fusuma* had a fundamentally practical purpose, which rendered them easily subject to deterioration, the small paintings were ends in themselves, and for this reason they present the most genuine esthetic expression of the new Japanese style of painting. Lastly, it should be noted that this style, deeply influenced by literary motifs, was to be closely bound, not only in its initial phase but also at the height of its development, to the evolution of literature.

Masters and masterpieces of Yamato-e. In the Nara period the state administration included an office known as the Edakumi-no-tsukasa, which was in charge of the work of painters; the artists thus executed works at court or in temples under the aegis and the jurisdiction of the government. In the Heian period the state administration abandoned the tutelage of the religious organizations, and Buddhism ceased to be the state religion. Consequently, all the temples were obliged to look to the aristocratic families and to the faithful for protection.

In the year 808 the former government office for artists was replaced by a systematically organized imperial artists' bureau known as the E-dokoro. The painters who were under the jurisdiction of the E-dokoro put their art exclusively at the disposal of the imperial court. It is in fact the imperial court artists Kose-no-Kanaoka, active in the latter half of the 9th century, and his son Kose-no-Omi, active at the turn of the century, who can be regarded as the founders of Yamato-e. About the middle of the 10th century other imperial court artists — Kose-no-Kintada, Kose-no-Kimmochi, Kose-no-Hirotaka, and Asukabe-no-Tsunenori — elaborated and refined the new style, which owed its formation mostly to the Kose family.

In the 11th century, as a result of the increasing economic and political power of the aristocracy, the demand for paintings steadily enlarged, paralleled by an increase in the number of Yamato-e artists. (However, accounts dealing with these artists are very scarce, since virtually all documents have disappeared.) On the other hand, from the 11th century on, since knowledge of *waka* art was indispensable to participation in court life, the ability to paint became imperative for officials and aristocrats. These amateur painters had to acquire a style and a refined technique so that their works might be appreciated in court circles. The 12th century was the golden age of the aristocracy, and their taste for luxury and splendor inspired the Yamato-e artists to decorative effects marked by brilliant colors and extremely delicate design. An outstanding example of this trend is provided by the elegant and harmonious Heike-nō-kyō scrolls, a sacred manuscript bequeathed by the Taira family to the Shinto temple of Itsukushima, Hiroshima (pl. 445). Among the outstanding artists of this period mention should be made of Fujiwara-no-Takayoshi (first half of the 12th cent.), also a government official, who is credited with the scroll of the *Genji Monogatari* mentioned above. In contrast with Yamato-e, which was at the height of its flowering, Kara-e was gradually reduced to a more limited and traditional use, as a result of which the name ultimately amounted to no more than a term to indicate Chinese subjects.

During the Kamakura period (1185–1333), which was dominated by the military power of the Minamoto clan, the political and economic power of the aristocracy waned, and consequently Yamato-e painting, which flourished in the circles of the court and the great families, underwent a caesura, especially in the production of monumental works. A *sansui byōbu* (landscape screen) in the Jingoji in Kyoto (pl. 447) is the sole surviving large work of this period; it is a simple stylistic imitation of landscape painting of the Heian period.

The small *emaki* paintings, on the contrary, branched out in different directions, and it is above all in the sphere of this form of painting that the art of portraiture unfolded. Scrolls

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

and portraits are therefore the salient expressions of Yamato-e in the Kamakura period. Again, the illustrated novel was the favorite form. Examples may be divided into various categories according to themes. In one category are the romances intended for a feminine public, such as the *Murasaki Shikibu Nikki Emaki* (*Illustrated Scroll of the Diary of Lady Murasaki*, Tokyo, Coll. Hachisuka Masauji) and the *Nayotake Monogatari Emaki* (*Scroll of the Tale of Nayotake*). A second category comprises war stories: such are the *Heiji Monogatari Emaki* (*Scroll of the Tale of Heiji*), dating from the beginning of the Kamakura period, of which the three surviving scrolls from the original set are in Tokyo (Nat. Mus. and Seika-dō Foundation) and Boston (Mus. of Fine Arts; VIII, PL. 258); the *Mōkō Shūrai Emaki* (*Scroll of the Invasion of the Mongols*), dating from the end of the period, in Tokyo (Imperial Palace), and the *Gosannen Kassen Emaki* (*Scroll of the History of the Battle of Gosannen*), also dating from the end of the period, in Tokyo (Nat. Mus.). A third category includes legends of famous people and saints — among these is the *Saigyō Monogatari Emaki* (*Scroll of the Life of Saigyō*), dating from the middle of the period, in Tokyo (Nat. Mus.).

A fourth and last category takes in works of a religious character. At the beginning of the Kamakura period the government was engaged in the revival of Buddhism and the restoration of temples of the Nara period, and consequently religious works became more numerous. Belonging to this last group are the *Kegon-shu Soshi Emaki* (*Scroll of the Life of the Founders of the Kegon Sect*), of the early Kamakura period, in Kyoto (Kōzanji), and the *Taima Mandara Emaki* (*Scroll of the Mandala of Taima*), in Kamakura (Kōmyōji). A new Buddhist sect, the Jōdo-shū, arose during the Kamakura period and had considerable success. Excellent works, whose content concerns this sect, are the *Hōnen Shōnin E-den Emaki* (*Scroll of the Life of the Monk Hōnen*), in Tokyo (Nat. Mus.), Kyoto (Chionin), and Taima, Nara prefecture (Taimaji); the *Shinran Emaki* (*Scroll of the Life of the Monk Shinran*), dating from the middle of the period, in Kyoto (Honganji); and the *Ippen Shōnin E-den Emaki* (*Scroll of the Life of the Monk Ippen*; VIII, PL. 298), painted by the imperial court artist Eni toward the close of the period. In the meantime, Shintoism had also reached a certain level of theoretical systematization, and many *emakimono* were produced in the orbit of this religion; an example is the *Kitano Tenjin Engi Emaki* (*Scroll of the Legend of the Origin of the Kitano Shrine*), dating from the middle Kamakura period and still in the Kitano Shrine (PL. 448).

The tendency to commemorate and venerate famous persons — sovereigns, aristocrats, monks, warriors, and scholars — inevitably fostered the development of portraiture (q.v.). A certain trend in this direction had already been discernible in the Heian period, although it was generally confined within schematic and conventional limits. In the Kamakura period, however, portraiture succeeded in capturing and delineating realistically the expression of the individual. As excellent examples of this genre may be cited the portraits of Minamoto Yoritomo, founder of the military government (XI, PL. 229), and Taira-no-Shigemori, the former painting probably and the latter definitely by Fujiwara-no-Takanobu (1142–1205); both portraits are in the Jingoji in Kyoto, as is a presumed portrait of Fujiwara Mitsuyoshi attributed to the same artist (VIII, PL. 290). The son of Takanobu, Fujiwara-no-Nobuzane (1176–1265; PLS. 447, 448; VIII, PL. 304), painted a remarkable portrait of the emperor Gotoba (Osaka prefecture, Minase Shrine). The abundant production of portraits and scrolls in the Kamakura period confirms what has been said — that in this period Yamato-e found its finest expression in paintings of small dimensions (PLS. 446–450).

YAMATO-E IN RELATION TO SUCCEEDING STYLES. During the Muromachi period (1334–1573), when the government was dependent chiefly on the military class, the aristocracy became less vigorous, and Yamato-e art, whose development had always been bound up with the life and the milieu of the aristocracy, followed it in its decline. This process was accentuated by the introduction into Japan of Chinese ink painting of the Sung (960–1279) and Yuan (1260–1368) periods, which appealed to the taste of the ruling military class. Moreover, beginning in the 15th century, with Fujiwara-no-Yukihiro (d. ca. 1434), the position of chief artist of the E-dokoro, which previously had always been held by artists of superior ability, assumed a hereditary character that took no account of the merit of the individual painter. Yukihiro had a double surname, Fujiwara and Tosa, and the latter gradually came to be used by the artists of the family (see TOSA SCHOOL). As imperial court artists the Tosa masters acquired various privileges in artistic and social matters that were not granted to other Yamato-e painters. It was Tosa Mitsunobu (1434–1525), one of the finest painters of the family, who founded the so-styled Tosa school (PL. 450). Despite a period of decline in the Momoyama period (1573–1615), the school succeeded in achieving a position of preeminence in the Edo period (1615–1867), primarily through the activity of Tosa Mitsuoki (1617–91).

In the later development of Yamato-e art, especially after Mitsunobu, it acquired an increasingly formal and conventional character. Furthermore, from the Momoyama period on it progressively absorbed influences from the new Kanō school (q.v.) founded by Kanō Masanobu (VIII, PL. 351) at the end of the Muromachi period. Finally, the style and colorism of Yamato-e were absorbed into the manner of another Kanō artist, Motonobu (1476–1559; VIII, PLS. 313, 359), whence they passed into the "grand manner" of the Kanō school, whose magnificent and solemn decorative style was preferred by members of the military class for their houses and castles. In the Meiji period (1868–1912) the Tosa family disappeared and Yamato-e art itself, although still practiced by a few painters, slowly drew to a close. Although no Japanese artists currently follow this style, its tradition, which modern criticism is reevaluating from various points of view, has been absorbed into contemporary painting.

SOURCES: H. Kurokawa (1798–1866), Koko Gafu (Catalogue of Ancient Japanese Painting), Tokyo, 1925.

BIBLIOG. I. Tanaka, Nippon emakimono shūsei (Complete Account of Japanese Painting), 29 vols., Tokyo, 1929–43; S. Sawamura, Nippon kaigashi no kenkyū (Studies in the History of Japanese Art), Kyoto, 1931; S. Ienaga, Jodai yamato-e Nempyō (Chronological Table of First Yamato-e), Tokyo, 1942; A. C. Soper, The Rise of Yamato-e, AB, XXIV, 1942, pp. 351–79; Y. Yashivo, Nihon bijutsu no tokoshitsu (Characters of Nipponese Art), Tokyo, 1943; S. Shimomise, Kara-e to yamato-e (Kara Painting and Yamato Painting), Osaka, 1944; S. Ienaga, Jodai yamato-e zenshi (Complete History of the Most Ancient Yamato-e), Kyoto, 1946; S. Tani, Nippon bijutsushi gaisetsu (General History of Japanese Art), Tokyo, 1948; T. Harayama, Heian-cho kaigashi (The History of Heian Painting), Tokyo, 1950; N. Ueno, Emakimono kenkyū (Studies of Roll Painting), Tokyo, 1950; I. Kondō, Pageant of Japanese Art, Painting, II, Tokyo, 1952; H. Okudaira, Emaki (Painting on Rolls), Tokyo, 1957; Nippon emakimono senshu (Complete Collection of Japanese Painting on Rolls), Tokyo, 1960 ff.; T. Akiyama, Japanese Painting, Geneva, 1961; T. Akiyama, Secular Painting in Early Mediaeval Japan, Tokyo, 1964 (Jap. text, Eng. and Fr. summaries); K. Toda, Japanese Painting, Tokyo and Rutland, Vt., 1965. See also the bibliog. for TOSA SCHOOL.

Shin'ichi TANI

Illustrations: PLS. 444–450.

YEN LI-PÊN. The greatest and most famous of the master painters of the early T'ang dynasty (618–906), Yen Li-pên (b. ca. 600; d. 673) was the son of Yen Pi, a Sui dynasty (589–618) official, painter, and calligrapher, and the younger brother of Yen Li-tê, an almost equally renowned official and painter who died in 656 after attaining the high ranks of Grand Architect and President of the Board of Works. As early as 626 Yen Li-pên was commissioned by the future emperor T'ai-tsung, then Prince of Ch'in, to paint a picture of the 18 scholars who had gathered at the Ch'in palace in 621. In 635 he was requested by T'ai-tsung to paint a picture of a Sogdian lion that had been presented in tribute to the Emperor, and in 643 he was assigned to paint the official portraits of 24 meritorious officials for the *Ling-yen-ko*, "Hall of Fame" in the imperial gallery.

Probably soon after his brother's death he was appointed to that late official's positions, advancing even higher to become in 668 Chief Minister of the Right, one of the two ministers

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

of state. When he died in 673 he was given the posthumous title *Wên-chên*, or "True Scholar." In view of this career of official and scholarly success, the famous and oft-repeated anecdote ending in the lines "yet I am known only by painting, as if I were a menial" is properly suspect and was doubted as early as the *Li-tai ming-hua chi* (*A Record of the Famous Painters of All the Dynasties*) of Chang Yen-yüan, finished in 1847.

Yen was famous not only for portraits but also for his paintings of Buddhist and Taoist subjects — about half of the paintings attributed to him in the *Hsüan-ho hua-p'u*, the catalogue of the collection of the Northern Sung emperor Hui-tsung, are Buddhist — and for paintings showing barbarians from tributary and foreign regions. He was ranked by his sovereign as having divine power as an artist — the highest possible praise. If this information were all that was available, however, critics would be in no better position with regard to Yen Li-pên's painting than they are with so many of the early and almost legendary artists of China's greatest period of figure painting. Fortunately, however, there are at least two monuments that give some idea of Yen Li-pên's artistic character and greatness: the stone reliefs of the *Six Horses* from the tomb of T'ai-tsung in Chao-ling (two now in Philadelphia, Univ. Mus.; four in Sian, Shensi Provincial Mus.) and the *Scroll of the Emperors*, now in Boston (Mus. of Fine Arts).

The *Six Horses* (PL. 452), according to an already old tradition first recorded in 1089 by Yu Shih-hsiung on a stone tablet at Chao-ling, were carved in moderately low relief from designs by Yen Li-pên. The T'ai-tsung reign date of the sculptures cannot reasonably be doubted, and the fact that the artist himself was also buried at Chao-ling is further evidence of the likelihood of Yen's authorship for this imperial commission. The six horses are, in their original order: Ch'ing-chui, a piebald; Shih-fa-ch'ih, a brick-red horse; T'ê-lo-piao, the charger Teghin; Sa-lu-tzû, a bay called "Whirlwind Victory"; Ch'üan-mao-kua, a saffron horse called "Curly"; Pai-t'i-wu, a black horse called "White-hoofed Crow." They are shown against a plain flat background framed within a rectangular recess, their simple and massively sculptured forms rigidly parallel to the frontal plane, and are alone except in the fourth relief, in which a warrior in padded armor is shown removing arrows from Whirlwind Victory (PL. 452). The figures were designed with a unity of silhouette, modeling, and detail that reveals a truly monumental talent.

The genius of design that is evident in these reliefs is to be found to an even higher and subtler degree in the hand scroll in Boston (PL. 451; VII, PL. 256; X, PL. 492). Representing 13 emperors who reigned from the Western Han dynasty (206 B.C.–A.D. 9) to the Sui dynasty, the hand scroll has a reasonably well-documented history from at least 1060 and probably from before 1000, depending on the reading of the cyclical date *Kêng-tsŭ* in the first and oldest inscription following the painting in the scroll. The first six portrait groups (VII, PL. 256) are justly considered to be early (perhaps Northern Sung period, 960–1127) replacements of the damaged originals. The last seven emperors and their attendants (PL. 451; X, PL. 492) are so fine in quality, so unlike any later figure painting, and so congruent in tone and power with the *Six Horses* of T'ai-tsung's tomb that even if they were not actually executed by Yen Li-pên they more than adequately represent his art at its peak. The individual groups, although distinct and monumental, are in an easy relationship with one another. The almost wirelike line that precisely defines contours, turns of the heads, and the fall and movement of the drapery is augmented by an even, sparingly used shading, particularly evident in the drapery, which adds sculptural form to the indicated volumes and attests to Central Asian and, ultimately, Indian and Sassanian influences. The accomplished handling of the limited space between the groups, strictly excluding any indication of setting or depth beyond the ideally conceived figure groups; the limited use of color — white, red, and black, with touches of yellow-green and mauve; and the archaic use of a large scale for the emperors and a diminished scale for the attendants: all these result in an uncompromisingly grand, dignified, and powerful expression that is in keeping with the tone of early T'ang culture.

Other important copies after Yen Li-pên include the scroll *Tribute Bearers from Western Countries* (Taichung, Taiwan, Palace Coll.); subject types only: *Scholars Collating Texts* (Boston, Mus. of Fine Arts); composition only, and that according to a 12th-century colophon; and the *Emperor T'ai-tsung Borne in a Palanquin* (*Pu-nien-t'u*; Peking, Palace Mus.), known to the author only from a reproduction, but perhaps very close to the work of Yen Li-pên.

BIBLIOG. A. Waley, An Introduction to the Study of Chinese Painting, London, 1923, pp. 110–12; A. Waley, T'ai Tsung's Six Chargers, BM, XLIII, 246, 1923, pp. 117–18; K. Tomita, Scholars of the Northern Ch'i Dynasty Collating Classic Texts, BMFA, XXIX, 174, 1931, pp. 58–63; J. C. Ferguson, The Six Horses at the Tomb of the Emperor T'ai Tsung of the T'ang Dynasty, EArt, III, 1931, pp. 61–71; K. Tomita, Portraits of the Emperors: A Chinese Scroll-painting Attributed to Yen Li-pên, BMFA, XXX, 177, 1932, pp. 2–8; K. Tomita, Portfolio of Chinese Paintings in the Museum [of Fine Arts, Boston], Cambridge, 1933, pls. 10–24; H. E. Fernald, In Defense of the Horses of T'ang T'ai Tsung, The University Mus. B., IX, 4, 1942, pp. 18–28; A. C. Soper, Chu Ching-hsüan's Celebrated Painters of the T'ang Dynasty (T'ang-ch'ao ming-hua-lu), Arch. of the Chin. Art Soc. of America, IV, 1950, p. 11; A. C. Soper, Kuo Jo-hsü's Experiences in Painting (T'u-hua ch'ien-wên-chi), Washington, 1951; W. R. B. Acker, Some T'ang and Pre-T'ang Texts on Chinese Painting, Leiden, 1954; O. Sirén, Chinese Painting: Leading Masters and Principles, London, New York, 1956, I, pp. 96–103, II, Annotated List of Paintings, p. 23, III, pls. 72–78; N. Toshio, Yen Pi and Ho Ch'ou of the Sui Dynasty, Bijutsushi, VIII, 1, 1958; N. Toshio, Concerning Yen Li-tê and Yen Li-pên, Tōhō Gakuhō, XXIX, 1959, pp. 1–50; T'ang Yen Li-pên pu nien t'u ("The palanquin hand scroll by Yen Li-pên of the T'ang dynasty"), Peking, 1959; Nat. Palace Mus. and Nat. Central Mus., Ku kung ming hua san pai chung ("Three hundred famous paintings of the Palace Museum"), Taiwan, 1959, I, pls. 1-1, 1-2; Chin Wei-no, Chih kung t'u te Shih tai yu tso che ("The date and creator of the painting of Tribute Bearers"), Wen Wu, 7, 1960; Chinese Art Treasures: A Selected Group of Objects from the Chinese National Palace Museum and the Chinese National Museum, Taichung, Taiwan, Exhibited in the United States by the Government of the Republic of China, Geneva, 1961–62, pp. 34–35.

Sherman E. LEE

Illustrations: PLS. 451–452.

YUGOSLAVIA. The Federal People's Republic of Yugoslavia (Federativna Narodna Republika Jugoslavija), which comprises the republics of Slovenia, Croatia, Bosnia-Herzegovina, Serbia (with the autonomous regions of Vojvodina and Kosovo-Metohija), Montenegro, and Macedonia, was proclaimed in 1945 and occupies the Slavic territories that, having as their nuclei the kingdoms of Serbia and Montenegro, declared their independence in 1918 after the dissolution of the Austro-Hungarian and Turkish empires; later, parts of Dalmatia and Istria were added. Yugoslavia occupies the northwestern area of the Balkan Peninsula, situated between the Adriatic Sea and the Danube Valley (only Vojvodina extends to the north of the Danube). Highly developed ever since prehistoric times, this area, which to a great extent is identical with the former Illyria (Illyricum, or Dalmatia), shows signs of several civilizations: Greek, Roman, Byzantine, medieval Slavic, Turkish (in the south), Venetian (along the coast), and recent Central European (especially in the north). From its important popular traditions Yugoslavia is developing ever more clearly national cultural and artistic characteristics.

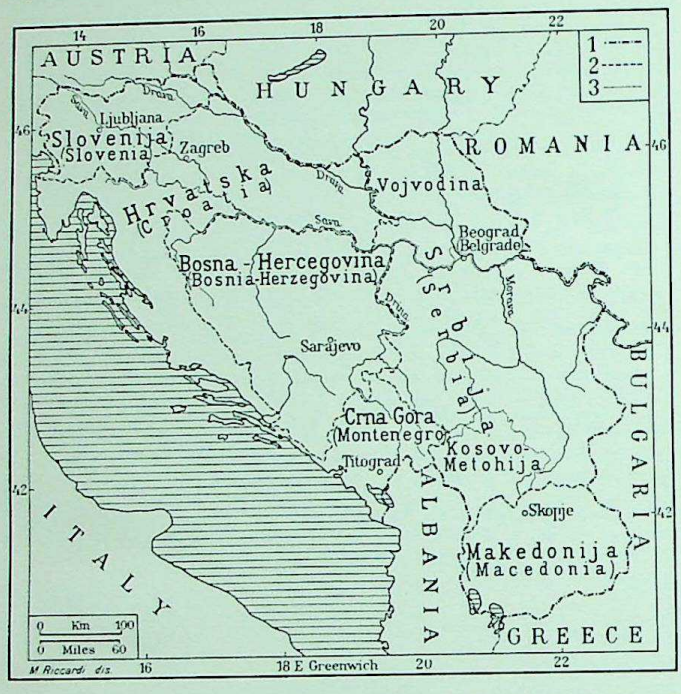
SUMMARY. Historical background (col. 882). Cultural and artistic phases (col. 883). *Prehistory and protohistory; Greco-Roman period; The Middle Ages; Art from the 13th century to the present: a. Slovenia; b. Croatia; c. Dalmatia; d. Bosnia-Herzegovina; e. Serbia and Macedonia; The contemporary epoch and the growth of national art; Folk art.* Art centers (col. 899): *Slovenia; Croatia; Bosnia-Herzegovina; Serbia; Montenegro; Macedonia.*

HISTORICAL BACKGROUND. Since prehistoric times the territory of the present state of Yugoslavia has been a border and transit area in which political interests and different civilizations have intersected and intermingled. The boundary between the Greek and Latin languages within the Roman Empire cut the area of present Yugoslavia into two almost equal parts. The same division continued through the Middle Ages. When the Slavs arrived on the Balkan Peninsula in the 6th century, tribes with a primitive civilization invaded the territory and occupied the area from the eastern Alps to the Adriatic Sea, the Peloponnesos, and Thrace. After Christianity was adopted,

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the dualism deepened, with missionaries from both Byzantium and Rome, which during the Middle Ages opposed each other strongly. The borderline between the Eastern and Western churches of medieval Europe fluctuated for centuries as it ran through the chaotic and unstable province of Bosnia, which as a "no man's land" became the center and refuge of the Bogomiles, a Balkan sect of the Patarines.

The stormy history of the Yugoslav peoples became still more complicated when the Turks invaded Europe. The Turkish wars lasted from the end of the 14th century to 1912, during which period especially the southeastern parts of present-day Yugoslavia suffered.



Federal People's Republic of Yugoslavia. *Key*: (1) Modern political boundaries; (2) boundaries of the republics; (3) boundaries of the autonomous territories of the Republic of Serbia.

The Yugoslav peoples, who were oriented in different directions and subjected to unequal conditions of historical evolution, developed entirely different patterns of artistic culture through the Middle Ages and modern times, up to the first decade of the 19th century. The intense and varying historical currents to which the Balkan Peninsula was exposed have greatly influenced the arts. In the Middle Ages the territories of the present republics of Slovenia and Croatia, and to a certain extent Montenegro, followed the artistic currents of Western Europe. Bosnia had from the 13th to the end of the 15th century its own — although primitive — local art, while the remaining districts of the republics of Serbia and Macedonia and parts of Montenegro fell within the area of Byzantine and post-Byzantine art, up to the end of the 17th century. Even baroque art on Yugoslavic territory was divided into two groups without contacts with each other though often living side by side. Thus in the 18th century there were in the northern, Catholic province of Croatia both domestic artists and foreigners of Italian and Austrian origin, while Serbian baroque — even in Croatia — leaning almost exclusively on the Russian Orthodox variation of the baroque, developed in the monasteries of the remote city of Kiev.

CULTURAL AND ARTISTIC PHASES. *Prehistory and protohistory.* The evidences of Stone Age industry in Yugoslavia go back to the Upper Paleolithic period. Although several stations from the Lower Paleolithic period have been found, those from the Mesolithic period are few. During the Neolithic period Yugoslavia must have been fairly densely populated; household and agricultural utensils and weapons have been found. The stations of the Starčevo group (the stations of Starčevo, where the Sava joins the Danube, the present site of Belgrade; Bubanj, near Niš; Čoka, near Subotica; and others in the neighborhood) date from the earliest Neolithic period, while other Neolithic settlements around Vinča, close to Belgrade, are more recent. Another group comprises the stations of Butmir, near Sarajevo, in Bosnia; Nebo, near Travnik; and Donji Klakar, near Brod, where the Bosna joins the Sava. The caves of Grabak, Pokrivenik, and Markova, on the island of Hvar, are probably Neolithic. Other Neolithic finds were made in the islands of Korčula and Lastovo; at Danilo, not far from Šibenik; and in the cave called Crvena Stijena, in Montenegro. From the Bronze Age are the large stations of Sarvaš, near Osijek, and Vučedol, near Vukovar, both in Slavonia, and Ljubljansko Barje, near Ljubljana. Besides the settlements already mentioned, which have furnished vast and rich material, many other smaller ones have been found both from the Neolithic period and from the Bronze Age. Especially important is the pottery, because of the variety of forms (dishes, bowls, amphorae, etc.) and because of the splendid colors and the quality of design: painted pottery from Starčevo and Vinča, in the Narodni Muzej (Nat. Mus.), Belgrade; the pieces found in the caves of Grabak, Pokrivenik, and Markova, in the Arheološki Muzej (Archaeol. Mus.), Zagreb, and in the G. Novak Collection, Hvar; the spiral-decorated pottery from Butmir, in the Zemaljski Muzej, Sarajevo; the painted pottery from Danilo, in the Muzej Grada Šibenika (City Historical Mus.), Šibenik; the carved Bronze Age pottery from Ljubljansko Barje, in the Narodni Muzej, Ljubljana; the "Slavonian" pottery in the Slavonian Museum, Osijek. There are also many sculptures, such as the figures found at Vinča and Butmir.

It is to be presumed that at least from the beginning of the Bronze Age Indo-European peoples, such as the Greeks, the Thracians, and the Illyrians, were present within the territory of Yugoslavia. The Greeks did not linger on but went on to the south; but the Thracians in the east and the Illyrians to the west invaded the northwestern Balkan Peninsula and introduced the Bronze Age civilization.

Few Bronze Age settlements have been studied systematically, but everywhere in Yugoslavia bronze utensils, weapons, and ornaments, often of excellent quality, have been found (IX, PL. 503). Among the settlements may be mentioned Vattina, near Vršac, in Vojvodina, and Žuto Brdo and Dubravica, in Serbia, near the Danube. Pottery was used only for household purposes; the sacred objects, as well as the more important utensils, were of metal, generally bronze. Very beautiful are the small terra-cotta statues from Kličevac, Vršac, and Bapska. The fortified sites found along the Adriatic coast, from the Tršcanki (Gulf of Trieste) to the Boka Kotorska (Kotor Strait), belong in part to the Bronze Age, in part to a later epoch.

The Iron Age in Yugoslavia has local subdivisions; its first period extended from about 1000 B.C. to 400 B.C. and the second from 400 B.C. onward. It has left numerous traces, not only metal objects (weapons, utensils, ornaments, small statues, etc.) and pottery but also architectural remains. On the Glasinac Plateau, a few miles east of Sarajevo, thousands of tombs from the first period have been discovered; in fact, it is possible to speak of a "Glasinac culture," extending from the Adriatic to the Morava River and from the Sava to Montenegro. The material found, which is rich and plentiful, is kept in the Narodni Muzej, Sarajevo.

During the first half of the 14th century B.C. the Celts invaded the territory of Yugoslavia, spreading gradually to Bosnia and Serbia and occupying Slovenia, parts of Croatia, and the northern parts of Bosnia and Dalmatia. They brought with them the La Tène civilization and, mixing with the Illyrians and Thracians, gave a special character to the Iron Age civilization. The Celts founded Siscia (mod. Sisak), Singidunum (mod. Belgrade), and many other towns.

There is evidence of trade between the Yugoslavic Adriatic coast and the Mediterranean area and Central Europe during the Neolithic period and the Bronze Age. The relations between the Aegean, Ionian, and Adriatic coasts, and especially between the coasts of the Balkan and Italian peninsulas, is exemplified in the finds made on the island of Hvar: the beautiful ceramics from Ripoli have been found not only on that island but also at Danilo; and there can consequently be no doubt as to the existence of a vast Neolithic cultural circle including the Aegean, Sicily, the Liparis, southern Italy, and the Dalmatian coast. In the Neolithic period, or at any rate during the Bronze Age, reference may already be made to the "Amber Road," which passed through the Tršcanki or Rijeka (Fiume) and, touching the island of Hvar, passed through the Straits of Otranto, to arrive in Greece and Sicily.

Trade continued throughout the Bronze and Iron ages, as can be seen, for instance, from the finds on the island of Hvar. From the coasts the trading routes followed the valleys of the rivers, especially the Neretva, and reached the centers of Bosnia, Slovenia, and Croatia. Furthermore, from the Neolithic period until the late Iron Age there were trade contacts also with Austria, Hungary, Bulgaria, and Greece, resulting in wide cultural exchanges: Etruscan helmets have been found on the Glasinac Plateau; Atestine vases at Vače, in Slovenia; Greek weapons in Bosnia and Serbia; and Greek jewelry at Trebenište, in Macedonia.

Greco-Roman period. The Greeks apparently reached the Adriatic as early as the 7th century B.C., when in 627 they founded the colony of Epidamnos (mod. Durrës), later named Dyrrachium by the Romans; there they gradually advanced to the north. Apollonia (near Pojani,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Albania) was founded in 558 B.C. Greek pottery made its appearance at Vizače, near Pula, from the 5th century on, but relations with Greece may have existed earlier, as indicated by finds in the Illyrian necropolises preceding those of Atestine type; Greek pottery has also been found at Pizzughi in Istria. Between 394 and 390 B.C. the Cnidians founded the colony of Melaina Korkyra on the island of Korčula. At the same time the Greeks from Sicily also reached the Adriatic, and the Syracusans, under Dionysius the Elder, founded Issa on the island of Lissa (mod. Vis). The inhabitants of Paros in 385–384 B.C. founded the colony of Pharos (mod. Starigrad) on the island of Hvar. Issa in its turn founded colonies near the village of Lumbarda, on the island of Korčula, in the 4th century and at Tragourion (mod. Trogir) and Epetion (mod. Stobreč) in the 3d century; in the 2d century it conquered the Illyrian town of Salona. A Greek *emporion* (trading center) existed in the 5th century at the mouth of the Neretva River, as did another settlement at Budva.

The Romans entered the area during the 3d century B.C. and Romanized it to such an extent that under Augustus the province of Illyricum was created; the name of Dalmatia, designating the coastal area, appeared with the Flavians. Augustan colonies were Narona, Salona, Iadera (mod. Zadar), and Pietas Julia (mod. Pula); Julio-Claudian colonies were Emona (mod. Ljubljana), Aequum (mod. Čitluk), and Siculi (near Trogir). Other colonies sprang up at Poetovium (mod. Ptuj), Siscia (mod. Sisak), Mursa (mod. Osijek), Cibalae, Sirmium (mod. Sremska Mitrovica), and Scupi (mod. Skoplje); Celeia (mod. Celje), Piranum (mod. Piran, Pirano), Arsia, Tarsatica (mod. Rijeka), Aenona, Scardona (Skradin), Tragurium, Issa, Doclea, Domavium, Argentaria, Singidunum (mod. Belgrade), Naissus (mod. Niš), Lychnidus, and others were simple *municipia*.

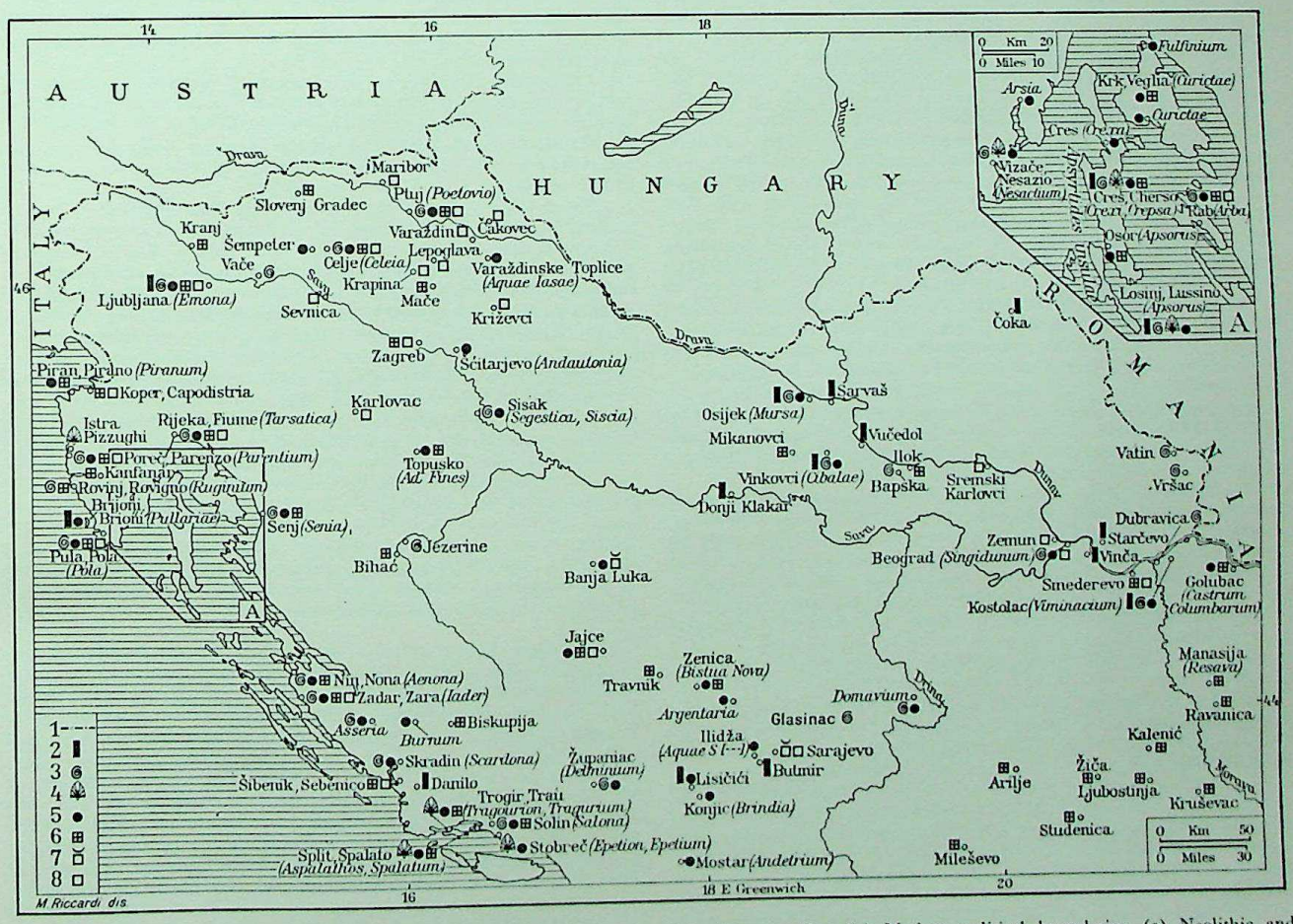
The towns grew mainly on the sites of earlier Greek centers, in spite of the difficulties caused by the inveterate habits of tribal life. Roman civilization spread along the great lines of communication, roads and rivers. Nevertheless, a few particularly isolated centers — such as Emona, where a special coarse, rustic kind of sculpture survived, and Singidunum — either rejected or accepted only reluctantly the Roman culture that was developing along the coast.

The whole area passed through a particularly prosperous period in late antiquity, owing partly to the presence of the court at Sirmium and the imperial residence at Split and partly to its geographical situation, which enabled it to act as a bridge between the Roman and Byzantine worlds. This explains the migration of architectural peculiarities, especially within the field of religious architecture, from Syria to northern Italy via Salona and Istria; while a particular taste in mosaics seems to have spread by way of Aquileia, going against the strong current of refined handicraft that moved up along the Adriatic and from there spread toward Central Europe.

Grga Novak

The Middle Ages. In the part of present-day Yugoslavia that fell within the boundaries of Justinian's empire (527–65), some valuable monuments are preserved: the Euphrasian Basilica at Poreč (Parenzo; XIII, PL. 254), the Caričin Grad (Fortress of the Empress) in central Serbia, and several examples from the 6th century in Macedonia, with remains of architecture, architectural sculpture, and mosaics — Konjuh (near Kumanovo), Skoplje, Bitolj, and the well-known town of Stobi, whose large episcopal basilica dates from about 500.

The invasions of the Slavs at the end of the 6th century interrupted the brief flowering of Justinian art. A group of Avars and Slavs settled between the Pannonian plain and Constantinople and brought with them a new, primitive civilization, which is preserved in finds from necropolises. Jewelry, weapons, utensils, and pottery are the sole objects by which one can classify the various kinds and groups of Avar-Slav art. The chronological and topographical distribution of the early medieval civilizations in the eastern Alps, Trans-Danubia, and the Balkan Peninsula has by now been established with sufficient certainty, although there is still a considerable amount of disagreement as to the ethnic origin of the individual civilizations and it is still unknown whether the so-called "Kuturgur culture" was in part produced by the Slavs. The first group of archaeological finds definitely connected with the Slavs falls within the "Keszthely



Northern Yugoslavia, principal centers and monuments of historical and artistic interest. *Key*: (1) Modern political boundaries; (2) Neolithic and Bronze Age settlements; (3) settlements and archaeological sites from the Bronze and Iron ages; (4) Greek centers and archaeological sites; (5) Roman centers and archaeological sites; (6) medieval centers; (7) monuments of Moslem art; (8) modern centers.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

culture" (7th–8th cent.), which had its center in Trans-Danubia; there are only a few finds in Dalmatia. Exquisite samples of Keszthely material (fibulas, metal ornaments from belts, etc.) from the surroundings of Belgrade are to be seen in the Narodni Muzej in that city.

During the course of the 9th and 10th centuries a marked differentiation occurs in the art of the necropolises: in the northwest, in Slovenia, the objects found in tombs belong to the Kettlach culture; those found in Dalmatia represent an independent culture usually called Old Croatian, although objects belonging to this culture are also to be found in Bosnia, Serbia, and outside Yugoslavia, in Bulgaria and Russia. The latest culture connected with necropolises in Yugoslavia is named after one of the largest finds of this kind, situated at Belo Brdo, near Osijek. The Belo Brdo culture extends from the Pannonian provinces across the Balkan Peninsula, excluding Slovenia and Dalmatia.

Up to the 9th century material from burial sites provides almost the only traces of artistic activity. For the 10th and 11th centuries such material forms only part of a complex of artistic life, represented by remains of monumental art, especially in Dalmatia; the Belo Brdo culture gives valuable information regarding rural crafts, very highly developed alongside the monumental art.

The oldest monumental buildings from the early Middle Ages, probably from the 9th century, are to be found at Zadar (former Church of Sv. Donat, now the Arheološki Muzej; XI, PL. 323, FIG. 672) and at Novi Pazar, the medieval town of Raš (Church of Sv. Petar; only fragments remain of the 10th-century Church of Sv. Tripun, formerly the Cathedral of Kotor). The extant examples of early medieval architecture are generally of modest dimensions. In Dalmatia most of the churches dating from the 9th–11th centuries are still in existence. Their original plan often shows a variant of a central construction, but most of them are basilicas with vaulting and dome. The rustic construction of these buildings springs mainly from local tradition. Dalmatian builders up to the 11th century do not show marked Byzantine or Italian influence; however, the decorative stone sculpture on these rather original buildings is closely connected with early medieval decoration, in which interlace patterns dominate. New discoveries have proved that this sculptural decoration, earlier taken to be connected with the former state of Croatia, existed in Slovenia, at Srem (Syrmia), in Bosnia-Herzegovina, and in Macedonia.

The art of the northwestern part of Yugoslavia was subject, in the early Middle Ages, to influence from two centers: Aquileia and Salzburg. Of the principal architectural monument left by the Pannonian Slavs, the three-aisled basilica of Blatograd (Balaton, now in Hungary), only the damaged early-9th-century foundations remain.

From the 11th century on, monumental art developed uninterruptedly. From Italy came the Cassinese Benedictines, who built flat-ceilinged basilicas on the east coast of the Adriatic, from Rab (Sv. Petar, 1059) to the Montenegrin coast (Church of Sv. Bogorodice Krainska, 11th cent.); in the 12th century the Benedictines built abbeys north of Belgrade in Slavonia and at Srem (Bani Monasterium, today Banoštor at the Fruška Gora).

In the first half of the 11th century the Byzantine influence spread from the southeast, mainly from Ohrid, center of an archdiocese that extended to the north as far as the Danube. During the 11th century the cathedral church of the archbishops of Ohrid, Sv. Sofija, a three-aisled basilica with a dome, was decorated with frescoes (XIII, PL.53) that are among the finest work of Byzantine monumental painting from the Macedonian epoch; on the shores of the neighboring Lake Prespa are the impressive ruins of the three-aisled Church of Sv. Ahil, which was probably erected by the end of the 10th century.

The art of the 12th century was heavily influenced by the Byzantine style in Macedonia, while Byzantine and Romanesque elements intermingle in the broad territory from Serbia and Dalmatia to Istria. In Dalmatia, where the Benedictines still dominated, a strong Western influence made itself felt. In Slovenia, in the architecture of the most important monasteries, the French influence is noticeable. Along with works that clearly depend on foreign models, the 12th century introduced some original examples of autonomous artistic creation in Macedonia and Serbia, especially in miniature painting (see XIII, col. 77).

While in Dalmatia and the northwestern part of Yugoslavia 12th-century architecture underwent considerable changes during the following century, in Macedonia and Serbia the autonomous architectural style was preserved. Comnene architecture is represented by the small five-domed Church of Sv. Pantalejmon (1164), in the village of Nerezi, near Skoplje; Romanesque and Byzantine components mingle in the Church of Sv. Djordje (ca. 1170), near Novi Pazar, which was badly damaged during World War II. Other examples of 12th-century Dalmatian architecture are found at Zadar (Benedictine Convent of Sv. Marija).

Fine frescoes of Comnene style are preserved in Macedonia, in Sv. Pantalejmon at Nerezi (XIII, PL. 52) and in the Church of Sv. Nikola at Kurbinovo on Lake Prespa. Fragments of the frescoes from Sv. Djordje at Novi Pazar, are now in the Narodni Muzej, Belgrade. Related to the style of the frescoes from Macedonia and Serbia are the frescoes in Sv. Krševan at Zadar; they belong within the sphere of Comnene art, except for certain marks of provincialism. Of early Romanesque Western art of the 12th century there are some fairly well-preserved frescoes in the Church of Sv. Mihail at Stonsko Pole; they show considerable marks of French influence along with predominant characteristics borrowed from the Benedictine style.

Miniatures and illumination present the clearest picture of the contrasts that characterize 12th-century Yugoslavic art. The monasteries in Slovenia and northern Croatia have manuscripts with miniatures of northern French stylistic derivation; in Dalmatia the illuminated manuscripts come from local Cassinese Benedictine scriptoriums; and the Cyrillic manuscripts of Serbia and Macedonia show a chaotic mixture of Oriental, Byzantine, and Romanesque traits.

Art from the 13th century to the present. a. Slovenia. In the 13th century, art in the area that constitutes present-day Yugoslavia began to split into independent regional and national schools limited to well-defined districts. In Slovenia and northern Croatia the arts followed an evolution conditioned by similar factors. These regions, being exposed to strong foreign impulses, closely followed the general course of Western European art, and it was only at a comparatively late stage that they developed a truly national school — Slovenia in the first half of the 18th century and Croatia not until the beginning of the 19th century.

The Romanesque style penetrated Slovenian art in the 12th century. A building of archaic forms is the three-aisled main basilica of the Cistercian monastery at Stična, which was probably erected by French masters. About 1260 a transitional half-Romanesque, half-Gothic style penetrated Slovenia from Germany. The chief monument of this style is the Cistercian church of Kostanjevica, with a rectangular presbytery and massive quadrilateral columns with fine capitals and well-preserved ornamental stone sculpture. The mature Gothic style is represented by the church at Crngrob (14th–16th cent.) and that of Kranj (1491). The constant threat of Turkish invasion and the wars of religion hampered further artistic evolution in the Slovenian provinces. In fact, even in the 16th century Gothic forms persisted, to be directly superseded by the baroque style in the 17th century.

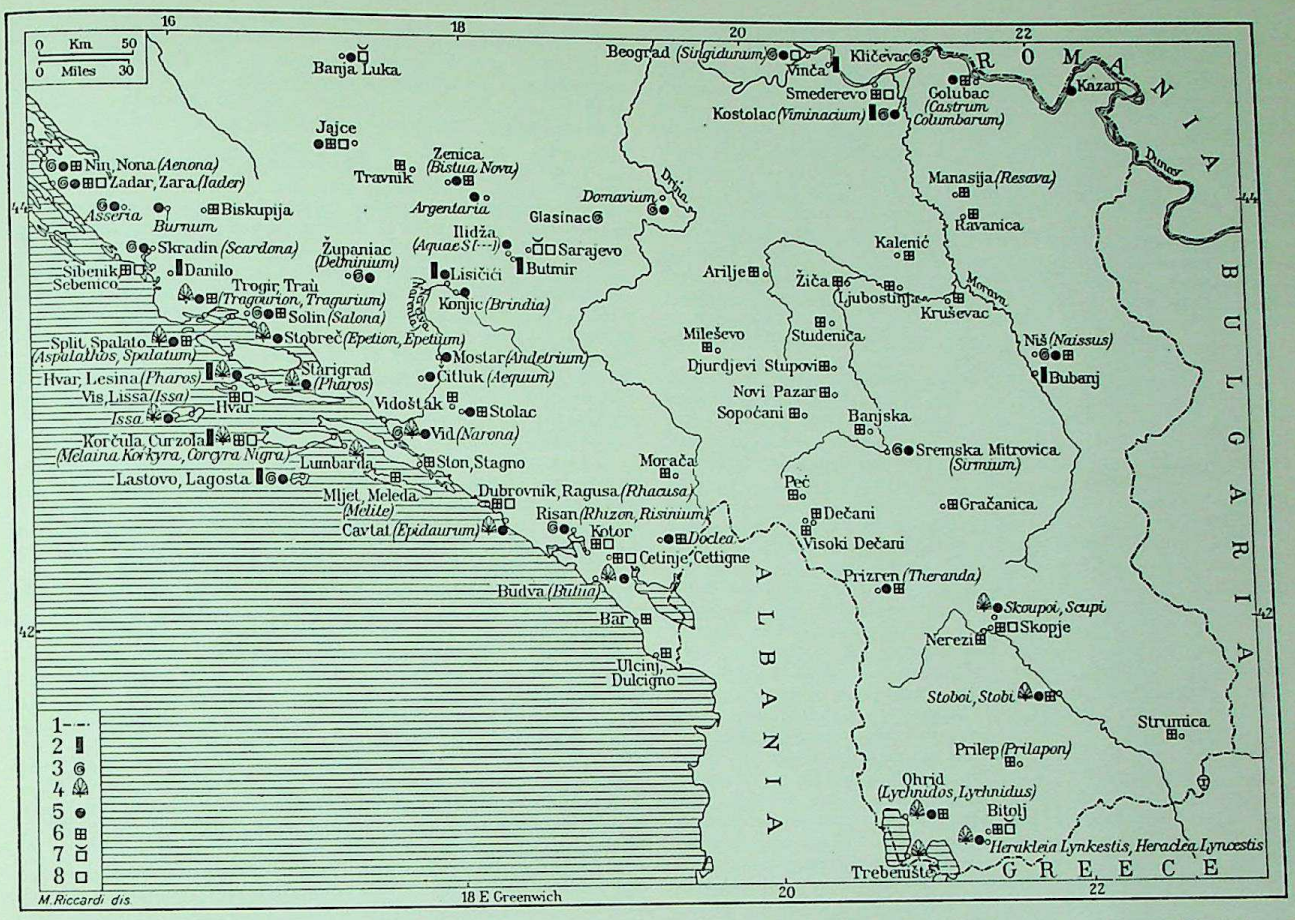
Renaissance painting in the region of Slovenia depended on foreign artists. Several churches ordered altarpieces from the most famous Italian painters; thus Tintoretto painted a St. Nicholas for the church at Novo Mesto, and Palma Giovane a St. John for the Capuchin convent at Ljubljana (now in the church of the Ursulines in that city).

The decline of the Turkish empire and the victory over Protestantism helped to renew artistic life in Slovenia in the 17th century; this revival was still dominated by Italian artists. The late baroque gave Slovenia its finest monumental architecture and sculpture: the Cathedral of Sv. Nikolaja, at Ljubljana, was built to the designs of Andrea Pozzo (Puteus), and Domenico Rossi built the elegant Church of the Križev Niška (Teutonic Knights), also at Ljubljana. The leading sculptor of this epoch, Francesco Robba, was active in Ljubljana and in neighboring Zagreb, where his finest works are preserved. While the Italians dominated architecture and sculpture, Slovenia soon witnessed a first great generation of domestic baroque painters; although in the beginning of the 18th century (1703–05) the Italian Giulio Quaglio decorated the Cathedral of Ljubljana with frescoes, during the following decades — partly under his influence — the first great Slovenian baroque artists appeared: Franz Jelovšek (1700–64), Fortunat Bergant (1721–69), and Anton Cebej (1722–74). Another group of foreign artists came to the fore, this time Austrian, among which the most outstanding is Martin Johann Schmidt (known as Kremser-Schmidt; 1718–1801), who in the 1750s painted several altarpieces for the church at Velesovo.

b. Croatia. Medieval artistic manifestations in Croatia were almost completely destroyed, the Romanesque monuments during the Tatar invasion in 1241 and the Gothic monuments during the Turkish wars. The largest medieval monument extant is the Cathedral of Zagreb, built after French models in the 1280s but much altered later; in the vestry some rather faded frescoes of late Romanesque style are still preserved. After the Tatar invasion, the Church of Sv. Marko in Zagreb was begun, but it was largely rebuilt in the 15th century. The only other remains of Gothic monumental architecture in Croatia are the impressive ruins of the three-aisled Abbey church at Topusko. The rich 15th-century Pauline monastery at Lepoglava originally had a church in late Gothic style, but in the 17th century it was enlarged and rebuilt in baroque style.

In Zagreb there are no important baroque churches. Sv. Katarine, the fairly modest Jesuit church, does not compare with other baroque churches of the province. In northern Croatia the baroque center

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Southern Yugoslavia, principal centers and monuments of historical and artistic interest. *Key*: (1) Modern political boundaries; (2) Neolithic and Bronze Age settlements; (3) settlements and archaeological sites from the Bronze and Iron ages; (4) Greek centers and archaeological sites; (5) Roman centers and archaeological sites; (6) medieval centers; (7) monuments of Moslem art; (8) modern centers.

was Lepoglava, where, in the monastery itself, the Pauline monks dedicated themselves to architecture, painting, sculpture, stucco, and metalwork. Among them the most outstanding was the Tirolese painter Johann (Jochan) Ranger (1700–53), who painted frescoes in the new parish church at Belec (1739–40), the finest baroque building in northern Croatia; in the main church and refectory in Lepoglava (ca. 1742); and in the church of the village of Purga, north of Lepoglava (1750). From the 15th century on, more and more Slovenia-based foreign artists worked in Croatia — for example, Francesco Robba, active in Zagreb — as well as native Slovenian painters. At the same time emerged the first noteworthy Croatian painters, who were pupils of the baroque artists among the Pauline monks; the greatest talent among them was F. Bobich (d. 1728). Toward the end of the 18th century, mediocre Austrian painters came to Croatia. They were predominant in Zagreb in the middle of the 19th century, but along with them Croatian artists were at work, headed by Vjekoslav Karas (1821–58), who began the uninterrupted line of modern Croatian art.

c. Dalmatia. Dalmatia, from the 13th century to the end of the baroque period, had a more independent and richer artistic life than the northwestern provinces of Yugoslavia. In the 19th century, when Dalmatia was taken by Austria, it lost its leading position, regaining a certain importance at the beginning of the 20th century, especially in the field of sculpture.

Romanesque art reached its height in Dalmatian architecture at the beginning of the 13th century, when the Cathedral of Sv. Lovre (XIII, PL. 76) at Trogir (Traù) was erected, the Cathedral of Zadar was altered to its present appearance, and the fine bell tower of the Cathedral of Rab and that of the Cathedral of Split were constructed. In the same period that saw the appearance in Raška of the first Dalmatian painters, the first important native sculptors emerged, notably Andrija Buvina (Guvina), who carved the great wood gate of the Cathedral of Split with 28 reliefs illustrating the life of Christ. In 1240 the most beautiful portal in Dalmatia was created by Radovan for the Cathedral of Trogir (XIII, PL. 76); undoubtedly the reliefs of the Annunciation and the Nativity in the lower part of the bell tower of the same cathedral also come from his workshop.

At the beginning of the 14th century there was marked artistic activity in all the larger towns along the Adriatic coast; records show that almost all of them had workshops for sculpture and painting. In Dubrovnik, the Franciscans erected the church of their monastery, whose cloister was richly decorated at the middle of the century with sculptured ornament by Mihoje Brajkov (Miho of Bar), a local stonecutter; and in 1304–06 the Dubrovnik Dominican monastery was built.

The 15th century marks the last great artistic period in the Dalmatian towns; in fact, the most important artistic works in Dalmatia date from that century. Some masterpieces of 15th-century architecture are preserved, such as the Cathedral of Sv. Jakov at Šibenik (XIII, PL. 76), decorated in a mixture of Gothic and Renaissance styles, the work of Georg Matejević (Juraj Dalmatinac, Giorgio Orsini, Giorgio da Sebenico), Andrija Aleši, and Nikola Firentinac (Niccolò di Giovanni Cocari). The early Renaissance produced triumphant achievements in the roof and dome of this Cathedral. In the 1460s the Knežev Dvor (Palace of the Rectors) was rebuilt at Dubrovnik, partly on the designs of the Florentine artist Michele Michelozzo, while local artists carved the magnificent ornamentation of the Dominican cloister in the same city. During the last years of the century local artists carved the portal of the Franciscan church at Dubrovnik in a richly ornate late Gothic style. At the beginning of the 16th century (ca. 1520) Petar Andrijić designed the Church of Sv. Spas, which remains the purest example of early Renaissance architecture in Dubrovnik. The Sponza Palace at Dubrovnik was built to the designs of Paskoj Miličević, who vacillated between the Gothic and early Renaissance styles, using elements from both. Along with religious and public buildings, several private palaces were erected in Dalmatia in the 15th century usually showing strongly Gothic elements; one of the finest is the Čipiko Palace at Trogir.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Important 15th-century sculptors in Dalmatia included the Italian Bonino da Milano, whose work is to be found at Split and Šibenik, and Georg Matejević from Zadar, active at Šibenik, Split, and Dubrovnik, whose work transcends the framework of the late Gothic through a marked realism that falls within the concepts of the early Renaissance. Andrija Aleši worked on the Baptistery of the Cathedral of Trogir (1467). The finest work of early Renaissance architecture and sculpture in Dalmatia, the Chapel of Sv. Ivan in the Cathedral of Trogir, was executed by Andrija Aleši, Nikola Firentinac, and Ivan Duknović (Giovanni Dalmata), who is well known even outside Dalmatia. Along with monumental sculpture there was also fine metalwork, especially in silver: extant examples include liturgical utensils, crosses, and altarpieces, often of high quality. Besides local artists, among whom Johan Progonović (Progonić; from Novo Brdo, in Kosovo) is the best known, there were also foreigners such as Johann of Basel, who in 1440 worked on the silver altarpiece of the Cathedral of Kotor.

In Dalmatia 15th-century painting gradually freed itself from Byzantine and Gothic traditions. The principal workshops were at Trogir, Šibenik, Dubrovnik, and Kotor. Dubrovnik had the most important local school of painting, and it also attracted to its workshops painters from the neighboring Kotor. Among the painters of the early Renaissance (ca. 1510–20) in Dubrovnik the best were Nikola Božidarević and Mihajlo Hamzić. The Umjetnička Galerija (Municipal Art Gallery) has many works by the Dubrovnik school.

The Turkish invasion, which from the last quarter of the 14th century had dispersed Christian cultural, artistic, and civic life in the interior of the Balkan Peninsula, came to a halt in the 15th century before the walls of the fortified towns along the Adriatic coast. Dubrovnik succeeded in retaining its independence, while the rest of the coast fell under Venetian domination. The former independent cities, economically tied to the interior of the Balkan Peninsula, became Venetian fortresses, garrison towns of a region that was chronically at war. Under these circumstances the independent artistic life began to decline. From the 16th century to the end of the 18th, most of the art in Dalmatia was produced by Venetians. The citizens of Dubrovnik bought pictures by Titian and Palma Giovane; Michele Sanmicheli designed the Loggia and city gate at Zadar and the Loggia on the island of Hvar. However, in most cases the modest requirements of the province were met by less well-known masters. During the 17th and 18th centuries numerous variations of Italian baroque appeared in Dalmatia, often in the same city: in Dubrovnik the Church of Sv. Vlaho was erected by Marino Groppelli in an ornate Venetian style, while the Cathedral and the Jesuit church are in the Roman baroque style. Good sculpture of the baroque period in Dalmatia was executed by Johann Maria Morlaiter, Antonio Corradini, and others. At the same time local artists began to be increasingly concerned with civil architecture. A fine example of a totally baroque seaside town, with its harbor, churches, palaces, and gardens, is Perast, on the Boka Kotorska, now practically a dead city. Local painters made their appearance during the 17th century, the most interesting of them being Tripe Kokolja. However, the works of a few artists of modest talent were unable to stop the steep decline of Dalmatian art, which was to revive only during the last decades of the 19th century.

d. Bosnia-Herzegovina. The two religious forms that dominated Bosnia from the 12th to the 19th century — the Bogomile and the Moslem — were clearly hostile to the visual arts. For this reason in Bosnia and what was later to be Herzegovina there are few examples of monumental art.

There are some interesting Bosnian illuminated parchment documents (14th–15th cent.) of Bogomile origin, with miniatures that fall into two clearly differentiated groups: the earlier type, pen drawings of primitive coloring, dominated by symbols and ornamental motifs, was the work of local artists from Bosnian scriptoriums; whereas the later type, the painted miniatures, in late Gothic style, of the more lavishly decorated codices of the 15th century, was done by Dalmatian artists, probably from Split. Bosnia did not succeed in producing a definite artistic style of its own throughout the entire Middle Ages. In the 15th century, while it was being devastated by internal feudal quarrels, religious wars, and Turkish plundering, it created its own extraordinary art: large sepulchral stones (*stećak*) with primitive reliefs (XIII, PL. 75). All over Bosnia and Herzegovina and in parts of Dalmatia, western Serbia and Montenegro there are necropolises with roughly cut slabs and sarcophaguses. The finest sepulchral stones of this kind are to be found in the Zemaljski Muzej, Sarajevo; the oldest of them are from the end of the 14th century. The decoration of these monuments, which sometimes bear Cyrillic inscriptions, is rather monotonous: the reliefs repeat the same motifs, heraldic signs, symbols, highly conventionalized portraits, and scenes of court life, games, tournaments, and hunting. This coarse art, akin to folk art, continued even after the Turkish victory, up to the 16th century. While the remaining Christian landlords built small churches in the villages beside their family burial grounds in the towns, which became centers of the Turkish administration, large mosques were built: at Sarajevo, the Begova Džamija (1530); at Banja Luka, the Ferhadija Mosque (end of 16th cent.). Beautiful Turkish bridges survive at Mostar (XIII, PL. 75) and Višegrad.

e. Serbia and Macedonia. The Serbian and Macedonian provinces produced a rich medieval art from the 13th century to the middle of the 15th. Serbia's dynamic history is reflected in the history of her arts: each new period of Serbian art unfolds in a different place as the political centers shift from one area to another. The Serbian influence reached a huge territory stretching from southern Macedonia to northern Hungary. Withal, Serbian art maintained an unusual vitality, adapting to new artistic environments but at the same time keeping its own characteristics. From Raška (Rascia; the central Serbian area in the valleys of the Ilear and Lim rivers) it traveled through Macedonia and the Morava Valley, reaching later to the regions around Buda and Timisvara (Temesvar); and at the beginning of the 19th century, after the creation of the new, liberated Serbia, it completed the circle and returned to its place of origin.

In the 13th century the Raška school flourished in Serbia. The architecture of this school represents a cross between Romanesque and Byzantine elements. The stone and marble buildings, single-aisled and vaulted, with a single dome, often have rich sculpture at the portals and windows (XIII, PL. 49). The monastery at Studenica, founded by Stefan Nemanja (founder of the Nemanjić dynasty) and completed about 1209, stands out as the finest example of the Raška architecture (XIII, PL. 47). By 1209 there emerged a clearly Serbian style of painting, which underwent a rapid evolution during the 13th century. The chief extant pictorial works of the Raška school are to be found at Mileševa (XIII, PL. 53), at Peć, at Morača, and at Sopočani (II, PL. 462; XIII, PL. 47). During the last quarter of the 13th century there was a decline in the quality of Serbian painting. The monumental style, with large, powerful forms and intense colors, was replaced by the medieval Byzantine style, which reached Serbia through Macedonia. In Macedonia (then still Byzantine), in the town of Ohrid, the artists who painted the frescoes in the Church of Sv. Klement (1290s) were, between 1307 and 1321, the principal representatives in Serbia of the "Palaeologian renaissance" (see II, cols. 814–819). In the first two decades of the 14th century Serbia rapidly expanded to the south, and the architects and painters of King Milutin created the new style of the united Serbian and Macedonian provinces. In architecture the new style dropped the Romanesque forms and costly materials: only the burial churches of the rulers were erected in marble (the church of the monastery at Banjska, near Kosovska Mitrovica; the monastery church at Dečani, near Peć, XIII, PL. 48; and the Church of the Holy Archangels, near Prizren); other churches were built of stone and of bricks placed so as to form ornamental designs (XIII, PL. 50). This architecture, based on Byzantine principles, broke away from the Romanesque style flourishing on the Adriatic coast. However, though Eastern in construction and materials, the Serbian-Macedonian style of architecture had characteristics alien to Byzantium. The older Byzantine architecture, characterized by horizontal lines, underwent a change in the Serbian and Macedonian provinces, resulting in a more dynamic architecture with clearly stressed vertical lines. The church (1321; XIII, FIG. 75) at Gračanica (in the Kosovo Polje, near Priština) is an example of a new style based on Byzantine forms, although it differs considerably from Greek models in its brisk rhythm, vertical emphasis, and supporting framework. In the early 14th century, along with single-domed churches, five-domed churches are found: the Church of Bogorodica Ljeviška (1307–09; XIII, PL. 48), in Prizren; the Church of Sv. Djordje (1313–17) in the monastery of Staro Nagoričino, near Mlado Nagoričino, east of Kumanovo; and the one at Gračanica.

In early-14th-century Serbia and Macedonia, a new narrative style of fresco painting appeared. The figures grew smaller and more plastic, and the space in which they moved gained in depth; the colors were toned down, realistic details, especially of movement and physiognomy, appearing more often; and the contents of the frescoes became increasingly varied and universal. About 1340–50 Greek painters from the Adriatic coast decorated the large churches of the monasteries of Dečani and Matejic (near Kumanovo) with fresco cycles of an encyclopedic nature (XIII, PLS. 54, 61). Serbian painting was of particularly high quality in the first decades of the 14th century, but later artists adopted a rather superficial narrative style with frequent stereotyped repetitions.

From 1371 to 1459 the Serbian artistic center moved to the Morava Valley. The architecture of the early 14th century served as a model for the new style of the Morava school (see XIII, cols. 80–81). The basic techniques remained the same, but rich stone ornamentation, especially brightly colored bas-reliefs, was added. Interlacing patterns, stylized palms, fantastic animals, and human figures adorn

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

portals and windows. The decorative façades enclose the internal structure, in which cubic and semicircular forms of noble proportions are linked. The finest buildings of the Morava school were erected in the late 14th and early 15th centuries: the church of the monastery of Ravanica, near Cuprija (ca. 1375; XIII, PLS. 50, 51); the church of the monastery of Kalenić, near Svetozarevo (beginning of 15th cent.); and the monastery of Manasija (ca. 1406–18; called Resava in the Middle Ages), near Despotovac. The frescoes of the Morava school, particularly beautiful at Ravanica, Kalenić (XIII, PL. 55), and Manasija (XIII, PLS. 54, 62), are distinguished by their high artistic quality.

The breakdown of the independent Serbian states in the second half of the 15th century did not extinguish all Christian artistic manifestations. After the first wave of Turkish terror, during which the Christian monuments in the towns and along the main communication routes suffered damage, there was a reorganization of the Serbian church; the patriarchate of Peć was reestablished in 1557. The patriarchs administered an enormous territory, extending from Turkish Hungary in the north to Ohrid in the south and from parts of Bulgaria in the east to the Croatian towns of Požega, Križevci, and Lepavina in the west. In this huge area, characterized by different social and cultural groups, flowered an artistic life with various centers and many local variations. The last Serbian kings encouraged the construction of representative ecclesiastical buildings on their lands in Hungary. The monasteries in the Fruška Gora (north of Belgrade) constituted the main center of this art, which was influenced by the Serbian monastery of Chilandari on Mount Athos. Strong artistic refuge was provided by the old monasteries, especially the Monastery of Sv. Apostola at Peć, the residence of the patriarchs.

The wealthy townspeople in the large cities (Skoplje, Sarajevo, etc.) erected modest, low, but ample churches without bell towers or domes, while the villagers constructed small stone churches, usually vaulted, whose architecture depended on the nearest important cultural center; thus different architectural styles sprang up, for example, in the Orthodox villages around Dubrovnik, in the villages near Skoplje, and in those around Prizren.

During the Turkish period the monumental frescoes disappeared, but the painting of icons developed to a high level. In the 16th and 17th centuries most Serbian painting was done for the iconostases, which often had gilded wood carvings and icons on several levels. The decoration of iconostases became a substitute for the former mural paintings, and it remained the most important and monumental expression of Serbian painting up to the 18th century.

The contemporary epoch and the growth of national art. The first steps toward independent artistic creation in Slovenia and Croatia in the early 18th century were hampered by the political process of Germanization and Magyarization. The Serbs, who had strong traditions, a different religion from their neighbors, relative economic independence, and a certain importance in Austrian eyes because of their military capabilities, were the first among the Yugoslav people to develop a new art. In the towns of Hungary, such as Buda, Székesfehérvár, Novi Sad, Vršac, Pančevo, and especially Timisvara, a number of Serbian painters, some of them trained at the Vienna Academy, taught students who later perfected themselves in Vienna and Italy. The reborn Serbian art made rapid progress, showing continuity in its evolution. In the second half of the 18th century a generation of Serbian painters appeared: Teodor Ilić Češljar, Teodor Kračun, and Jakov Orfelin, the last representatives of monumental religious painting. A secular and bourgeois art was developed in Serbia by the first classicists, Arsa Teodorović (1768–1826) and Pavle Djurković (1772–1830), gifted portrait painters. In Timisvara, where Teodorović had his studio, the first representatives of the Serbian Biedermeier style began their training: Konstantin Danilo (1799–1858) and the great Serbian romantic poet and painter Djura Jakšić (1832–78).

Before Jakšić most Serbian painters studied in Vienna; he, however, went to Munich after studying in Timisvara and Vienna. Among the Serbs who studied in Munich the most original talent was that of Djordje Krstić (1850–1907), the chief representative of Serbian realism. Krstić's younger friends, Uroš Predić (Predits; 1857–1953) and Pavle Jovanović (1859–1957), were representative of academic realism; they painted religious, historical, and genre pictures.

Modern Slovene art has not had any permanent centers. The Slovene Franc Kavčić (Caucig; 1762–1866), a learned classicist, worked mainly in Vienna; Josip (Giuseppe) Tominz (1790–1866), the well-known portrait painter from Trieste, did not influence other Slovene artists. The brothers Johann and Djordje Šubic, realist painters, worked abroad, as did Anton Ažbe (1862–1905), a Slovene painter in Munich, in whose studio the first generation of Yugoslavic impressionists was trained, those Slovene and Serbian painters who in the beginning of the 20th century laid the foundations of a modern Yugoslavic school of painting.

In Croatia the new art had a modest and belated start. Until the middle of the 19th century Croatia was dominated by foreign artists, except for Vjekoslav Karas (1821–58), who had no followers. The first painter from Croatia to attract attention abroad was Nikola Mašić (1852–1902). It was only during the first years of the 20th century that an active artistic center was created in Zagreb, headed by Vlaho Bukovac (1855–1922), a pupil of Alexandre Cabanel; Bukovac painted portraits and decorative compositions and succeeded in grouping around himself a large number of artists who were later influenced by the Vienna Sezession.

The first period of modern Yugoslavic art began with the generation of Slovene, Croatian, and Serbian impressionists. Through the activity of young Yugoslav artists who felt the need for national unity the cities that had crystallized as political entities — Ljubljana, Zagreb, and Belgrade — became focuses of the new Yugoslavic art. In the first decade of the 20th century it was the Slovene impressionists who distinguished themselves in the field of painting: Ivan Grohar (1867–1911), Rikard Jakopič (1869–1943), Matej Sternen (1870–1949), and Matija Jama (1872–1947), followers of the German impressionists. The Croatians, who worked under French influence, clearly differed from them: Miroslav Kraljević (1885–1913), Josip Račić (1885–1909), and Vladimir Becić (1886–1954). The artistic life of Belgrade was in those years dominated by the clash between old and new ideas, and the impressionists had difficulty in breaking through; besides Milan Milovanović (1876–1945) and Kosta Miličević (1877–1920) there was the temperamental Nadežda Petrović (1874–1915), who was the first to introduce Fauvist concepts into Serbian art.

The central personality of the new Yugoslavic art was the sculptor Ivan Meštrović (1883–1962; I, PL. 130), whose early works, inspired by folk songs, brought him fame. Meštrović gathered around himself a group of Yugoslav sculptors and painters whom he greatly influenced: among the sculptors were Toma Rosandić (b. 1878), Marin Studin (b. 1895), and Anton Augustinčić (b. 1900); among the painters, Joza Kljaković (b. 1889) is outstanding.

Yugoslavic art made rapid progress between the two wars. New forces and new orientations notably accelerated the evolution of artistic life. Along with Belgrade, Zagreb, and Ljubljana, new centers sprang up in Dalmatia, Bosnia, and Macedonia. Having reached unity as a state, the Yugoslavs no longer felt the urge to create one single, unified artistic expression, the object of the Zagreb artists who had flocked around Meštrović. In all three centers (Belgrade, Zagreb, and Ljubljana) immediately after 1919, there was a reaction among the younger generation against impressionism. The Slovenes Franc (b. 1895) and Anton (Tone; b. 1900) Kralj and the Croatians Vladimir Becić and Joza Kljaković showed a marked interest in compact forms. In Belgrade the tendencies toward constructivism crystallized in two groups. The leading artists in the first one, inspired by Cézanne, included Petar Dobrović (1890–1942), Jovan Bijelić (b. 1886), Marin Tartalja (b. 1894), and Milo Milunović (b. 1897); the artists of the second group, followers of André Lhote, included Sava Šumanović (1896–1942), Stojan Aralica (b. 1888), Milan Konjović (b. 1898), and others.

About 1930 there was an important change; owing to French influence, Yugoslavic painters suddenly showed increasing concern with color. In Zagreb, besides Emanuel Vidović (1872–1953) and Ljubo Babić (b. 1890), younger talent appeared, such as Jerolim Miše (b. 1890) and Juraj Plančić (1899–1930). In Ljubljana there was a similar development; here the most outstanding artists are Gojmir Anton Kos (b. 1896), Stane Kregar (b. 1905), France Mihelič (b. 1907), and Maksim Sedej (b. 1909). Belgrade, which follows Paris in artistic ideas, had in that period numerous groups of painters of quality. One group, following Fauvist concepts, insisted on intense coloring — Jovan Bijelić, Ignjat Job (1895–1936), Milan Konjović, Petar Lubarda (b. 1907), and Zora Petrović (1894–1962) — while a second group was closer to the Parisian intimists: Ivan Taboković (b. 1898), Nedeljko Gvozdenović (b. 1902), Marko Celebonović (b. 1902), and Predrag Milosavljević (b. 1908). In those same years the artistic life of Bosnia and Macedonia also lost its provincial character.

In Belgrade the sculptors of the period between the two wars freed themselves from Meštrović's influence; among them may be mentioned Petar Palavičini (1888–1958), Risto Stijović (b. 1894), and Streten Stojanović (b. 1898), a pupil of Emile Antoine Bourdelle and creator of some of the best portraits in contemporary Serbian sculpture. Zagreb, however, remained the most important center for sculptors, with Meštrović the principal artist. Besides this great artist and his followers, others working in Zagreb in the middle decades of the 20th century were Frane Kršinić (b. 1897), Vanja Radauš (b. 1906), Vojin Bakić (b. 1915), and Kosta Angeli Radovani (b. 1916). The Slovene Lojze Dolinar (b. 1893), whose style was similar to that of the Zagreb artists, later went to live in Belgrade.

At the end of World War II, Yugoslavic art was dominated for a time by socialist realism; but after 1950 that line was dropped and

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

the earlier tendencies of Yugoslavic art were further developed. During the 1960s some individualists left the ranks of older artists and joined later tendencies of contemporary international art (see V, col. 209); among these, Petar Lubarda, in particular, has achieved considerable success.

Svetozar Radojčić

Folk art. For many centuries life on the Yugoslavic plains had been dominated by sedentary agriculture and life in the mountains by seminomadic sheep rearing; because of this pattern, traditional and popular art had survived up to very recent times. It often had its roots in antiquity and was frequently marked by a noteworthy continuity, even though in the course of the centuries it was enriched and altered by individuals or by contacts with other, more refined cultures. The recent clash with the modern world has naturally broken up the traditional pattern of life, so that the types, forms, and products of folk art are disappearing even in the most conservative areas.

Typologically Yugoslavic folk art follows the characteristics of the different ethnographic areas, although as a whole it represents a patrimony with important common features (see also V, col. 492).

In the area constituting the southern edge of the Pannonian plain, which since the Neolithic period has been devoted to agriculture, the self-sufficiency of the "clan" (*zadruga*) and the division of labor within it determined special customs and habits that have facilitated the perfection of tools and utensils and have led to a high level of handicraft. The complex structure of the house made of oak beams, the carvings and paintings adorning it, the ornamental exuberance of fabrics (V, PL. 347), furnishings, and clothing are closely linked with the rest of the Pannonian basin. However, the form of Croatian and Slovene traditional dress reveals Renaissance and baroque influences, together with the primitive Slavic heritage. In the Croatian Posavina, the art of flax weaving was transformed into a domestic industry at the beginning of the 20th century by S. Berger, the collector.

The coast from Istria to Bojana has always taken part in the historicultural evolution of the Mediterranean area. The compact stone settlements developed in accordance with the norms governing the Aegean *politeia*; later, the Slav population continued the Roman and Byzantine traditions, and this mixture has given rise to an extraordinarily lively local artistic production. One of the strongest traditions is the use of silk as raw material; Dalmatia's traditional silk embroidery, with its various shades of red-purple, repeats Hellenistic motifs. The popular costume of the women of the coast shows the impact of the 15th century; on the island of Pag, for instance, the art of netting — an archaic form of lacemaking, which Venice was later to develop to a level of great refinement — is still practiced.

In the Dinaric mountain region very ancient traditional elements still survive. In this hinterland, where the sheep rearing is still subject to seasonal migration, the Paleo-Mediterranean heritage is evident in rites, cults, and dances (the cults of snakes, summits, rocks, water, and springs; women's dance with two handkerchiefs symbolizing the snake; etc.), in the shape of dresses (circular skirt in the Minoan style), in construction (buildings of a circular plan), and in the funeral symbolism (pigeons in the tombs); these customs are also to be found in northern Albania.

The Vardar basin in Macedonia, besides a great wealth of songs, music, and dances, still retains a characteristic figural art. The Turko-Oriental influence is limited, as in Bosnia and Herzegovina, to the bazaars, while the village populations go on cultivating the land with ancient irrigation methods along the rivers, and in the mountains the Balkan shepherds live as nomads. A predominant element in local artistic production is the handwoven fabric made by the women; the male guilds continue their ancient crafts as silversmiths (V, PL. 350), leatherworkers, and woodcarvers. The rich embroideries, the characteristic weaving of silk and metal threads, and the manufacture of rugs and blankets recall the old ritual fabrics of the Syro-Byzantine world. The luxurious costumes and exuberant ornamentation still survive in this area but are beginning to disappear.

The Morava Valley has always been a busy thoroughfare, and life there has consequently undergone many changes. In Serbia folk art has, however, retained some ancient features such as the Šumadija house and the national costume. At the center of traditional customs is ancestor worship, including the well-known celebration of the family feast (*krsno ime*, or *slava*), with which special monuments in the country churchyards are connected.

The northwestern part of Yugoslavia (Slovenia) is part of the eastern Alps; from here various Alpine influences have penetrated into the Pannonian plain. Through Slovenia the traditional type of glass painting (V, PL. 353) has spread; no longer anonymous, it is now produced by several contemporary artists. In fact, while many rural painters and sculptors continue their activities on the basis of the traditional stylistic patterns, some "sophisticated" artists show a general tendency to organize and resuming and elaborating the various types and forms of folk art.

Marijana Gušić

BIBLIOG. *General works*: *a. Antiquity*: S. Casson, Macedonia, Thrace and Illyria, Oxford, 1926; N. Vulić, Antički spomenici u nasoj zemlji (Old Monuments of Our Land) (Srpska Kraljevska Akad., Spomenik, LXXI), Belgrade, 1931; J. Smodlaka, Imena mesta i mestana na ten Jugoslavije (Roads and Itineraries in Yugoslavia), Vjesnik za arheol. i h. dalmatinsku, LII, 1935–49, sup., II, pp. 1–160; G. Novak, Prošlost Dalmacije (The Past of Dalmatia), 2 vols., Zagreb, 1944; S. Jesse, Bibliografski prispevki k jugoslovanski arheologiji . . . , Arheol. vestnik, 1950 ff.; J. Alexander, Archaeology in Jugoslavia since 1948, Archaeol. News Letter, V, 1954–55, pp. 227–28, VI, 1955–56, pp. 20–22; C. Picard, Observations archéologiques en Yougoslavie (septembre 1953), CRAI, 1954, pp. 79–95; C. Battisti and P. Laviosa Zambotti, I Balcani e l'Italia nella preistoria con riguardo alle origini preindoeuropee dell'Illirico, SEtr, XXIV, 1955–56, pp. 271–99; A. Benak and B. Čović, Glasinac, 2 vols., Sarajevo, 1956–57; V. and H. Dumitrescu, Din activitatea arheologilor jugoslavi (Activity of Yugoslav Archaeologists), Studii şi cercetări numismatice, VIII, 1957, pp. 365–73; M. Velicković, Catalogue des terres cuites grecques et romaines, Belgrade, 1957; I. Čremošnik, Über die römische Keramik in Jugoslavien, Acta Rei Cretariae Romanae Fautorum ubique consistentium (Baden-Brugg, 1957), Haverford, Pa., 1958; D. Garašanin, Prilog proučavanju veza izmed žu naše zemlje i Grčke u Halštatsko doba (Essay on the Hallstatt Period Relationship between Yugoslavia and Greece), Glasnik Srpske Akad. Nauka, X, 1958, p. 83; V. Trbuhović, Prilog proučavanju hronologije metalnog doba u Jugoslaviji (Essay on the Iron Age Chronology of Yugoslavia), Glasnik Srpske Akad. Nauka, X, 1958, pp. 254–55; A. Frova, L'art di Roma e del mondo romano, Turin, 1961, pp. 560–601; G. Novak, Stari Grci na Jadranskom moru (The Ancient Greeks on the Adriatic), Rad Jugoslavenske Akad. znanosti i umjetnosti, 322, 1961, pp. 145–221; Actes XIIe Cong. int. des ét. byz. (1961), 2 vols., Belgrade, 1963–64; D. Stričević, I monumenti dell'arte paleobizantina in rapporto con la tradizione antica ed all'arte medioevale nelle regioni centrali dei Balcani, Mél. Georges Ostrogorsky, Belgrade, 1964, pp. 399–415. See also the following periodicals: B. archeol. e storia dalmata (later, after 1920, Vjesnik za arheol. i h. dalmatinsku), 1878 ff.; Vjesnik Hrvatskoga Arheološkoga Društva, 1879 ff.; Atti i mem. Soc. Istriana di Archeol. e Storia Patria, 1884 ff.; Starinar, 1884 ff.; Spomenik, Srpska Akad. Nauka, 1888 ff.; Glasnik Zemaliskog Muzeja u Bosni i Hercegovini, 1889 ff.; Arheološki vestnik, 1950 ff. *b. Medieval and modern periods*: I. Kukuljević-Sakcinski, Slovnik umjetnikah jugoslavenskih (Dictionary of Yugoslav Artists), 4 vols., Zagreb, 1858–60; J. Mal, Zgodovina umetnosti pri Slovencih, Hrvatih in Srbih (History of Art among the Slovenes, Croats and Serbs), Ljubljana, 1924; K. Hielscher, La Yougoslavie, Paris, 1926; G. Novak, ed., Šišićev Zbornik (Mélanges Šišić), Zagreb, 1929; L. Karaman, Iz kolijevke hrvatske prošlosti (Cradle of the Croatian Past), Zagreb, 1930; M. Kašanin, L'art yougoslave des origines à nos jours, Belgrade, 1939; M. Garašanin and J. Kovačević, Pregled materijalne kulture Južnih Slovena (Panorama of the Material Culture of the South Slavs), Belgrade, 1950; J. Korošec, Uvod v materijalno kulturo Slovanov zgodnjega srednjega veka (Introduction to the Material Culture of the Slavs of the High Middle Ages), Ljubljana, 1952; F. Stelè et al., Pola vijeka jugoslovenskog slikarstva (A Half Century of Yugoslav Painting), Zagreb, 1953; G. Millet, La peinture du moyen âge en Yougoslavie, 3 vols., Paris, 1954–62; O. Bihalji-Merin, Yugoslav Sculpture in the 20th Century, Belgrade, 1955; E. Ravnikar, Post-war Architecture in Yugoslavia, Architects' Y.B., VI, 1955, pp. 121–36; V. J. Djurić, Icones de Yougoslavie, Belgrade, 1961; G. Gamulin, Stari majstori u Jugoslaviji (Old Painters of Yugoslavia), Zagreb, 1961; W. Molè, Sztuka słowian południowych (Art of the South Slavs), Warsaw, 1962; S. Radojčić, Rapports artistiques serbo-roumains de la fin du 14e jusqu'à la fin du 17e siècle à la lumière des nouvelles découvertes faits en Yougoslavie, Actes du Colloque int. de civ. balkaniques, Sinaïa, 1962, pp. 23–30; D. Bošković et al., L'architecture de la basse antiquité et du moyen âge dans les régions centrales des Balkans, Actes XIIe Cong. int. des ét. byz. (1961), I, Belgrade, 1963, pp. 155–247, 387–407. *c. Folk art*: L. Salvator, Das was verschwindet, Leipzig, 1905; N. Bruck-Auffenberg, Dalmatien und seine Volkskunst, Vienna, 1911; N. Bruck-Auffenberg, Naša narodna umjetnost (Our Folk Art), Split, 1931; L. Babić, Boja i sklad (Color and Harmony), Zagreb, 1943; M. Gavazzi, Hrvatska narodna umjetnost (Croatian Folk Art), Zagreb, 1944; V. Žganec and N. Sremec, ed., Hrvatske narodne pjesme i plesovi (Folk Songs and Dances of Croatia), Zagreb, 1951; M. Gušić, Commentari, Zagreb, 1955; J. Šobić, Odeća i ornamenat Srbije (Costume and Ornament of Serbia), Belgrade, 1956; O. Bihalji-Merin, Primitive Artists of Jugoslavia, New York, 1964.

Slovenia: *a. Antiquity*: J. Mal, Probleme aus der Frühgeschichte der Slowenen, Ljubljana, 1939; J. Korošec, Nekaj primerov zgodnje predzgodovinske plastike v Sloveniji (Some Examples of the Most Ancient Prehistoric Sculpture in Slovenia), Arheol. vestnik, I, 1950, pp. 12–30; S. Gabrovec, Poročilo o slučajnih najdbak v Sloveniji (Account Concerning Some Fortuitous Discoveries in Slovenia), Arheol. vestnik, V, 1954, pp. 132–53; A. Schober, Die Römerzeit in Österreich und in den angrenzenden Gebieten von Slowenien, 2d ed., Vienna, 1955; P. Petru and V. Šribar, Nove najdbe (New Discoveries), Arheol. vestnik, VII, 1956, pp. 297–304; J. Kastelic, Nekaj problemov zgodnjesrednjeveske arheologije v Sloveniji (Some Problems of High Medieval Archaeology in Slovenia), Arheol. Vestnik, XV–XVI, 1964–65, pp. 109–24. *b. Medieval and modern periods*: J. Gruden, Zgodovina slovenskega naroda (History of the Slovene People), 2 vols., Celovec, 1912–39; F. Stelè, Oris zgodovine umetnosti pri Slovencich (Summary of the History of Art among the Slovenes), Ljubljana, 1924; F. Stelè, L'art en Slovénie et le byzantinisme, L'art byzantin chez les Slaves, II, Paris, 1932, pp. 381–93; A. Melik, Slovenija, 4 vols., Ljubljana, 1935–60; F. Stelè, Monumenta artis slovenicae, 2 vols., Ljubljana, 1935–38; F. Stelè,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Slovenski slikarji (Slovene Painters), Ljubljana, 1949; M. Kos, Zgodovina Slovencev od naselitve do 15. stoletja (History of the Slovenes to the 15th Century), Ljubljana, 1955; F. Stelè and M. Stelè-Možina, L'art baroque en Slovénie, Ljubljana, 1957; F. Šijanec, Sobodna slovenska likovna umetnost (History of Slovene Contemporary Art), Maribor, 1961; R. Meinel, Burgen im ehemaligen Herzogtum Krain, Burgen und Schlösser, III, 1962, pp. 14–16; M. Mušić, Arhitektura in čas (Architecture and Our Time), Maribor 1963.

Croatia: *a. Antiquity*: C. Patsch, Lika in römischer Zeit, Vienna, 1900; A. L. Frothingham, Roman Cities in Italy and Dalmatia, London, New York, 1910; C. Gurlitt and G. Kowalczyk, Denkmäler der Kunst in Dalmatien, Berlin, 1910; C. Patsch, Archäologisch-epigraphische Untersuchungen zur Geschichte der römische Provinz Dalmatien, Wissenschaftliche Mitt. aus Bosnien und Herzegovina, XII, 1912, pp. 68–167; G. Novak, Topografija i etnografija rimske provincije Dalmacije (Topography and Ethnography of the Roman Province of Dalmatia), B. archeol. e storia dalmata, XXXVIII, 1915, sup.; E. Weigand, Die Stellung Dalmatiens in der römischen Reichkunst, Strena Buliciana, Zagreb, Split, 1924, pp. 77–105; A. Gnirs, Istria praeromana, Karlsbad, 1925; L'architettura della Dalmazia, Rome, 1943; S. Stucchi, Le difese romane alla porta orientale d'Italia e il Vallo delle Alpi Giulie, Aevum, XIX, 1945, pp. 342–56; R. Battaglia, Le civiltà preromane della Venezia Giulia e le prime immigrazioni slave, La Venezia Giulia terra d'Italia, 1946, pp. 37–58; B. and F. Forlati, L'arte nella Venezia Giulia, La Venezia Giulia terra d'Italia, 1946, pp. 139–52; M. Mirabella Roberti, Notiziario archeologico istriano (1940–48), Atti e mem. Soc. istriana di archeol. e storia patria, N.S., I, 1949, pp. 100–45; M. Gorenc, Antikna skulptura u Hrvatskoj (Ancient Sculpture in Croatia), Zagreb, 1952; C. Fiscović, ed., Prilozi povijesti umjetnosti u Dalmaciji, Zagreb, 1954; Historija naroda Jugoslavije (History of the People of Yugoslavia), I, Zagreb, 1954, passim; G. Novak, Prehistorijski Hvar (Prehistoric Hvar), Zagreb, 1955; V. Scrinari, I capitelli romani della Venezia Giulia e dell'Istria, Rome, 1956; A. Degrassi, I porti romani dell'Istria, Atti e mem. Soc. istriana di archeol. e storia patria, N.S., V, 1957, pp. 24–81; M. Pavan, Ricerche sulla provincia romana di Dalmazia, Venice, 1958; D. Rendić-Miočević, Grčko-rimski kulturni spomenici: Hrvatska (Greco-Roman Monuments: Croatia), E. Jugoslavije, III, Zagreb, 1958, pp. 605–09; Š. Mlakar, Istra u antici (Istria in Antiquity), Pula, 1962. *b. Medieval and modern period*: R. Eitelberger von Edelberg, Die mittelalterlichen Kunstdenkmale Dalmatiens in Arbe, Zara, Nona, Sebenico, Trau, Spalato und Ragusa, Vienna, 1884; G. Caprin, Istria nobilissima, 2 vols., Trieste, 1907; G. Szabo, Spomenici kotara Klanjec i Pregrada (Monuments of the Klanjec and Pregrada Districts), Vjesnik Hrvatskoga Arheol. Društva, XII, 1912, pp. 207–26; G. Szabo, Spomenici kotara Krapine i Zlatar (Monuments of the Krapina and Zlatar Districts), Vjesnik Hrvatskoga Arheol. Društva, XIII, 1913–14, pp. 103–204; G. Szabo, Spomenici kotara Ivanec (Monuments of the Ivanec District), Vjesnik Hrvatskoga Arheol. Društva, XIV, 1915–19, pp. 22–97; G. Szabo, Spomenici proslosti u Srijemu (Monuments of the Past in Sirmium), Savremenik, XI, 1916, pp. 43–50; A. Venturi, E. Pais, and P. Molmenti, Dalmazia monumentale, Rome, 1917; G. Szabo, Sredovječni gradovi u Hrvatskoj i Slavoniji (Medieval Castles in Croatia and Slavonia), Zagreb, 1920; A. Dudan, La Dalmazia nell'arte italiana, 2 vols., Milan, 1921–22; M. Vasić, Arhitektura i skulptura u Dalmaciji (Architecture and Sculpture in Dalmatia), Belgrade, 1922; J. Strzygowski, Die altslavische Kunst, Augsburg, 1929; Ć. Truhelka, Starokršćanska arheologija (Paleo-Christian Architecture), Zagreb, 1931; L. Karaman, Notes sur l'art byzantin et les Slaves catholiques de la Dalmatie, L'art byzantin chez les Slaves, II, Paris, 1932, pp. 322–80; L. Karaman, Umjetnost u Dalmaciji XV i XVI veka (15th- and 16th-century Art in Dalmatia), Zagreb, 1933; E. Condurachi, Monumenti cristiani nell'Illirico, EphDR, IX, 1940, pp. 1–116; L. Babić, Umjetnost kod Hrvata (Art of the Croats), Zagreb, 1943; M. Gavazzi, Hrvatska narodna umjetnost (Croat Folk Art), Zagreb, 1944; I. Bach, Umjetnost XVII i XVIII stoljeća u Hrvatskoj (17th- and 18th-century Art in Croatia), Arhitektura, 1948, pp. 13–17; L. Karaman, O umjetnosti srednjeg vijeka u Hrvatskoj i Slavoniji (Medieval Art in Croatia and Slavonia), Historijski zbornik, I, 1948, pp. 103–27, III, 1950, pp. 125–74; L. Karaman, O srednjovjekovnoj umjetnosti Istre (Medieval Art of Istria), Historijski zbornik, II, 1949, pp. 115–30; E. Dyggve, History of Salonitan Christianity, Oslo, 1951; L. Karaman, Pregled umjetnosti u Dalmaciji (Compendium of Art in Dalmatia), Zagreb, 1952; M. Miličević, Nepoznata Dalmacija (Unknown Dalmatia), Zagreb, 1955; C. Fisković, Les sculpteurs et architectes vénitiens en Dalmatie au cours du XIV° jusqu'au XVIII° siècle, Atti XVIII Cong. int. di storia dell'arte (Venice, 1955), Venice, 1956, pp. 184–85; A. Horvat, Spomenici arhitekture i likovnih umjetnosti u Medjumuru (Monuments of Architecture and Art in the Medjumurje), Zagreb, 1956; A. Horvat, Spomenici u Hrvatskoj (Monuments of Croatia), Zagreb, 1956 (Eng. trans., Zagreb, 1959); K. Prijatelj, Umjetnost XVII i XVIII stoljeća u Dalmaciji (17th- and 18th-century Art in Dalmatia), Zagreb, 1956; A. Mohorovičić, Problem tipološke klasifikacije objekata srednjovekovne arhitekture na području Istre i Kvarnera (Problems of the Classification by Type of Medieval Construction in Istria and in the Carnaro District), Ljetopis Jugoslavenske Akad., LXIV, 1957, pp. 417–31; A. Horvat, Enciklopedija likovnih umjetnosti, s.v. Barok u Hrvatskoj (Barocco in Croatia), Gotika (Gothic), Historicizam u Hrvatskoj (Historical Style in Croatia), Zagreb, 1959 ff.; B. Marušić, Istra u ranom srednjem vijeku (Istria in the Early Middle Ages), Pula, 1960; I. Petricioli, Pojava romaničke skulpture u Dalmaciji (The Awakening of Romanesque Sculpture in Dalmatia), Zagreb, 1960; F. Stelè, Umetnost v Primorju (Art of the Littoral), Ljubljana, 1960; C. Fisković, Naše primorski kipari i graditelji starijeg doba (Sculptors and Architects of the Adriatic Littoral), Zagreb, 1962; L. Karaman, Bilješke iz historije umjetnosti Dalmacije (Notes on the History of Art in Dalmatia), Anali h. inst. u Dubrovniki, VIII–IX, 1962, pp. 85–98; T. Marasović, Tipologia delle chiese preromaniche in Dalmazia con la cupola costruita su base quadrata, Atti VIII Cong. di studi sull'arte dell'alto Medioevo, I, Milan, 1962, pp. 345–59; K. Prijatelj, Studije o umjetninama u Dalmaciji (Studies of Works of Art in Dalmatia), Zagreb, 1963.

Bosnia-Herzegovina: *a. Antiquity*: C. Patsch, Bosnien und Herzegowina in römischer Zeit, Sarajevo, 1911; A. Benac, Način stanovanja u prehistoriskim periodima Bosne i Hercegovine (Dwellings of Bosnia and Herzegovina in Prehistoric Times), Glasnik Zemaliskog Muzeja u Sarajevu, N.S., VII, 1952, pp. 121–38; E. Pašalić, Novi prilozi poznavanju rimskih cesta u Bosni i Hercegovini (New Contributions to the Study of Roman Roads in Bosnia and Herzegovina), Glasnik Zemaliskog Muzeja u Sarajevu, N.S., VIII, 1953, pp. 276–88; A. Benac, Novi prehistorijiski nalazi iz Bosne i Hercegovini (New Prehistoric Finds from Bosnia and Herzegovina), Glasnik Zemaliskog Muzeja u Sarajevu, N.S., IX, 1954, pp. 163–71; E. Pašalić, O antičkom rudarstv u Bosni i Hercegovine (On Ancient Mining in Bosnia and Herzegovina), Glasnik Zemaliskog Muzeja u Sarajevu, N.S., IX, 1954, pp. 47–75; Č. Borivoj, Ilirska nekropola u Čarakovu (Illyrian Necropolis of Čarakovu), Glasnik Zemaliskog Muzeja u Sarajevu, N.S., XI, 1956, pp. 187–204; I. Čremošnik, Nalazi bojene keramike u Bosni i Hercegovini u rimsko doba (Colored Ceramics of the Roman Period Discovered in Bosnia and Herzegovina), Arheologija, XV–XVI, 1960–61, pp. 184–202. *b. Medieval and modern period*: A. Benac, Olovo, Belgrade, 1951; D. Sergejevski, Ludmer, Sarajevo, 1952; V. S. Bešlagić, Kupres, Sarajevo, 1954; M. Vego, Ljubuški, Sarajevo, 1954; A. Benac, D. Sergejevski and D. Mazalić, Kulturna istorija Bosne i Hercegovine (Cultural History of Bosnia and Herzegovina), Sarajevo, 1955; D. Grabrijan, Arhitektura Bosne i put u savremeno (Architecture of Bosnia and the Path to Modernity), Ljubljana, 1957; M. Miletić, I "Krstjani" di Bosna alla luce dei loro monumenti di Pietra (Orientalia christiana analecta, 149), Rome, 1957; A. V. Solovjev, Bogomilentum und Bogomilengräber in den südslawischen Ländern, Völker und Kulturen Südosteuropas, Munich, 1958, pp. 173–99; S. Balić, Osmanischen Bauten in Bosnien, Wiener Z. für die Kunde des Morgenlandes, LVI, 1960, pp. 1–8; S. Radojčić, Reljefi bosanskih i hercegovačkih stećaka (The Reliefs of the Sepulchral Stones of Bosnia and Herzegovina), Letopis matice srpske, CCCLXXXVII, 1961, pp. 1–15; O. Bihalji-Merin and A. Benac, Bogomil Sculpture, Belgrade, 1962; Z. Čulić, Narodne nošaje u Bosni i Hercegovini (National Costumes of Bosnia and Herzegovina), Sarajevo, 1963.

Serbia: *a. Antiquity*: V. Milojčić, South-Eastern Elements in the Prehistoric Civilization of Serbia, BSA, XLIV, 1949, pp. 258–306; D. Garašanin, Die Steinidole des serbischen Neolithikums, Starinar, N.S., II, 1951, pp. 7–12; M. and D. Garašanin, Arheološka nalazista u Srbij (Archaeological Finds in Serbia), Belgrade, 1951; R. Marić, Prilozi antičkoj istoriji Srbije (Contributions to the Ancient History of Serbia), Starinar, N.S., III–IV, 1952–53, pp. 25–44; M. V. Garašanin, Stand, Probleme und Aufgaben der Vorgeschichtsforschung im serbischen Moravagebiet, Actes III° Sess. Cong. Int. des Sc. Préhistoriques (1950), Zurich, 1953, pp. 98–104; D. Garašanin, 10 godina arheološkog istraživanja NR: Srbije (Ten Years of Archaeological Research in Serbia), Muzeji, muzeološko-konzervatorski časopis, X, 1955, pp. 141–56; D. and M. Garašanin, Neue Hügelgräberforschung in Westserbien, Archaeologia iugoslavica, II, 1956, pp. 11–18; M. Garašanin, Centralna Srbija u praistorisko doba (Central Serbia in Prehistoric Times), Grada Srpska Akad. Nauka, X, 3, 1956, pp. 1–28; M. Grbić, Centralna Srbija u rimsko doba (Central Serbia in Roman Times), Grada Srpska Akad. Nauka, X, 3, 1956, pp. 29–50; M. Grbić, Römische Kunstschätze aus dem serbischen Donaugebiet, Carnuntina, Graz, Köln, 1956, pp. 78–84; D. Garašanin, Ka problemu polja s urnama u Srbiji (Concerning Fields with Urns in Serbia), Zbornik radova Narodnog Muzeja, I, 1958, pp. 297–310; D. and M. Garašanin, Sépultures de l'âge des métaux en Serbie, Bonn, 1958; D. Srejović, Tri praistorske ostare iz Istočne Srbije (Three Prehistoric Deposits from Eastern Serbia), Starinar, N.S., XI, 1960, pp. 47–64; B. Gavela, O paleolitiku Srbije (On Paleolithic Serbia), Arheol. vestnik, XIII–XIV, 1962–63, pp. 85–99; D. Vučković-Todorović, Recherches récentes sur le limes danubien en Serbie, Arheol. radovi i rasprave. III, 1963, pp. 183–93. *b. Medieval and modern period*: G. Millet, L'ancien art serbe, Paris, 1919; V. Petrovic and M. Kašanin, Srpska umetnost u Vojvodini (Serbian Art in Vojvodina), Novi Sad, 1927; M. Vasić, Žiča i Lazarica, Belgrade, 1928; N. L. Okunev, Monumenta artis serbicae, 4 vols., Zagreb, Prague, 1928–32; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; B. D. Kojić, Stara gradska i seoska arhitektura i Srbiji (Old City and Country Architecture in Serbia), Belgrade, 1949; V. Petković, Pregled crkvenih spomenika kroz povesnicu srpskog naroda (Religious Monuments through the History of the Serbian People), Belgrade, 1950; A. Deroko, Monumentalna i dekorativna arhitektura u srednjevekovnoj Srbiji (Monumental and Decorative Architecture in Medieval Serbia), Belgrade, 1953; M. Kašanin, Savremeni beogradski umetnici (Contemporary Artists of Belgrade), Belgrade, 1955; M. Protić, Savremenici (Contemporaries), Belgrade, 1955; J. Šobić, Odeća i ornamenat Srbije (Costume and Ornament of Serbia), Belgrade, 1956; O. Bihalji-Merin, Fresken und Ikonen: Mittelalterliche Kunst in Serbian und Mazedonien, Munich, 1958; C. Stewart, Serbian Legacy, London, 1959; D. Pavlović, Crkve brvnare u Srbiji (Old Wood Churches of Serbia), Belgrade, 1962; D. Bošković, L'architecture médiévale en Serbie et en Macédoine, Corsi di cultura sull'arte ravennate e bizantina, X, 1963, pp. 13–49; R. Hamann-MacLean and H. Hallensleben, Die Monumentalmalereien in Serbien und Makedonien vom 11. bis zum frühen 14. Jahrhundert, Giessen, 1963; R. F. Hoddinott, Early Byzantine Churches in Macedonia and Southern Serbia, London, 1963; R. Ljubinković, Quelques observations sur le problème des rapports artistiques entre Byzance, l'Italie méridionale et la Serbie avant le 13° siècle, Corsi di cultura sull'arte ravennate e bizantina, X, 1963, pp. 181–205; S. Radojčić, La pittura in Serbia e in Macedonia dall'inizio del secolo 12 fino alla metà del secolo 15, Corsi di cultura sull'arte ravennate e bizantina, X, 1963, pp. 293–325; M. Kolarić, Klasicizam kod Srba, 1790–1848 (Classicism in Serbia, 1790–1848), Belgrade, 1965.

Montenegro: G. Gelcich, Le lettere e le arti alle Bocche di Cattaro, Venice, 1879; D. Stratimirović, O prošlosti i neimarstvu Boke Kotorske (On the Past and the Architecture of the Straits of Cattaro) (Spomenik Srpska Kraljevska Akad., XXVIII), Belgrade, 1895; C. Praschniker and

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

A. Schober, Archäologische Forschungen in Jugoslawien, Vienna, 1919; A. Deroko, Srednjevekovni gradovi u Srbiji, Crnoj Gori i Makedoniji (Medieval Castles in Serbia, Montenegro and Macedonia), Belgrade, 1950; D. Bošković, Arhitektura srednjeg veka (Medieval Architecture), Belgrade, 1957, pp. 178–86; P. Mijović, Bokokotorska slikarska škola XVII–XIX vijeka (The School of Painting of the Straits of Cattaro in the 17th–19th Centuries), Titograd, 1960.

Macedonia: N. P. Kondakov, Makedonia, St. Petersburg, 1909; W. A. Heurtley, Prehistoric Macedonia, Cambridge, 1939; M. B. Garašanin, Razmatranja o makedonskom Halštatu (Observations on the Hallstatt Period in Macedonia), Starinar, N.S., V–VI, 1954–55, pp. 29–41; D. Grabrijan, Makedonska kuća (The Macedonian House), Ljubljana, 1955; F. Papazoglu, Makedonski gradovi u rimsko doba (Macedonian Cities in Roman Times), Skoplje, 1957; I. Čremošnik, Na granici kultura Rima i Grčke (At the Border of Roman and Greek Civilization), Tkalčičev zbornik, II, Zagreb, 1958, pp. 7–16; A. Nikolovski, D. Čornakov, and K. Balabanov, The Cultural Monuments of the People's Republic of Macedonia, Skoplje, 1961.

ART CENTERS. *Slovenia* (*Slovenija*). Bled. The village, on the lake of the same name, has a castle (ca. 1004; altered several times in the Gothic period and during the Renaissance), now a museum of baroque furniture and interior decoration, and a Neo-Gothic parish church, with frescoes by Bozidar Pengov. Near the town are important necroplises (8th–11th cent.). The baroque Church of Sv. Marija, on the island in the middle of the lake, has an adjoining museum of religious art.

BIBLIOG. S. Gabrovek, Prazgodovinski Bled (Prehistory of Bled), Ljubljana, 1960; J. Kastelić, Bled, Belgrade, 1965.

Bodešče. Gothic church (15th cent.), with noteworthy wall paintings (15th–16th cent.): in the presbytery, a Maiestas Domini, a representation of the Apostles, and a scene with Christ among the scribes in the temple, by a painter reminiscent of the one at Suha; on the façade, a St. George fighting the dragon and a St. Florian, belonging to the same stylistic current; on the exterior wall of the south aisle, the legend of St. Leonard (1524); and on the exterior wall of the presbytery, a St. Christopher and a St. Leonard, of the Friulian school, and an Imago Pietatis (Christ showing His wounds).

BIBLIOG. F. Stelè, Monumenta artis slovenicae, I, Ljubljana, 1935.

Celje. There are many remains from the Roman period, when under Claudius it was a Roman *municipium* (Claudia Celeia): part of the drainage system, which reveals the network of streets; foundations of houses with mosaic floors; remains of the Temple of Hercules (?); architectural fragments, altars, etc.; and a Roman necropolis. The archaeological material found here is kept partly in the museum of Celje, partly at Graz, Austria (Landesmus. Joanneum). In the Christian Era, Celeia became an episcopal residence; from that epoch there is a basilica (4th cent.) and fragments of floor mosaics with the names of those who commissioned them. The town was the residence of the counts of Celje; ruins of their medieval castle (Starigrad; 14th–15th cent.) are near the town. The Gothic parish church dedicated to St. Daniel, on Romanesque foundations, has frescoes (15th cent.) and a baroque high altar of Venetian origin; the Gothic side chapel of the Seven Sorrows (end of 14th cent.) has noteworthy stained-glass windows. The Nova Grofija (the new residence of the counts; end of 16th cent.), with remains of frescoes from the rococo period and a wood ceiling (ca. 1600) probably painted by a Venetian workshop (the central portion is a rare example of architectural illusionism), now houses the museum; in the courtyard there is a double order of arcades.

BIBLIOG. W. Schmid, Römische Forschungen in Österreich, 1912–14, Bericht Röm-Germ. Kommission, XV, 1923–24, pp. 179–241; F. Kovačić, Petovij in Celeja v starokrščanski dobi (Poetovium and Celeia in the Paleo-Christian Period), Strena Buliciana, Split, Zagreb, 1924, pp. 387–95; I. Orožen, Zgodovina Celja (History of Celje), 2 vols., Celje, 1927–30; F. Stelè, Celjski strop (The Celje Ceiling), Celje, 1929; M. Marolt, Dekanija Celje (The Celje Diaconate), Maribor, 1932; B. Saria, Römische Grabara in Celeia, ÖJh, XXXIX, Beiblatt, 1952, cols. 77–84; A. Bolta, Rimsko grobišče na Bregu v Celju (The Roman Necropolis at Breg in Celje), Arheol. vestnik, VIII, 1957, pp. 317–27; G. Novak and D. Adamesteanu, EAA, s.v. Celeia.

Crngrob. The village, near Škofja Loka, is an important place of pilgrimage. The large Gothic church preserves a Romanesque nucleus. The western portion has three aisles and vaults with intersecting ribs (14th–15th cent.). The presbytery, by a local artist named Jurko Streit (Kranjac), has richly decorated stellar vaults with projecting keystones. The various phases of medieval Slovene painting appear in the pictorial decoration of the church: scenes from the life of the Virgin (early 14th cent.); two cycles of scenes of the Passion, in the Friulian style (before 1410); on the façade, paintings of Giottesque influence and a composition (1460) on the subject of the Sanctification of Sunday, of the school of Johannes de Laybaco (of Ljubljana); remains of frescoes (1453) by Master Bolfgangus; on the south wall, a St. Christopher (1464).

BIBLIOG. F. Stelè, Monumenta artis slovenicae, I, Ljubljana, 1935; J. Veider, Vodič po Crngrobu (Guide to Crngrob), Škofja Loka, 1936; R. Wildhaber, Der "Feiertagschristus" als ikonographischer Ausdruck der Sonntagsheiligung, ZSAKg, XVI, 1956, pp. 1–34 at 19; F. Stelè, Crngrob, Ljubljana, 1962.

Gornji Grad. Remains of a Benedictine abbey (12th–15th cent.), now an episcopal palace; domed baroque church with Romanesque tower and, inside, baroque paintings by the Austrian Martin Johann Schmidt (known as Kremser-Schmidt).

Hrastovlje. A typical village of the Kras plateau, east of Koper. On a neighboring hill stands a late Romanesque church (three aisles with columns, barrel vaults, and three apses) surrounded by high 16th-century walls. The entire interior was painted in 1490 by Johannes of Kastav; on the north wall, the Apostles, saints, scenes of the Passion, the procession of the Magi, all with realistic details; on the south wall, a Danse Macabre; on the main vault, the Creation; and on the side vaults, the cycle of the months. This is one of the most important monuments of the Istrian school of painting, clearly related to the cycle of the presbytery of the Cathedral of Pazin and to the frescoes (1474) by Vincentius of Kastav in the Church of Sv. Marija at Beram.

BIBLIOG. M. Zadnikar, Hrastovlje, Ljubljana, 1962.

Kamnik. The town sprang up in the late Middle Ages near an important junction of the roads leading to Styria. Two castles (12th cent.; now ruined) guarded the road. Of the Mal Grad, a smaller castle in the center of the town, only the small church remains; it is a two-storied building with a crypt below the apse of the lower, first-floor chapel. Both chapels are Romanesque, with semicircular apses; of particular interest is the portal of the lower chapel, with a symbolic decoration and two triumphal arches inside.

In the neighborhood stands the former Mekinje monastery, altered in the baroque period, with a parish church that contains one of the most important wood altars from the workshop of the Franciscan sculptors of Ljubljana.

BIBLIOG. L. Stiasny, Kamnik, n.p., 1894; Kamniški zbornik, 1955 ff.

Koper (It., Capodistria). The town, on a circular island, is now linked to the mainland by means of dikes. For many centuries (until 1797) it was subject to Venice, whose influence has given the town a typically Venetian character. Only one of the twelve gates in the partly preserved surrounding wall is extant: the so-called "Gate of the Mute." The Cathedral, perhaps of Romanesque origin, has a Venetian Gothic and Renaissance façade (15th–16th cent.); in the interior, enlarged in the 18th century by Giorgio Massari, are many paintings (16th–18th cent.), mainly Venetian, including a Madonna and saints by Vittore Carpaccio; also of note are the bell tower (13th–15th cent.), with 17th-century alterations, and the Baptistery (13th cent.), on a circular plan. Civil architecture is closely related to Venetian Gothic and Renaissance styles: Praetorian Palace, formed by joining two 15th-century palaces; Loggia (1462–63), by Nicolò da Pirano and Tommaso da Venezia, altered in the 17th century; late Renaissance Tacco Palace, now a municipal museum.

BIBLIOG. B. Ziliotto, Capodistria, Trieste, 1911; F. Forlati, EI, s.v.; A. Alisi, Il duomo di Capodistria, Rome, 1932; Inventario degli oggetti d'arte d'Italia, V: Provincia di Pola, Rome, 1935, pp. 27–80.

Kostanjevica. The baroque parish church still shows traces of the original Romanesque building, particularly two portals with remains of paintings. The former Cistercian abbey, founded in 1234, includes the ruins of the original church, of the same type as the one at Fontenay, in a Romanesque-Gothic transitional style. The courtyard of the abbey has open, two-storied arcades. There are remains of fortifications from the days of the Turkish raids.

Kranj. The town was founded in the late Middle Ages on the site of a center that had been well known in Illyrian, Roman, Lombard, and Paleo-Slav days. The Lombard necropolis is one of the most important outside Italy. The parish church is a Slovenian hall church with stellar vaults decorated with numerous reliefs.

BIBLIOG. J. Žontar, Zgodovina mesta Kranja (History of Kranj), Ljubljana, 1939; 900 let Kranja: Spominski zbornik (900 Years of Kranj: Memorial Journal), Kranj, 1960.

Laško. The medieval town of Laško has an interesting parish church, the nucleus of which is Romanesque, later enlarged by

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

adding a presbytery and Gothic aisles; it contains a baroque altar and baroque frescoes of a local Styrian school.

Ljubljana. The capital of the People's Republic of Slovenia stands on the site of the Roman Emona. In the Bronze Age (the Vučedol culture) it was inhabited by an Illyrian tribe; then it was occupied by the Celts at the beginning of the 4th century B.C. and by the Romans in the second half of the 1st century B.C. Under Tiberius it became Colonia Julia Emona. The Roman town, built on a camp area, has a rectangular plan with insulae including two or more houses; the surrounding walls from late antiquity, with 22 square towers and 4 round ones at the corners and with two moats and trenches, are partly preserved. Altars, inscriptions, and the like have been found. Ljubljana is mentioned in 12th-century sources, and in the 16th century it became a cultural and artistic center, fully asserting itself during the baroque period; in the 18th century it was the most important artistic nucleus in southeastern Central Europe, its influence spreading toward Croatia (Zagreb, Litto).

The town, dominated by a turreted pentagonal castle of medieval origin (partly rebuilt, 16th–17th cent.), has a Central European baroque aspect. The 1895 earthquake destroyed many important monuments (Camillo Sitte, Max Fabiani, Josef Plečnik, and Edvard Ravnikar, among others, replanned the town), leaving, however, the 18th-century Cathedral of Sv. Nikolaja (1700–17), designed by Andrea Pozzo (Puteus) and decorated with a bold illusionistic fresco composition by Giulio Quaglio; on the altars and in the niches, marble sculptures by Giacomo Contiero (Contieri), Angelo Pozzo Padovani, and Francesco Robba. In the Church of Sv. Jakoba the splendid marble altars are from the workshop of Lukas Mislej, with statues by Contiero, Pozzo, and Robba. The Church of the Križev Niška was designed by Domenico Rossi. The Ursuline church, built during the first decades of the 18th century in Palladian style, contains a marble high altar by Robba and paintings by Palma Giovane and Valentin Metzinger. Public buildings: the episcopal palace, with a large courtyard and open arcades; the Knezoškofijski Seminary, with a portal flanked by giant atlantes and a library with frescoes by Quaglio; the Gradska Koča (Town Hall), with courtyard and open arcades; the Grubarjeva Hiša (1773), with a Zopfstil façade and portal and, inside, a spiral staircase painted by Andreas Herrlein according to designs by M. J. Schmidt; and the Parliament building (architect, V. Glanz; painters and sculptors, Zdenko Kalin, Karel Putrih, Gojmir Anton Kos, Marijan Pregelj, and others), a typical example of modern Slovenian architecture. Also worthy of note are the marble fountain (1751) depicting the three rivers of Carniola, by Robba; the Church of Sv. Franja in the suburb of Šiško; and the cemetery of Žale, by Plešnik. Public monuments: that commemorating the poet F. Prešeren, by Ivan Zajc, and that of Primož Trubar, by F. Berneker; the "Denkmal des Illegalen," by Franc Smerdu; that commemorating B. Kidrič, by Zdenko Kalin.

The Narodni Muzej (Nat. Mus.), housed in a Neo-Renaissance building (1821), comprises archaeological, ethnographic, and folk-craft sections. The Narodna Galerija exhibits Slovenian art from the 12th century to the end of the 19th. The Moderna Galerija specializes in modern Slovenian art, from the impressionists to the present. The Mestni Muzej houses historical documents of the local culture, from the Bronze Age to the present, and displays furniture and interior decorations from the Gothic to the Biedermeier period.

BIBLIOG. I. Vrhovec, Die wohllöbliche Landeshauptstadt Laibach, Ljubljana, 1885; W. Schmid, Emona, Jhb. für Altertumskunde, VII, 1913, pp. 61–192; W. Schmid, Ausgrabungen in Emona 1916, ÖJh, XIX–XX, 1910, Beiblatt, cols. 155–64; F. Stelè, Ljubljana, Ljubljana, 1940; F. Stare, Ilirske najde železne dobe v Ljubljani (Illyrian Discoveries from the Iron Age at Ljubljana) (Slovenska akad. znanosti in umetnosti, I, 7), Ljubljana, 1954; N. Šumi, Arhitektura secesijske dobe v Ljubljani (Architecture of the Secession in Ljubljana), Ljubljana, 1954; J. Šašel, Vodnik po Emoni (Guide to Emona), Ljubljana, 1955; Zgodovina Ljubljane, I: Geologija in arheologija (History of Ljubljana, I: Geology and Archeology), Ljubljana, 1955; P. Petru, Ljubljani — Grad (Ljubljana — Old City), Arheol. pregled, II, 1960, pp. 163–64; N. Šumi, Ljubljanska baročna arhitektura (Baroque Architecture of Ljubljana), Ljubljana, 1961; L. Plesničar-Gec and T. Bregant, Antiena Emona v srcu moderne Ljubljane (Ancient Emona in the Midst of Modern Ljubljana), Ljubljana, 1963; C. Patsch, RS, s.v. Emona; B. Saria and G. Novak, EAA, s.v. Emona.

Mače. The Church of Sv. Nikolaja has frescoes (1467) depicting the procession of the Magi, the martyrdom of St. Ursula, and St. Christopher (the latter two following the well-known engravings of Master E. S.); the work of an unknown artist, these frescoes exemplify the peak of Slovenian fresco painting.

BIBLIOG. F. Stelè, Monumenta artis slovenicae, I, Ljubljana, 1935.

Maribor. The town, the administrative and economic center of eastern Slovenia, has an advantageous geographic position, which accounts for its importance since the Middle Ages. It is mentioned in documents from the 12th and 13th centuries. The Cathedral, originally a Romanesque three-aisled basilica (1150), was remodeled in Gothic style (1420–1530); of note are the Gothic choir, with stalls carved with figures and reliefs (mid-18th cent.) by Johann Georg (Franz) Holzinger, and the altar of the Holy Cross. The 12th-century castle, altered in the 17th century and rebuilt in 1744, has a remarkable main staircase with stuccoes and allegorical figures (mid-18th cent.) as well as a great hall with stucco figures and allegorical ceiling paintings (end of 17th cent.); the chapel is modeled on the Holy House at Loreto. The Pokrajinski Muzej, housed in the castle, contains archaeological, ethnographic, historical, and civic sections. There is also a gallery of modern art, with works by local artists.

BIBLIOG. G. R. Puff, Marburg in Steiermark: Seine Umgebung. Bewohner und Geschichte, 2 vols., Graz, 1847; F. Stelè, Mariborska stolnica (The Cathedral of Maribor), Zbornik za umetnostno zgodovina, XIX, 1943, pp. 1–37; A. Ingolić, Maribor, Maribor, 1955.

Piran. The town, which stands on a promontory on the west coast of Istria, was founded in the Middle Ages, probably on the site of a Roman imperial town; it was under Venetian domination until 1797, hence its typically Venetian architecture. On the mainland side it is enclosed by crenelated walls (15th cent.) with seven defense towers. The Cathedral of Sv. Djordje, originally medieval but rebuilt in the 17th century, has a bell tower modeled on that of St. Mark's in Venice and a baptistery (17th cent.); inside there is a polyptych by Paolo Veneziano. The Church of Sv. Franje (14th–16th cent.) contains an altarpiece by Vittore Carpaccio and a carved wood pulpit (16th cent.). The Church of Sv. Mihajlo (18th cent.) contains an altarpiece attributed to Giovanni Battista Tiepolo. The Church of Sv. Petar (1818) and the town hall are neoclassic.

BIBLIOG. A. Tamaro, Pirano, Trieste, 1910; Inventario degli oggetti d'arte d'Italia, V: Provincia di Pola, Rome, 1935, pp. 144–63; A. Riccoboni, EI, s.v.

Ptuj (anc. Poetovium). Ptuj was an Illyrian, Pannonian, and then Celtic settlement; in the days of Augustus there was a military camp, which gave rise to the thriving town of Poetovium. The town, located north of the Drava River, and the castrum, to the south of it, were linked by a bridge. The town was badly damaged during the barbarian invasions and the civil wars of the 4th century. Archaeological finds include three well-preserved mithraeums; several other sanctuaries; remains of a temple, of the Roman fortifications, and of a Christian basilica; and votive altars, statues, and inscriptions, kept in the Mestni Muzej and in the mithraeums. In one of the town squares there is a monolithic funerary monument called the "Pillar of Orpheus," adorned with reliefs (2d cent. of our era). The town was an important center in the Carolingian period; from 874 to 1565 it belonged to the archbishops of Salzburg and subsequently, until 1918, was under Hapsburg domination. The parish church dedicated to St. George, which dates back to the 12th century although it is now largely Gothic (14th–15th cent.), contains a choir with beautiful carved Gothic stalls (1444); the arcades of the side aisles are Romanesque; and the western portion of the nave was constructed at the end of the 14th century upon the remains of a *westwerk*. Close to the church stands the town tower, decorated with Roman fragments. The former Dominican monastery (early 15th cent.), where the influence of the school of Parler is evident, has a remarkable cloister with figured keystones on the vaults and a refectory with frescoes and stuccoes (early 18th cent.); the monastery now houses a museum with a section of antiquities (among other items, a mithraeum) and a medieval section (fine specimens of Gothic sculpture and a triptych painted ca. 1460 by Konrad Laile for the parish church).

In the vicinity of Ptuj stands the Sanctuary of Ptujska Gora. The large church (ca. 1400), surrounded by remains of fortifications from the time of the Turkish invasions (15th–17th cent.), is the best example of Gothic architecture in Slovenia. The interior has a nave and two aisles with tall columns. On the altars and in the peristyle are Gothic sculptures (ca. 1410) from the school of Ptujska Gora, similar to the Styrian school of Hans Swabnitzer (von Judenburg); of these, the one depicting the Virgin of Mercy now adorns the high altar. Also of note are the Gothic stone choir stalls and the rococo pulpit. Frescoes from the workshop of Giovanni da Brunico (ca. 1420) decorate the Chapel of Sv. Križ.

Near the town, at Breg and at Hajdina, there are two buildings especially designed to contain two mithraeums discovered there. In the nearby village of Markovci the rite of the Kurenti has survived, a fertility rite with obvious traces of shamanism.

BIBLIOG. M. Abramić, Poetovio, Ptuj, 1925; Časopis za zgodovino in narodopisje, XXVIII, 1933 (important articles on the history and art of Ptuj); J. Klemenc and B. Saria, Archäologische Karte von Jugoslawien: Blatt Ptuj, Belgrade, Zagreb, 1936; V. Hoffiller and B. Saria, Antike Inschriften aus Jugoslawien, I: Noricum und Pannonia Superior, Zagreb,

CC-0. Agamnigani Digital Preservation Foundation, Chandigarh

1938. pp. 121–95; F. Stelè, Ptujska Gora, Celje, 1948; J. Korošec, Predzgodovinska naselbina na Ptujskem gradu (A Prehistoric Settlement on the Castle Hill of Ptuj), Ljubljana, 1951; R. Bratanič, Nove najdbe iz Ptuja (New Findings from Ptuj), Arheol. vestnik, V, 1954, pp. 361–77; R. Bratanič, Prilog k topografiji Poetovija (Essay on the Topography of Poetovium), Antidoron M. Abramić (Vjesnik za arheologiju i historiju dalmatinsku, LIV, 1954–57), I, pp. 156–62; J. Korošec, The Castle Hill of Ptuj from Prehistoric Times to the Middle Ages, Archaeology, VIII, 1955, pp. 162–68; N. Kuret, "Koranti" na Ptujskem polju (The Courante on the Plain of Ptuj), Rad Kongresa folklorista Jugoslavije u Varaždinu (1957), Zagreb, 1959, pp. 63–70; I. Mikl, Poetovio, Altertum, IX, 1963, pp. 84–97; B. Saria, RE, s.v. Poetovio.

svetišče na Ptujskem gradu (The Old Slav Sanctuary on the Castle Hill of Ptuj),

Šempeter. In the village, near Celje, are the remains of an important Roman necropolis with rich funerary monuments, some of which are sumptuously decorated with reliefs representing mythological scenes; the best tombs are from the middle of the 2d century of our era. Special mention should be made of the small temple of Priscinianus and that of the Secundius family and of the funerary altar of Vindonius.

Bibliog. J. Klemenc, Das römische Gräberfeld in St. Peter im Sanntale, Archaeol. jugoslavica, II, 1956, pp. 57–66; J. Klemenc, Rimsko grobišče v Šempetru v Savinjski dolini (The Roman Necropolis of Šempeter in the Savinja Valley), Celjski zbornik, 1958, pp. 155–64; J. Klemenc, Ausgrabungen in St. Peter in Savinjska dolina (1925–55), Atti VII Cong. Int. di Archeol. Classica, III, Rome, 1961, pp. 153–57; J. Klemenc, Rimske izkopanine v Šempetru (Roman Excavations at Šempeter), Ljubljana, 1961.

Sevnica. The town stands on the banks of the Sava River. Close to the castle (17th cent.) is the so-called "Lutrovska Klet," a building probably meant for religious purposes, in the style of those built by northern Italian masons who worked in central Austria in the middle of the 16th century; the eastern portion is covered with fine frescoes (ca. 1580; perhaps of the Carinthian school), whose iconography seems to indicate that the building belonged to the Lutheran sect.

Bibliog. F. Stelè, Uloga reformacije v naši umetnostni zgodovini (The Reformation in Our Art History), Drugi Trubarjev zbornik, Ljubljana, 1951, pp. 119–50.

Škofja Loka. The town, north of Ljubljana, was founded in 973 by the Bavarian bishops of Freising. Above the town are the ruins of an 11th-century castle. In the town the Puštal Castle (early 16th cent.), which now houses a rich local museum, has a chapel with the gilt altars of Dražgoše (mid-17th cent.), among the best of their kind in Slovenia, and frescoes by Quaglio. The parish church is in late Gothic style; the nave, recalling that of a hall church, has stellar vaults richly decorated with figural reliefs.

Stična. This Cistercian abbey in Lower Carniola was founded in 1136. Surrounded by walls with defense towers from the period of the Turkish invasions, the monastery retains the original nucleus, with typical Cistercian architecture. The church, consecrated in 1154, with later baroque additions, preserves the original three-aisled basilica, with a transept and three apses; the presbytery is Gothic. The early Gothic cloister has, on the walls and vaults, important remains of paintings from the mid-12th century and the 14th. The eastern portion of the monastic buildings is from the 17th and 18th centuries; beside the original 12th-century doorway are remains of the exterior Romanesque chapel.

Bibliog. M. Zadnikar, Romanska Stična (Romanesque Stična), Ljubljana, 1957.

Svete Gore. The Sanctuary of Svete Gore, near Bizeljsko, comprises five churches, four of which are Gothic, although they preserve pre-Romanesque elements. The Church of Sv. Martin has an interesting portal surmounted by a window. The portal of the Church of Sv. Djordje has an inscription (never deciphered) in an alphabet similar to the runic; to the right of the portal is a roughly executed relief representing a figure seen from the front with its right hand lifted as if in prayer and a globe in its left; next to it are other illegible signs. These two churches are the most interesting examples of pre-Romanesque architecture in Slovenia.

Bibliog. A. Stegenšek, Svete Gore na Štajerskem (Svete Gore in Styria), Maribor, 1911; F. Stelè, Vorromanisches aus Slowenien, Beiträge zur älteren europäischen Kulturgeschichte: Festschrift für R. Egger, I, Klagenfurt, 1952, pp. 367–82.

Sveti Janez ob Bohinjskem Jezero. The town, on the shore of the Lake of Bohinj, has a church with a Romanesque nave and a late Gothic presbytery. Of note in the interior are the three wood altars from the first half of the 17th century; on the walls of the nave, the frescoes of the cycle depicting the legend of St. John, from the beginning of the 14th century; on the triumphal arch and the Gothic vaults of the nave, paintings from about 1520; in the presbytery, the Apostles, a St. George fighting the dragon, and paintings (ca. 1440) of Friulian influence; on the plinth, angels by Bartolomeo of Loka. The façade is painted with scenes from the legend of St. John and other subjects by Bartolomeo of Loka (ca. 1530).

Bibliog. F. Stelè, Monumenta artis slovenicae, I, Ljubljana, 1935.

Sveti Primož. On the slopes of the Kamniške Planine, north of Kamnik, the large Romanesque church, enlarged in the late Gothic style, has two aisles, a long presbytery, and richly decorated stellar vaults with projecting keystones. In the church, beneath a Gothic canopy, are the relics of SS. Primus and Felician. The frescoes of the nave (ca. 1520) are the best examples of late medieval Slovenian painting; on the north wall a procession of the Magi and a Mater Misericordiae; on the south wall a cycle of episodes from the life of the Virgin. Of particular interest are three 17th-century gilded altars. In the neighborhood stands the late Gothic Church of Sv. Petar with three gilded altars and a remarkable painted wood ceiling (second half of the 15th cent.).

Bibliog. F. Stelè, Monumenta artis slovenicae, I, Ljubljana, 1935.

Turnišče. The Romanesque parish church was enlarged in the last decades of the 14th century by Johannes (Giovanni) Aquila; the Gothic presbytery is vaulted and the nave has a wood ceiling. The walls are decorated with frescoes: in the first register of the presbytery, remains of painting from the second quarter of the 14th century; in the second register, the Apostles and other figures (1383); in the second register of the apse, a Maiestas Domini (1393) by Johannes Aquila; frescoes (1389) on the triumphal arch and on the side walls of the nave. The most prominent representations are the legend of King Lajos I of Hungary, the Last Judgment, the legend of St. Nicholas, the martyrdom of St. Peter, and the legend of St. Catherine.

Bibliog. F. Stelè, Monumenta artis slovenicae, I, Ljubljana, 1935.

Vrzdenec. The town, near Horjul, has a church with Romanesque nave and Gothic presbytery (15th cent.). Three cycles of wall paintings have been discovered: in the nave a cycle of the Childhood and the Passion of Christ, dating back to the first decades of the 14th century; formerly covering these paintings and now in the Narodna Galerija, Ljubljana, frescoes (ca. 1410) of the procession of the Magi and scenes from the Passion, of the Friulian school; and in the presbytery, the Apostles, male and female saints, and a Nativity, revealing the influence of Master E. S.

Bibliog. F. Stelè, Monumenta artis slovenicae, I, Ljubljana, 1935.

Žički Samostan. The former Carthusian monastery, near Konjice, was consecrated in 1194 and is now largely in ruins. Extant are the walls with defense towers (15th–16th cent.); the chapel with ossuary, dating back to the first half of the 15th century; and parts of the Gothic buildings. The church, with an interior cloister, is in ruins but still shows impressive remains of Romanesque and early Gothic architecture. Nearby is Špitalič, where the impressive church (ca. 1200) with two Romanesque portals is preserved.

Bibliog. A. Stegenšek, Konjiška dekanija (The Diaconate of Konjice), Maribor, 1909, pp. 180–205.

Grga Novak, with the assistance of France Stelè

Croatia (*Hrvatska*). Asseria. The site of this 1st-century Roman town is in the vicinity of modern Benkovac, near Podgrad. Excavations have revealed the surrounding walls, with four gates, one with a dedication (113) to Trajan; buildings around the forum; an aqueduct; and tombs, altars, and inscriptions.

Bibliog. H. Liebl and W. Wilberg, Ausgrabungen in Asseria, ÖJh, XI, 1908, Beiblatt, cols. 18–87; A. L. Frothingham, Roman Cities in Italy and Dalmatia, New York, London, 1910, pp. 266–83; G. Novak, EAA, s.v.

Biskupija. Biskupija was a *villa regalis* of the Croatian kings and probably the residence of the bishops of the Croatian court. Excavations have confirmed the existence of five basilicas and a large Paleo-Croatian necropolis (8th–11th cent.). The material found here (now preserved at Split) is very rich and important, especially a bas-relief of the Virgin in prayer (11th cent.), a copy of a Byzantine model, from the large three-aisled Church of Sv. Marija. At the source of the Cetina River is the Paleo-Croatian Church of Sv. Spas, surrounded by medieval sepulchral stones (*stećak*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

BIBLIOG. L. Karaman, Iz kolijekve hrvatske prošlosti (From the Cradle of the Croatian Past), Zagreb, 1930; K. Prijatelj, Skulpture s ljudskim likom iz starohrvatskog doba (Sculpture with the Human Figure from the Paleo-Croatian Period), Starohrvatska prosvjeta, 3d ser., VII, 1954, pp. 65–91; L. Petricioli, Pojava romaničke skulpture u Dalmaciji (Remains of Romanesque Sculpture in Dalmatia), Zagreb, 1960. See also the articles of S. Gunjača in Starohrvatska prosvjeta, 1949–56, passim.

Čakovec. The fortress of the Žrinski family has surrounding walls with polygonal bastions (1562; architects, G. Arconati and M. Secco) and a palace, now a museum. The Church of Sv. Nikola (1707–67) has baroque furnishings. In the Church of Sv. Elena, outside the town, are remains of late Gothic paintings (15th cent.).

Nearby, at Prelog, is the Church of Sv. Jakov (1758), with three wooden altars (1766) by Veit Königer (Kiniger) and J. Hermann. At Štrigovo, the Church of Sv. Jirolima (1738–49) has three apses and a dome; the frescoes (episodes from St. Jerome's life) are by Johann Ranger.

BIBLIOG. A. Horvat, Spomenici arhitekture i likovnih umjetnosti u Medjumurju (Monuments of Architecture and Art in the Medjumurje), Zagreb, 1956.

Cavtat (anc. Epidaurum; It. Ragusa Vecchia). The town, founded by the Greeks, was conquered in 47 B.C. by the Romans. There are remains of temples (including, outside of town, two mithraeums), villas, a theater, and an aqueduct. The Church of Sv. Marija contains a polyptych (1509) in archaic style, with saints on a golden background, by the painter Vincenzo Dobričević. Of note are the Račić Mausoleum (1920–22), by Ivan Meštrović, and the Bogišić Muzej, which houses the archaeological material found at Cavtat, a collection of prints, ancient costumes and necklaces, and works by Vlaho Bukovac.

BIBLIOG. L. Karaman, Pregled umjetnosti u Dalmaciji (Compendium of Art in Dalmatia), Zagreb, 1952; C. Fisković and L. Gašparović, Katalog izložbe Bogišićeve zbirke iz Cavtata (Catalogue of the Exposition of the Bogišić Collection of Cavtat), Zagreb, 1959; G. Novak, Stari Grci na Jadranu (Ancient Greeks on the Adriatic), Rad Jugoslavenske Akad. Znanosti i Umjetnosti, 322, 1961, pp. 145–221; C. Patsch, RE, s.v. Epidaurum; G. Novak, EAA, s.v. Epidaurum.

Čitluk (anc. Aequum). The town, located near Sinj, was the Colonia Claudia Aequum. There are remains of the Roman surrounding walls; the forum, with ruins of buildings perhaps belonging to the curia and the basilica; an amphitheater, outside the walls; and a necropolis, northeast of the town. The material found here — Roman inscriptions; fragments of statues, including a fine head of Herakles, the original of which is ascribed to the school of Lysippos, and a relief with Nike and a kneeling barbarian — is kept at the Minorite monastery at Sinj.

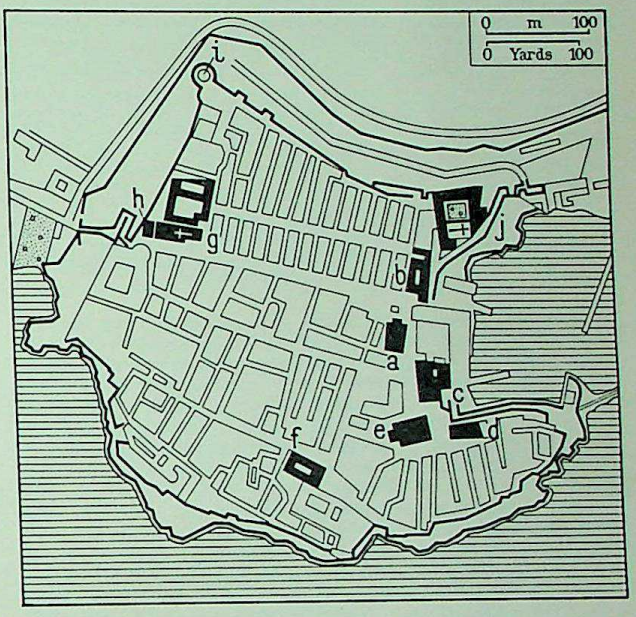
BIBLIOG. A. Mišura, Colonia Romana Aequum Claudium (Čitluk), Graz, Vienna, 1921; M. Abramić, Antike Kopien griechischer Skulpturen in Dalmatien, Beiträge zur älteren europäischen Kulturgeschichte: Festschrift für Rudolf Egger, I, Klagenfurt, 1952, pp. 303–26; G. Novak, EAA, s.v. Aequum.

Cres (It. Cherso). The island of Cres, which, with Lošinj, made up the Apsyrtides of antiquity, was inhabited in the Neolithic period and in the Bronze and Iron ages; little material is left from the Greek era. From the 2d century B.C. until about A.D. 500 the islands were under Roman domination. The small town of Cres preserves the Venetian walls and the Loggia (15th cent.); the Gothic-Renaissance Church of Sv. Marija; the Church of Sv. Franja (15th cent.), with paintings by Venetian artists; Gothic, Renaissance, baroque, and neoclassic palaces; and the town gate, the so-called "Gradska Vrata."

At Osor (Apsorus, Absortium), another town on the island of Cres, the network of Roman streets can still be roughly ascertained; there are remains of the circle of walls as well as of a late Roman building with a mosaic floor. A church from the 6th century has been discovered. The Renaissance Cathedral (15th cent.) is presumably by Georg Matejević (Juraj Dalmatinac, Giorgio Orsini, Giorgio da Sebenico). The local museum contains archaeological material.

BIBLIOG. Inventario degli oggetti d'arte d'Italia, V: Provincia di Pola, Rome, 1935; B. Fučić, Izvještaj o putu po otocima Cresu i Lošinju (Account of a Voyage to the Islands of Cres and Lošinj), Ljetopis Jugoslavenske Akad. Znanosti i Umjetnosti u Zagrebu, LV, 1946–48, pp. 31–76; V. Mirosavljević, Izvještaj o istraživanijma na otocima Lošinju i Cresu 1953 godine (Account of Researches on the Islands of Lošinj and Cres in 1953), Ljetopis Jugoslavenske Akad. Znanosti i Umjetnosti u Zagrebu, LX, 1955, pp. 205–14; V. Mirosavljević, Južno područje otoka Cresa u pretpovijesno doba (The Southern Part of Cres Island in Prehistory), Ljetopis Jugoslavenske Akad. Znanosti i Umjetnosti u Zagrebu, LXI, 1956, pp. 262–79; A. Mohorovičić, Apsyrtides-Apsoros, Carnuntina, 1956, pp. 95–99; A. Mohorovičić, Osor (Apsyrtides-Apsoros), B. Jugoslavenske Akad. Znanosti i Umjetnosti u Zagrebu, IV, 9–10, 1956, pp. 4–11.

Dubrovnik (anc. Rhagusium, Rhacusa; It. Ragusa). The town consists of two nuclei: one founded (7th cent. B.C.) by refugees from the Greek colony of Epidaurum (mod. Cavtat) on a small rocky island separated from the coast by a narrow canal (subsequently filled, now the town's main thoroughfare) and the other founded by the Slavs. During the period of Byzantine domination it belonged to the thema of Dalmatia, and later it became an autonomous republic. Although it was almost completely destroyed by an earthquake in 1667, the town preserves the surrounding walls (13th cent.; reinforced in the 15th, 16th, and 17th cent.), with towers and bastions: the Minčeta Tower, built to the designs of Michelozzo and completed by Georg Matejević (Juraj Dalmatinac, Giorgio Orsini, Giorgio da Sebenico); and the Fortress of Ravelin (1538), with baroque additions (1618) by M. Hranjac and M. Držic. The oldest remains are those



Dubrovnik, plan of the city within the 13th-century walls, restored up to the 17th century. (*a*) Church of Sv. Vlaho; (*b*) Sponza Palace; (*c*) Kneževe Dvor; (*d*) bishop's residence; (*e*) Cathedral; (*f*) Jesuit church; (*g*) Franciscan monastery; (*h*) Church of Sv. Spas; (*i*) Minčeta Tower; (*j*) Dominican monastery.

of a Paleo-Christian basilica and fragments of pre-Romanesque buildings. The Franciscan monastery (14th cent.) has a church with a late Gothic portal (1499) by Leonardo and Petar Petrović, a Romanesque-Gothic cloister (after 1317) designed by Mihoje Brajkov (Miho of Bar) with elegant six-light windows, and a bell tower (14th cent.); the Apoteka (1318), with valuable equipment and a rich library, is one of the oldest European pharmacies. The Dominican monastery (14th–15th cent.) has a splendid cloister by the sculptors Utišenović, Grubačević, and Vlatković; in the church are paintings by L. Dobričević (15th cent.; of the school of Titian), Mihajlo Hamzić (1513), Enguerrand Charonton (Charton, Quarton; 15th cent.), Giorgio Vasari, and Nikola Božidarević. The Cathedral (nave and two aisles, side chapels, dome at the crossing), which stands on the site of the Romanesque church (12th cent.), was rebuilt (1671–1713) in Roman baroque style to the designs of Andrea Ruffalini and P. Andreotti; it contains a Flemish triptych (15th cent.), paintings by Titian, Giuseppe Salviati (Porta), and others, and a rich treasury. The Church of Sv. Vlaho (1707–15), on the site of a 13th-century building, was designed by Marino Groppelli in Venetian baroque style. The Jesuit church (1699–1725) was designed by Pozzo in Roman baroque style; it contains frescoes by Gaetano García and a staircase by Padalacqua. The Church of Sv. Spas (1520), a Renaissance structure by Petar Andrijić, has Roman and Gothic elements (this mixture of styles is typical of the local Dalmatian architecture). The Knežev Dvor (1435–42), an elegant building designed by Onofrio de la Cava, has Renaissance additions (an arcaded portico adorned with statues) by Michelozzo. The Sponza Palace (1516–24), designed by Paskoj Miličević, mixes Gothic and Renaissance styles. Two Gothic fountains (1436–38) by Onofrio de la Cava, the Town Tower (1445) by Radoničić, Grubačević, and Utišenović, and the so-called "Roland's Column" (1418) decorate the town's squares. Other examples of civil architecture are the bishop's residence, with a small

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

picture gallery; the Kaboga, Pucić, Gozze-Gučetić, and Bunić palaces at Gruž, a suburb of Dubrovnik; and the Stjepović, Skočibuha, and Sorkočević palaces. In the surrounding area are many villas (15th cent. and later).

At Lokrum (It. Lacroma), a nearby island, there is a Neo-Gothic Hapsburg castle with park, built on the site of a Benedictine abbey founded in 1192.

Bibliog. G. Gelcich, Dello sviluppo civile di Ragusa considerato ne' suoi monumenti istorici ed artistici, Ragusa, 1884; L. Vojnović, Dubrovnik, Belgrade, 1907; A. Liepopili, Dubrovačka katedrala i njezine slike (Dubrovnik Cathedral and Its Paintings), Dubrovnik, 1930; M. Medini, Starine dubrovačke (Antiquities of Dubrovnik), Dubrovnik, 1935; N. Dobrović, Dubrovački dvorci (Dubrovnik's Palaces), Belgrade, 1946; C. Fisković, Naši graditelji i kipari XV i XVI st. u Dubrovniku (Our Architects and Sculptors of the 15th and 16th Cent. in Dubrovnik), Zagreb, 1947; B. Glavić, Knežev dvor u Dubrovniku (The Governor's Palace at Dubrovnik), Urbanizam i arhitektura, IV, 7–8, 1950, pp. 60–64; I. Zdravković, Dubrovački dvorci (Dubrovnik's Palaces), Belgrade, 1951; L. Karaman, Pregled umjetnosti u Dalmaciji (Compendium of Art in Dalmatia), Zagreb, 1952; L. Karaman, O staroj slikarskoj školi u Dubrovniku (The Old School of Painting at Dubrovnik), Anali H. Inst. Jugoslavenske Akad., II, 1953, pp. 101–23; C. Fisković, Fragments du style roman à Dubrovnik, Archaeol. jugoslavica, I, 1954, pp. 117–37; C. Fisković, Prvi poznati dubrovački graditelji (The First Architects Known at Dubrovnik), Dubrovnik, 1955; K. Pirjatelj, Umjetnost XVII i XVIII stoljeća u Dalmaciji (17th- and 18th-Century Art in Dalmatia), Zagreb, 1956; L. Beritić, Urbanistički razvitak Dubrovnika (The Urban Development of Dubrovnik), Zagreb, 1958; K. Prijatelj, Dokumenti za historiju dubrovačke barokne arhitekture (Documents for the History of Dubrovnik's Baroque Architecture), Tkalčićev Zbornik, II, Zagreb, 1958, pp. 117–56; I. Beritić, The City Walls of Dubrovnik, Dubrovnik, 1962; C. Fisković, Dubrovnik, Belgrade, 1964.

Hvar (anc. Pharos; It. Lesina). The island of Hvar has been inhabited since prehistoric times. Excavations in the Grapčeva Špilja have revealed objects — including painted neolithic pottery — dating from 3000 to the 6th century B.C. In 385–384 B.C. Paros founded the town of Pharos (mod. Starigrad), which was destroyed in 219 B.C. by the Romans and later rebuilt. Coins produced here (4th–2d cent. B.C.) are preserved in the museums at Zagreb, Osijek, and Split. At Starigrad there are remains of the walls (4th cent. B.C.) and a fine Roman mosaic.

After Byzantine and Croatian domination, the island was ruled by Venice from 1402 to 1797. The town of Hvar preserves bastioned walls (13th–14th cent.) and remarkable monuments revealing Italian influence. The Cathedral (16th cent.) contains a Madonna (13th cent.) of the school of Pisa and paintings of the Venetian school. The church of the Franciscan monastery (15th cent.) has works by Leandro Bassano and other Venetians, and there is a Last Supper by Matteo Ingoli in the refectory. Of interest are the remains of the Leporini Palace, in Venetian Gothic style; the Loggia (1515–17), by Michele Sanmicheli; and the clock tower (1466), also in Venetian Gothic style. Nearby are the so-called "Španjola" ("Spanish Fortress"; 1551) and the Kastel Sv. Nikolaja (Napoleonic era).

Another important center on the island is Vrboska, with the Church of Sv. Marija, a fine example of a 16th-century fortified church. Inside the Church of Sv. Lovre are paintings of the Venetian school of the 16th century (Paolo Veronese, Jacopo Bassano). Near Starigrad is the castle of Trvdalj.

Bibliog. J. Brunšmid, Inschriften und Münzen der griechischen Städte Dalmaziens, Vienna, 1898; G. Novak, Otok Hvar (Hvar Island), Belgrade, 1924; G. Novak, Nuovi ritrovamenti di ceramica dipinta nell'isola di Hvar (Lesina) nell'Adriatico, RScPr, V, 1950, pp. 57–66; L. Karaman, Pregled umjetnosti u Dalmaciji (Compendium of Art in Dalmatia), Zagreb, 1952; G. Novak, Prehistorijski Hvar: Grapčeva špilja (Prehistoric Hvar: The Grotto of Grabak), Zagreb, 1955; K. Prijatelj, Umjetnost XVII i XVIII stoljeća u Dalmaciji (17th- and 18th-Century Art in Dalmatia), Zagreb, 1956; G. Novak, Hvar kroz stoljeća (Hvar Through the Centuries), Zagreb, 1960; E. Polaschek, RE, s.v. Pharos, no. 2.

Ilok. The walls of the Citadel (15th cent.) are extant. The Franciscan monastery has a Gothic church (15th cent., restored in 1907) with an altarpiece (1862) depicting St. John of Capistrano by Joseph Kessler. Turkish buildings include a mausoleum and the baths (17th cent.). The Odescalchi Castle (ca. 1793) has a park.

In the environs are the Šarengrad (a brick castle) and a Gothic church with baroque furnishings. At Bapska there is a small Romanesque brick church.

Bibliog. G. Szabo, Spomenici prošlosti u Srijemu (Monuments of the Past in Sirmium), Savremenik, XI, 1916, pp. 43–50; A. Horvat, Ilok, B. Jugoslaveske Akad. Znanosti i Umjetnosti, VI, 1, 1958, pp. 15–21; A. Horvat, Die Skulpturen mit Flechtbandornament aus Syrmien, Südost-Forschungen, XVIII, 1959, pp. 249–64.

Karlovac. The nucleus of the town is a fortress, begun in 1579 during the Turkish invasions. The town, planned during the Renaissance, is in the shape of a six-pointed star and is surrounded by moats and bastions; it has regularly drawn streets and a central square. Of interest are the Franciscan monastery and church, the arsenal (1783), and the Serbian Orthodox church (1784–86), built by J. Štiler.

Nearby are the medieval castles of Ozalj, Dubovac, and Ribnik.

Bibliog. R. Strohal, Grad Karlovac (The City of Karlovac), Karlovac, 1906; A. Horvat, Karlovac spomenik kulture (Karlovac Monument of Culture) (Čovjek i prostor, 4), Zagreb, 1954.

Korčula (anc. Corcyra Nigra; It. Curzola). The island of Korčula has been inhabited since prehistoric times. Between 394 and 390 B.C. (or, according to others, in the 6th or 5th cent. B.C.) the Cnidians founded a colony here, probably in the western area. At the end of the 4th century B.C. nearby Issa (mod. Vis) also sent a colony, which apparently settled at Lumbarda. In 228 B.C. the Romans rid the island of pirates; in Augustan times the people attempted to rebel and were punished by the Romans. In various parts of the island traces of Greek and Roman settlements have been discovered. Near Lumbarda a necropolis (4th cent. B.C.–1st or 2d cent. of our era) and a large building in *opus reticulatum* have been found.

The town of Korčula is predominantly Venetian in character. The Cathedral (Sv. Marko) is in Gothic style, built by local masters on the site of a Romanesque church, to the designs of G. Correro of Trani (1441) and continued in late Gothic style by M. Andrijić, who designed the remarkable ciborium (ca. 1490). Also worthy of mention are the fortress from the Napoleonic era, the Kneževa Palača, and the Loggia.

The Franciscan church on the nearby island of Otok has a noteworthy late Gothic cloister (15th cent.).

Bibliog. N. Trojanis, Sui monumenti di storia e di arte esistenti nella città ed isola di Curzola, Trieste, 1911; W. Gobbin, Korčula: Ein Beispiel dalmatinischen Städtebaus, Berlin, 1930; L. Karaman, Šeunjom kroz Korčulu i njene spomenike (Itinerary through Korčula and Its Monuments), Zagreb, 1932; V. Foretić, Otok Korčula do 1420 (The Island of Korčula to 1420), Zagreb, 1940; P. Lisičar, Crna Korčula i kolonije antičkih Grka na Jadranu (Corcyra Nigra and the Ancient Greek Colonies on the Adriatic), Skopje, 1951; M. Gijvoje, Prilog topografiji arheoloških nalaza na otoku Korčuli (Contribution to the Topography of Archaeological Discoveries on the Island of Korčula), Vjesnik za arheol. i h. dalmatinsku, LIV, 1952, pp. 204–06; G. Novak, Arheološka istraživanja na otocima Lastovu i Korčuli u 1953 godini (Archaeological Researches on the Islands of Lastov and Korčula in 1953), Ljetopis Jugoslavenske Akad. Znanosti i Umjetnosti, LX, 1955, pp. 227–30; FA, VI, 1953, no. 6005.

Krapina. A well-preserved portion of the medieval castle, which existed in 1222, houses a museum. In the Franciscan monastery is the Church of Sv. Katarina (1644), with baroque furnishings.

Nearby is Trški Vrh, with the Church of Sv. Marija (1750–52), built by J. Javornik; it contains frescoes (1777) by A. Lerchinger and rich baroque fittings. The castle (15th–16th cent.) was formerly the property of the Ratkay-Veliki Tabor family. The castles of Miljana and Gornja Stubica have 18th-century frescoes.

Bibliog. G. Szabo, Spomenici kotara Krapine i Zlatar (Monuments of the Krapina and Zlatar Districts), Vjesnik Hrvatskoga Arheol. Društva, XIII, 1913–14, pp. 103–204; A. Cevc, Anton Lerchinger, Zbornik za umetnostno zgodovino, N.S., V–VI, 1959, pp. 477–88.

Križevci. In the Gothic Church of Sv. Križ there is a marble altar (ca. 1755) by F. Robba. The Church of Sv. Marija Koruška has an apse of trilobate plan and 18th-century frescoes. In the Cathedral are wall paintings and iconostases (early 20th cent.) by the painters Celestin Medović, Ivan Tišov, and B. Čikoš. The bishop's residence was rebuilt in neoclassic style by B. Felbinger.

In the vicinity are the castles of Veliki and Mali Kalnik (13th cent., in ruins), Gornja Rijeka, and Tkalec (17th cent.). Noteworthy are the large two-aisled Gothic Church of Sv. Marija at Glogovnica; the neoclassic church at Pogančec; and the Gothic church dedicated to St. Brictius at Kalnik, with Gothic frescoes (after 1500) by a local artist.

Bibliog. G. Szabo, Sredovječni gradovi u Hrvatskoj i Slavoniji (Medieval Castles in Croatia and Slavonia), Zagreb, 1920; A. Deanović, Otkriće kasnogotičkih zidnih slikarija u kalničkom prezbiteriju (Discovery of the Late Gothic Frescoes of the Presbytery of the Kalnik Church), B. Jugoslavenske Akad. Znanosti i Umjetnosti, III, 7, 1955, pp. 6–13; V. Sinobad, Posljednje djelo F. Robbe: Oltar sv. Kriza u Zagrebu (The Last Work of F. Robba: The Altar of the Holy Cross at Zagreb), Peristil, II, 1957, pp. 193–98; A. Horvat, O baroknom klasicizmu u Pogančecu (On the Baroque Classicism at Pogančec), B. Jugoslavenske Akad. Znanosti i Umjetnosti, VIII, 1960, pp. 114–25; A. Horvat, Prilozi povijesno-umjetničkim problemima u nekoć templarskoj Glogovnici (Essays on the Art-Historical Problem of the Former Templars' Foundation at Glogovnica), Peristil, IV, 1962, pp. 29–45.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Krk (anc. Curicta, Curicum; It. Veglia). On the island of Krk there were two ancient towns, Curicta (or Curicum) and Fulfinium. At Krk, the main center of the island, the Romanesque Cathedral (ca. 1200) contains the silver altarpiece (1477) of Duke Ivan Krčki. Of interest are the Episcopal Palace, the Kastel Frankopanski, and the Franciscan monastery, with a Gothic church. Nearby are the Paleo-Croatian churches of Sv. Grisogon, on a trilobate plan, and Sv. Donat (8th cent.).

In the town of Baška, founded in the 14th century, there is a church with a painting of the Virgin and saints by a local artist. Nearby, in the hamlet of Jurandvor, is the Church of Sv. Lucija, where the stone (ca. 1100; now in Zagreb, Povijesni Muzej Hrvatske Jugoslavenske Akademije Znanosti i Umjetnosti) with one of the most important inscriptions of the Croatian language and the Glagolitic script was found.

At Omišalj (It. Castelmuschio) the Romanesque Church of Sv. Marija has tracery decorations, Glagolitic inscriptions, and an altar by Jacobello del Fiore.

In the nearby isle of Košljun (It. Castellione) the Franciscan monastery contains textiles and paintings (16th–18th cent.).

Bibliog. L. Karaman, Iz kolijevke hrvatske prošlosti (From the Cradle of the Croatian Past), Zagreb, 1930; D. Westphal, Malo poznata slikarska djela XIV do XVIII st. u Dalmaciji (Works of Little-known Painters from the 14th to the 18th Cent. in Dalmatia), Rad Jugoslaveske Akad. Znanosti i Umjetnosti, 258, 1937, pp. 15–60; C. Patsch, RE, s.v. Curictae.

Lepoglava. In the town are the Pauline monastery (ca. 1400) and the Church of Sv. Marija, in Gothic and baroque styles, decorated with stuccoes (1706) by Antonio Quadrio and paintings (1742) by J. Ranger.

In the vicinity are churches at Gorica (1731) and Purga (1750), with frescoes by J. Ranger. There are castles with parks at Klenovnik and Maruševec (17th cent.) and a Neo-Gothic castle at Trakošćan (ca. 1855).

Bibliog. G. Szabo, Spomenici kotara Ivanec (Monuments of the Ivanec District), Vjesnik Hrvatskoga Arheol. Drustva, XIV, 1915–19, pp. 22–97.

Mljet (anc. Melita; It. Meleda). The island of Mljet was conquered by the Romans; it rebelled during the Octavian period, but it was again occupied in 35–33 B.C. On a little island situated in the middle of Veliko Jezero stands a Benedictine abbey (1511) erected by Desa, King of Zahumlje, enlarged in the 16th century and fortified in the 17th; the church (recently restored) is built on a central plan. At Polače there are ruins of a Roman villa (3d cent. B.C.) and remains of a Paleo-Christian basilica.

Bibliog. B. Gušić, Mljet, Zagreb, 1931; L. Karaman, O rimskom zaseoku u Polačama na otoku Mljetu (A Roman Country House at Polače on the Island of Mljet), Antidoron M. Abramić, I, 1954–57, pp. 102–07; B. Gušić and C. Fisković, Otok Mljet (The Island of Mljet), Zagreb, 1958; E. Dyggve, Palača na otoku Mljetu sa novog gledišta (The Palace of the Island of Mljet Seen under a New Aspect), Zbornik sa umetnostno zgodovino, N.S., V–VI, 1959, pp. 79–90; A. Mohorovičić, Prilog poznavanju razvoja arhitekture na otoku Mljetu (Contribution to the Knowledge of the Development of Architecture on the Island of Mljet), Beritićev Zbornik, Dubrovnik, 1960, pp. 25–32; Fluss, RE, s.s. Melite.

Narona. Near present-day Vid, Narona stood almost at the mouth of the Neretva River. From the 5th century B.C. it was an Illyrian-Greek trading station; after 167 B.C. it was a Roman town; from 34 to 33 B.C. it was called Colonia Julia Narona. There are remains of the circle of walls, as well as of towers (dating, according to the inscriptions, from the late Republican period), a forum, baths, a theater, an aqueduct, and private houses. Many altars, inscriptions attesting the existence of numerous temples and sanctuaries, fragments of columns, capitals, tiles, coins, clay vases, jewels, and gems have been found (now in Split, Arkeološki Muzej). Ostrogothic helmets found here are now in Vienna.

Bibliog. C. Patsch, Zur Geschichte und Topographie von Narona (Schriften der Balkankommission, Ant. Abteilung, V), Vienna, 1907; C. Patsch, Kleinere Untersuchungen in und um Narona, Jhb. für Altertumskunde, II, 1908, pp. 87–117; C. Patsch, Aus Narona, ÖJh, XV, 1912, sup., cols. 75–82; G. Novak, Topografija i etnografija rimske provincije Dalmacije (Topography and Ethnography of the Roman Province of Dalmatia), B. di archeol. e storia dalmata, XXXVIII sup., 1915; I. Marović, Novi i neobjaljevi nalazi iz Narone (New and Unpublished Discoveries from Narona), Vjesnik za arheologiju i historiju dalmatinsku, LIV, 1952, pp. 153–73; M. Abramić, Gli Ostrogoti nell'antica Dalmazia, Settimane di s. del Centro it. di s. sull'alto Medioevo, Spoleto, 1956, pp. 37–41; M. Abramić, Die christliche Archäologie in Jugoslavien in den letzten zwanzig Jahren, Actes Ve Cong. int. d'archéol. chrétienne, Aix-en-Provence, 1957, pp. 177–83.

Nin (anc. Aenona; It. Nona). Located northeast of Zadar, Aenona was a Liburnian colony during the Hallstatt period, and in the 1st century of our era it became a Roman *municipium*. The medieval walls were partly built on the Roman ones. Remains of a fine temple with three cellae, probably consecrated to Jupiter, Rome, and Augustus, have been found, as well as ruins of what were probably the baths; of the eight Roman statues discovered in 1777, four are now in the Arheološki Muzej, Zadar, while the one of Isis is now in the Arheološki Muzej, Zagreb. In the neighborhood of Nin numerous Roman tombs were found, containing limestone urns and many funeral gifts, now in the Zadar museum.

Nin was the first Croatian political center after its conversion to Christianity. The surrounding walls, with two gates from the period of Venetian domination, are well preserved. The Church of Sv. Križ (11th cent.), on a cruciform plan with four semicircular apses at the crossing, has inscriptions of great documentary interest. Near the town is the small Church of Sv. Nikolaja, on a trilobate plan, containing many objects from the Carolingian and Paleo-Croatian eras, including the reliquary of St. Asel. The regional costume of the Ravni Kotari area is noteworthy; examples of it are exhibited in the museums of Zagreb, Split, and Vienna.

Bibliog. L. Jelić, Spomenici grada Nina (Monuments of the City of Nin), Vjesnik hrvatskoga arheol. društva, N.S., IV, 1899–1900, pp. 157–71. V, 1901, pp. 184–92; G. Bersa, Le lucerne fittili di Nona, B. di archeol. e storia dalmata, XXV–XXX, 1902–07, passim; N. Bruck-Auffenberg, Dalmatien und seine Volkskunst, Vienna, 1911; L. Jelić, Dvorska kapela Sv. Križa u Ninu (The Aulic Chapel of the Holy Cross at Nin), Zagreb, 1911; W. Gerber, Altchristlichen Kultbauten Istriens und Dalmaziens, Dresden, 1912; L. Karaman, Iz kolijekve hrvatske prošlosti (From the Cradle of the Croatian Past), Zagreb, 1930; L'architettura della Dalmazia, Rome, 1943; M. Cagliano de Azevedo, Aenona e il suo Capitolium, RendPontAcc, XXII, 1946–47, pp. 193–226; G. Novak, EAA, s.v. Aenona.

Osijek (anc. Mursa; It. Mursia). The city, inhabited in the Bronze Age, was an Illyrian center that later, under Hadrian, became the Colonia Aelia Mursa. Recent excavations have revealed remains of the circle of walls, Roman houses, and several altars (dedicated to Jupiter, Hercules, Sylvanus, etc.), as well as many statues of Hercules. The city first appeared under the name of Osijek in a document from 1196. It was conquered by the Turks in 1525 and became a bulwark against the Christians until 1690. During the 18th century, under Austrian domination, baroque art flourished. The city is divided into seven quarters: Retfala, the former Hungarian Calvinist city, with the Pejačević Castle (1796–1801); the Upper Town; Tvrdja, planned in the 18th century; the Lower Town, along the right bank of the Drava; and Novigrad, Tvrdjavica, and Podravlie. There are remains of the Crown fortress (1721) and of the Water Gate (18th cent.). The Church of Sv. Arhanjeli (18th cent.), the Capuchin church, and the Neo-Gothic Cathedral (1894; with frescoes by Franjo Rački) are noteworthy. The Muzej Slavonije has archaeological and ethnographic sections; the Galerija Slika exhibits Austrian, Slavic, Croatian, and Serbian paintings.

In the vicinity are ruins of the medieval castles of Kolodjvar (13th cent.) and Erdut (15th cent.); the castles of Valpovo (15th–19th cent.) and Belje (18th cent.) have parks.

Bibliog. J. Brunšmid, Colonia Aelia Mursa, Vjesnik hrvatskoga arheol. društva, N.S., IV, 1899–1900, pp. 21–42; V. Hoffiller, Novi rimski kameni spomenici u Osijeku (New Roman Stone Monuments at Osijek), Vjesnik hrvatskoga arheol. društva, XII, 1912, pp. 1–7; G. Szabo, Sredovječni gradovi u Hrvatskoj i Slavoniji (Medieval Castles of Croatia and Slavonia), Zagreb, 1920; B. Misita-Katušić, Kratak pregled arhitekture Osijeka kroz tri stoljeća (Short Essay on the Architecture of Osijek through Three Centuries), Osječki zbornik, V, 1956, pp. 171–85; D. Pinterović, Iskapanja i arheološki nalazi na terenu Osijeka i njegove okolice od listopada 1954 do kraja listopada 1956 god (Excavations and Archaeological Discoveries at Osijek and Environs from October, 1954, to the End of October, 1956), Osječki zbornik, V, 1956, pp. 236–40; D. Pinterović, Prilog topografiji Murse (Essay on the Topography of Mursa), Osječki zbornik, V, 1956, pp. 55–94; E. Spajić, Nazalište mladjeg željeznog doba s terena Osijeka (Discoveries of the Later Iron Age at Osijek), Osječki zbornik, V, 1956, pp. 47–54. See generally Osječki zbornik, 1942 ff.

Poreč (anc. Parentium; It. Parenzo). The Illyrian town (2d half of 1st cent. B.C.) became the Colonia Julia Parentium; it was a bishopric in the Middle Ages, and one of Istria's most important centers. In the 12th century it was conquered by Venice. The network of streets of the present city follows the Roman plan, with the *decumanus maximus*, *cardo maximus*, and the minor parallel streets. In Trg Marafor there are traces of the forum, with part of the antique paving; nearby are remains of a large temple (1st cent. of our era) and columns from a temple or portico. In 544 Bishop Euphrasius built the Basilica, on the site of previous Paleo-Christian buildings — namely, a rectangular oratory (4th cent.) and two 5th-century basilicas (the apse of one and the geometrically divided mosaic floors of the other are preserved). The Basilica, from the early Byzantine period, has a quadriporticus and is divided into three aisles by col-

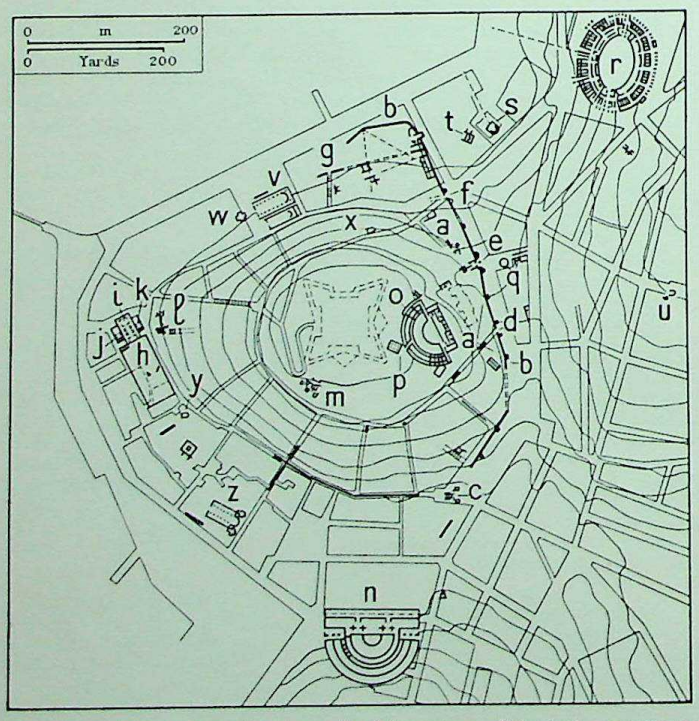
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

umns with noteworthy capitals (VIII, PL. 84; XIII, PL. 347; etc.); the vault of the apse and on the triumphal arch are preserved the original mosaics (III, PL. 309; VII, PL. 266), rare examples with figures from the preiconoclast Byzantine period; the ciborium (13th cent.) has 5th-century capitals; in the central aisle is a polyptych by Vivarini. Across from the Basilica there is a hexagonal baptistery (perhaps 5th cent.). The *consignatorium* (now the bishop's residence), from the time of Euphrasius, contains the two-storied Chapel of Sv. Andreja. The city, which has many small palaces and Romanesque houses as well as Gothic and Renaissance buildings of Venetian influence, is still surrounded by walls with gates and towers (a pentagonal tower from 1447 and the Tower of the Serenissima). There is a lapidary museum as well as the Zavičajni Muzej, with archaeological finds and a rich collection of Istrian ethnographic material.

BIBLIOG. B. Vergottini, Breve saggio della storia antica e moderna della città di Parenzo, Venice, 1796; E. von Eitelberger, Die Domkirche zu Parenzo in Istrien (Mittelalter. Kunstdenkmäler des öst. Kaiserstaates, V, 1), Vienna, 1858; L. Lohde, Der Dom von Parenzo, Berlin, 1859; V. Joppi, Nuovi documenti sull'Istria, Udine, 1878; A. Neumann, Der Dom von Parenz, Vienna, 1902; R. M. Cossar, Parentium, Poreč, 1926; P. Toesca, Storia dell'arte italiana, I, Turin, 1927; A. Degrassi, Inscriptiones Italiae, X, 2: Parentium, Rome, 1935; B. Molajoli, La Basilica Eufrasiana di Parenzo, Poreč, 1940; B. Molajoli, Le costruzioni preeufrasiane di Parenzo, Le arti, II, 1940, pp. 92–104; A. Degrassi, Parenzo municipio romano, Athenaeum, N.S., XXIV, 1946, pp. 44–49; M. Mirabella Roberti, La posizione dell'altare nelle più antiche basiliche di Aquileia e di Parenzo, RACr, XXVI, 1950, pp. 181–94; M. Prelog, Poreč: Grad i spomenici (Poreč: City and Monuments), Belgrade, 1957; P. L. Zovatto, Architetture paleocristiane della Venezia in epigrafi commemorative, Pordenone, 1958; G. Bovini, Il complesso delle basiliche paleocristiane di Parenzo, Corso di cultura sull'arte ravennate e bizantina, VII, 2, 1960, pp. 13–39.

Pula (anc. Pola; Pulj). According to legend, the town was founded by Colchians; during the Iron Age it was an Illyrian stronghold; in 177 B.C. it was occupied by the Romans, and under Augustus it became the Colonia Pietas Julia Pola. The necropolis on the eastern slopes of the hill dates from the Iron Age. From the Roman period are the walls (5th cent. of our era), built on top of those from the Augustan period; the Porta Aurea (Arch of the Sergi), perhaps Augustan; the Porta Herculea (ca. 40 B.C.); the Porta Gemina, from the period of the Antonines; the forum, bounded on the north by the Capitol, between the Temple of Augustus and the so-called "Temple of Diana" (now part of the town hall); a hall for the cult of the emperor and propylaeum; houses with fine mosaic floors; a theater at Mount Zaro; the amphitheater, begun under Augustus and completed under the Flavians; cisterns; a nymphaeum; baths(?) below the Baptistery of the Cathedral; mausoleums of varying shape (exedra, pyramids, etc.), the most remarkable being an octagonal one from the 1st century of our era; and, at Prato Grande, the necropolis *sub divo* of large stone arches, mentioned by Dante (*Inferno*, IX, 113). In the Middle Ages the town escaped devastation by the barbarians, and in 1148 was conquered by the Venetians. After being sacked in the 14th century by the Genoese, it was rebuilt with aid from Venice, but it did not reach its former splendor. Of the famous Abbey of S. Maria del Canneto, founded in 554 by Maximianus, who later became bishop of Ravenna, there is only one funeral chapel, with remains of mosaics in the vault of the apse, similar to those in the so-called "Mausoleum of Galla Placidia" at Ravenna. The Cathedral retains from the original church (6th cent.) some one-light windows in the façade, fragments of the mosaic floor, remains of the plutei, and perhaps the apse. Noteworthy are the Franciscan church (16th cent.), with remains of Paleo-Christian plutei; the castle (1632); and the town hall, built in Gothic style with Roman materials but altered during the Renaissance. The Arheološki Musej contains prehistoric, classical, and Paleo-Christian collections.

In the neighborhood, at Peroj, is the Church of Sv. Fosca, with frescoes (1150–1200). In the nearby Brioni Islands (Pullaria, Brijuni) there are remains of villas, baths, Roman temples, and a Paleo-Christian basilica.



Pula, plan of the ancient city up to the 6th century. Principal monuments: (*a*) Pre-Roman necropolis; (*b*) walls; (*c*) Porta Aurea (Arch of the Sergi); (*d*) Porta Herculea; (*e*) Porta Gemina; (*f*) Gate of St. John; (*g*) gate facing the sea; (*h*) forum; (*i*) Capitol; (*j*) Temple of Augustus; (*k*) so-called "Temple of Diana"; (*l*) hall for the cult of the emperor and propylaeum; (*m*) *domus* under the castle; (*n*) theater at Mount Zaro; (*o*) small theater; (*p*) cistern; (*q*) octagonal mausoleum; (*r*) amphitheater; (*s*) nymphaeum; (*t*) Basilica of St. Theodore; (*u*) Basilica of St. Martin; (*v*) Cathedral; (*w*) Baptistery; (*x*) Basilica of St. Nicholas of the Greeks; (*y*) St. Nicholas in Via Sergia (destroyed after the war); (*z*) S. Maria del Canneto (*from RE, s.v., with additions*).

BIBLIOG. P. Kandler, Notizie storiche di Pola, Parenzo, 1876; A. Gnirs, Führer durch Pola, Vienna, 1915; G. Calza, Pola, Rome, 1920; A. Gnirs, Istria praeromana, Karlsbad, 1925; E. Loewy, Die Anfänge des Triumphbogens (JhbKhSammlWien, Sonderheft, XI), Vienna, 1928; Il R. Museo dell'Istria in Pola, Pula, 1930; A. Degrassi, Istria archeologica: Pola, Aevum, VII, 1933, pp. 305–11; C. De Franceschi, Il ninfeo e l'acquedotto di Pola romana, Atti e mem. della Soc. istriana di archeol. e storia patria, XLVI, 1934, pp. 337–50; M. Mirabella Roberti, L'arena di Pola, Pula, 1939; A. Degrassi, La data della fondazione della colonia romana di Pola, Atti Ist. di sc., lettere e arti, CII, 2, 1942–43, pp. 667–78; M. Mirabella Roberti, Indagini sul Duomo di Pola, RACr, XXII, 1946–47, pp. 209–29; B. Forlati Tamaro, Inscriptiones Italiae, X, 1: Pola et Nesactium, Rome, 1947; B. Baćić and B. Marušić, ed., Monuments of Culture and History in Istria, I, Pula, 1957; S. Mlakar, Anfiteatar u Puli (The Amphitheater of Pula), Pula, 1957 (2d ed., 1961); S. Mlakar, Ancient Pula, Pula, 1958; E. Polaschek, RE, s.v. Pola. See also the Atti e mem. della Soc. istriana di archeol. e storia patria, passim.

Rab (Arba, Arbe). Rab, the main town of the island of the same name, was once an Illyrian center, then a Roman colony, and subsequently Byzantine. The town has a Venetian character, with picturesque narrow streets and patrician houses; it is characterized by four medieval bell towers. The Cathedral of Sv. Marija (11th–12th cent.; altered several times) has a portal (1514) with a Pietà by P. Trogiranin, a main-altar ciborium with tracery (11th cent.), an enameled cross (12th cent.), a Pantokrator (10th cent.), stuccoes (1798), and carved wooden stalls (1445); the Romanesque bell tower (12th–13th cent.) has bi-, tri-, and quadripartite windows. The Church of Sv. Andreja (11th cent.) has a bell tower (1181) and a Madonna (1485) by Antonio Vivarini. The Church of Sv. Justine is from the 16th century. In the nearby Franciscan convent there is a collection of ancient homespun cloth, a Byzantine Virgin (ca. 1300), and a polyptych by Vivarini (1458).

Near the valley called Supetarska Draga is the Romanesque Church of Sv. Petar (ca. 1060), with three aisles.

BIBLIOG. D. Frey, Der Dom von Arbe, Allgemeine Bauzeitung, LXXVII, 1912, pp. 88–95; W. Schleyer, Arbe: Stadt und Insel, Z. für Architektur und Ingenieurwesen, LIX, 1913, pp. 213–38, 370–416, LX, 1914, pp. 203–18, 293–316; G. Praga, Scuole e maestri in Arbe nel Medioevo e nel Rinascimento, San Marino, 1924; C. Greim, Die Insel Arbe (Rab), Mitt. Geog. Gesellschaft in München, XIX, 1926, pp. 143–84; D. Westphal, Malo poznata slikarska djela XIV do XVIII st. u Dalmaciji (Works of Little Known Painters from the 14th to the 18th Cent. in Dalmatia), Rad Jugoslavenska Akad. Znanosti i Umjetnosti, 258, 1937, pp. 15–60; L. Karaman, Pregled umjetnosti u Dalmaciji (Compendium of Art in Dalmatia), Zagreb, 1952; F. V. Brusić, Rab, Zagreb, n.d.

Rijeka (It. Fiume). In the 1st century of our era the Illyrian-Celtic town of Tarsatica became a Roman *municipium*. An arch from the late imperial period and remains of the town walls (4th cent.) are preserved. The old city was encircled by walls until 1700. Monuments: the Church of Sv. Jirolima (14th cent., restored in baroque style in the 18th cent.) with remains of late Gothic frescoes; the Palača Bivšeg Municipija, formerly an Augustinian monastery (14th cent., rebuilt in the 18th cent.); the baroque Church of Sv. Vida (1638–42); the Serbian Orthodox church (1786), in baroque style; the parish church (14th cent., rebuilt in baroque style in the 18th cent.; the Gradski Toranj (Town Tower, started in the 15th cent. and completed in baroque style in the 18th cent.); and the Gradska

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Palača (17th cent.). The Vladimir Švalba Cultural Center, in the former palace of the governor, houses an important collection of paintings and sculpture (19th–20th cent.). On the hill of Trsat are the Frankopanski Kastel (12th cent., rebuilt in the 19th cent.) and the Franciscan Church of Sv. Marija (15th–19th cent.).

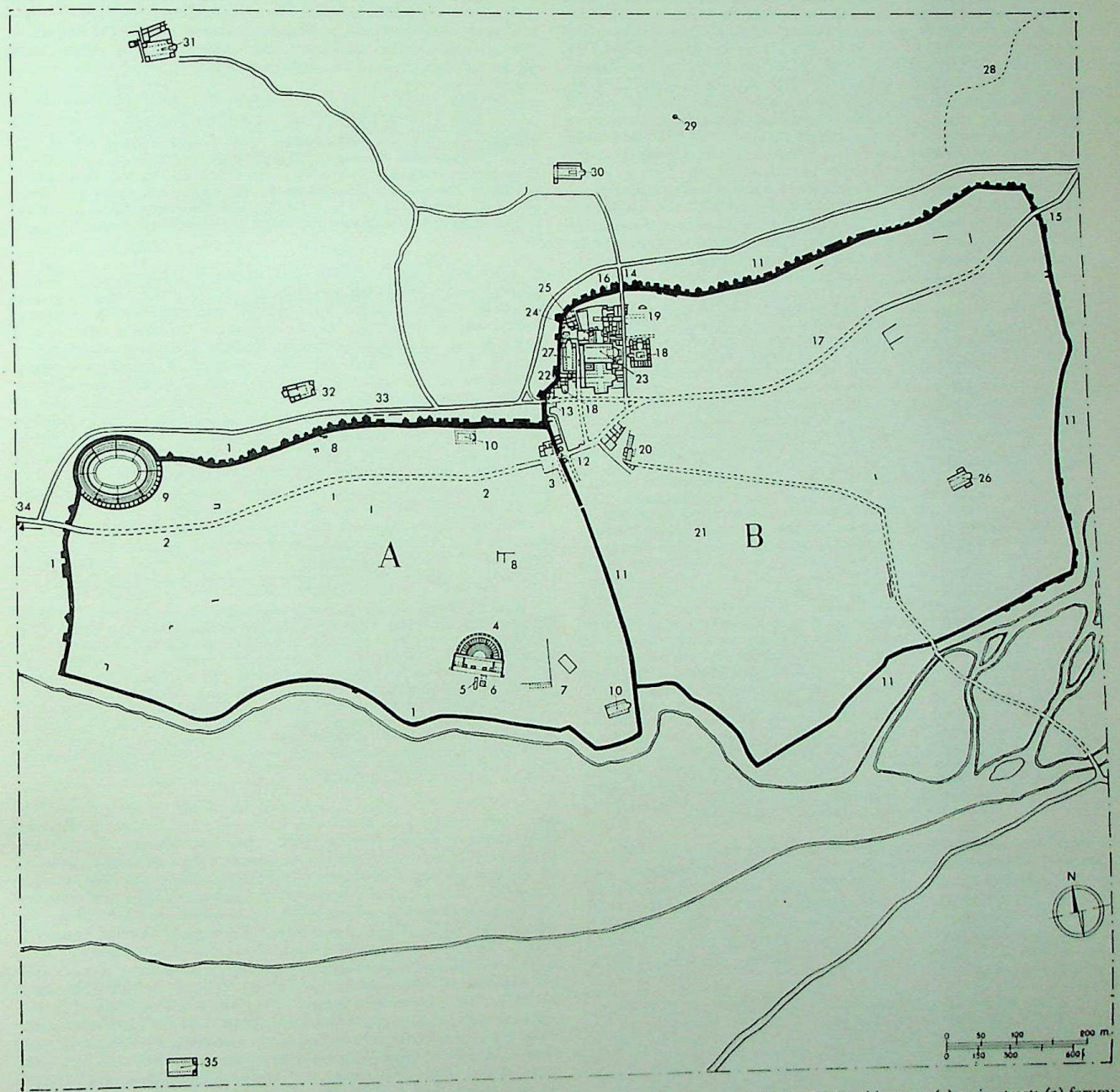
Bibliog. G. Kobler, Memorie per la storia della liburnica città di Fiume, 3 vols., Fiume, 1896; G. Depoli, Guida di Fiume e dei suoi monti, Fiume, 1913; G. Dainelli, Fiume e la Dalmazia, Turin, 1925; G. Depoli, La provincia del Carnaro, Fiume, 1928; L. M. Torcoletti, La chiesa e il convento degli Agostiniani di Fiume, Fiume, 1944; V. Ekl, Kasnogotička fresko slikarija u crkvi Sv. Jeronima u Rijeci (A Late Gothic Fresco in the Church of St. Jerome in Rijeka), B. Jugoslavenske Akad. Znanosti i Umjetnosti, III, 1955, pp. 41–43; B. Forlati Tamaro, EAA, s.v. Fiume.

Rovinj (anc. Rovignium; It. Rovigno). The town was inhabited before Roman times. The Cathedral, on the site of a previous church dating from before 1000, has a bell tower (1654–77) modeled on that of St. Mark's in Venice. The small Church of the Holy Trinity (13th cent.), on a polygonal plan, and the baroque Arch of the Balbi, near the Clock Tower, are noteworthy.

Nearby, on the Limski Canal, is the Church of Sv. Mihajl, with frescoes (1028–40) from the Ottonian period.

Bibliog. B. Benussi, Storia documentata di Rovigno, Trieste, 1888; G. Caprin, Istria nobilissima, 2 vols., Trieste, 1907; H. Folnesicz and L. Planiscig, Bau- und Kunstdenkmäler des Küstenlandes, Vienna, 1916; A. Deanović, Ranoromaničke freske u opatiji Sv. Mihovila nad Limskom Dragom (Early Romanesque Frescoes in the Abbey of Sv. Mihajl above the Creek of Lim), B. Jugoslavenske Akad. Znanosti i Umjetnosti, IV, 9-10, 1956, pp. 12-20.

Salona (mod. Solin). In the late 2d or early 1st century B.C. the inhabitants of Issa set up a colony at Salona, an Illyrian town;



Salona, archaeological plan. Principal monuments (divided into the earlier town, A, and the later town, B): (1) Walls with gates; (2) main street; (3) forum; (4) theater (graphically reconstructed); (5) portico; (6) temple; (7) horreum(?); (8) baths; (9) amphitheater (graphically reconstructed); (10) Christian basilicas; (11) walls; (12) Porta Caesarea; (13) Porta Suburbia II; (14) Porta Capraria; (15) Porta Andetria; (16) aqueduct; (17) main street; (18) baths; (19) exedra; (20) Roman bridge; (21) possible area of the *praetorium*; (22) cross-plan basilica; (23) town basilica; (24) baptistery; (25) oratory; (26) eastern basilica; (27) Paleo-Christian basilica; (28) aqueduct; (29) cistern; (30) Christian cemetery with basilica; (31) Marusinac, with basilica and cemetery; (32) Christian cemetery with basilica; (33) sarcophagi; (34) to the necropolis in Horto Metrodori; (35) cemetery with basilica (*from Dyggve, Bröndsted, and Weibbach, 1928–33*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

in 34–33 B.C. Octavian promoted it to the Colonia Martia Julia Salona, which was the capital of the province of Dalmatia until the town was destroyed in A.D. 614. It is divided into two portions, surrounded by walls, the earlier one to the west, the later one to the east. In the western area excavations have brought to light the forum, a temple, theater, amphitheater, and the baths; in the eastern part, the baths, an exedra, and a torcular. The material found here (marble statues, bronze figures, Latin and Greek insciptions, etc.) is kept in the Arheološki Muzej, Split. Remains of Paleo-Christian Salona are centered in the northern section: a private building that was transformed into the Oratory of St. Domnius under Diocletian; a basilica from the 4th century, rebuilt during the 5th century on a cruciform plan; and another basilica (5th cent.) flanked on the north side by additional buildings (*consignatorium*, *baptisterium*, *cathecumeneum*, *episcopium*). Five funeral basilicas, of great importance for the study of Paleo-Christian monuments, are those of Kapljuč; Manastirine, with a cemetery around the tomb of St. Domnius; Marusinac, including a cemetery, the apsidal mausoleum of St. Anastasius (on two levels, with two-storied, Oriental characteristics), and a *basilica discoperta*; of the other two, one is in the direction of the headwaters of the Jadar River, the other along the road to Vranjić.

After the Croatian conquest of Dalmatia (ca. 614) the area became the center of the new Croatian state under the Trpimirović dynasty (835–1090). At nearby Gradina na Otok there are remains of churches built by Croatian kings; in one of them Franco Bulić discovered the funeral inscription (976) of Queen Jelena; there are also remains of a Paleo-Croatian church (11th cent.) on a square plan and containing eight columns that formed an octagon and probably supported the dome. Near Majdan, the so-called "Šuplja Crkva" (11th cent.), known from documents, has been identified. At Rižinice are the remains of the Church of Sv. Petar, built (ca. 852) by Duke Trpimir. At Glavičine, Mravince, and near Majdan, there are Paleo-Croatian cemeteries with rich material, today at Split.

BIBLIOG. L. Jelić, F. Bulić, and S. Rutar, Guida di Spalato e Salona, Zara, 1894; F. Bulić, Nadgrobni nadpisi kraljice Helene u Solinu (The Tomb Inscription of Queen Jelena at Salona), Vjesnik Hrvatskoga arheol. društva, N.S., III, 1898, pp. 19–24; W. Gerber, R. Egger, and E. Dyggve, ed., Forschungen in Salona, 3 vols., Vienna, 1917–39; J. Zeiller, Basiliques chrétiennes de Salone et de la Dalmatia, BAFr, 1921, pp. 226–31; R. Egger, Die Basilik von Manastirine und ihre Gründer, Strena Buliciana, Zagreb, Split, 1924, pp. 379–86; E. Dyggve, J. Bröndsted, and E. Weilbach, ed., Recherches à Salone, 2 vols., Copenhagen, 1928–33; L. Karaman, Starohrvatsko groblje na Majdanu kod Solina (The Paleo-Croatian Necropolis at Majdan near Salona), Vjesnik za arheol. i h. dalmatinsku, LI, 1930–34, pp. 67–100; M. Abramić, Zapadna nekropola antikne Salone (The Western Necropolis of Ancient Salona), Vjesnik za arheol. i h. dalmatinsku, LII, 1935–49, pp. 1–18; L. Katić, Vodja po starohrvatskom Solinu (Guide to Paleo-Croatian Salona), Split, 1939; L. Karaman, Iskopine Društva "Bihaća" u Mravincima i starohrvatska groblja (Excavations of the Bihać Society at Mravince and the Paleo-Croatian Necropolis), Rad Jugoslavenske Akad. Znanosti i Umjetnosti, 268, 1940, pp. 1–44; R. Lantier, Le mausolée chrétien de Kapljuć à Salone, RA, XXVI, 1946, p. 111; G. Novak, Isejska i rimska Salona (Greek and Roman Salona), Rad Jugoslavenske Akad. Znanosti i Umjetnosti, 270, 1949, pp. 67–92; B. Gabričević, Dva priloga poznavanju urbanističkog razvoja antikne Salone (Two Essays toward the Understanding of Urban Development in Ancient Salona), Vjesnik za arheol. i h. dalmatinsku, LIII, 1950–51, pp. 155–62; E. Dyggve, History of Salonitan Christianity, Oslo, 1951 (rev. by M. Aubert, Les monuments chrétiens de Salone, JS, 1952, pp. 5-12); L. Katić, Salonitan Christianity, Oslo, 1951; L. Karaman, Nova knjiga o ranokršćanskoj Saloni (A New Book on Paleo-Christian Salona), Peristil, I, 1954, pp. 179–88; M. Abramić, Die christliche Archäologie in Jugoslavien in den letzten zwanzig Jahren, Actes Ve Cong. int. d'archéol. chrétienne, Aix-en-Provence, 1957, pp. 177–83; E. Dyggve, Le Baptistère de la Basilica Urbana à Salone d'après les fouilles de 1949, Actes Ve Cong. int. d'archéol. chrétienne, Aix-en-Provence, 1957, pp. 189–98; E. Ceci, I monumenti pagani di Salona, I, Milan, 1962.

Senj (anc. Senia; It. Segna). Founded by Iapygians, Senj, a Roman *municipium* under Augustus, became a center of trade between the Mediterranean and Pannonia. There are remains of the Roman walls and of buildings, capitals, mosaics, altars, inscriptions, and tombs. The fortress of the Uskoks has strong bastions and towers (16th cent.). The Romanesque Cathedral (13th cent.), with a partly brick façade, has undergone repeated restoration. On a hill is Nehaj Castle (ca. 1544).

BIBLIOG. M. Magdić, Topografija i povijest grada Senja (Topography and History of the City of Senj), Senj, 1877; G. Szabo, Sredovječni gradovi u Hrvatskoj i Slavoniji (Medieval Castles in Croatia and Slavonia), Zagreb, 1920; A. Schneider, ed., Hrvatski kulturni spomenici (Monuments of Croatian Civilization), I: Senj, Zagreb, 1940; I. Degmedžić, Arheološka istraživanja u Senju (Archaeological Research at Senj), Vjesnik za arheol. i h. dalmatinsku, LIII, 1950–51, pp. 251–62.

Šibenik (It. Sebenico). The town, which stands in the valley of the same name, is of early medieval origin. In the 12th century it was under Hungarian control; in the 13th century it became an autonomous city and the seat of a bishop; and from 1420 to 1797 it was under Venetian domination. The town lies in tiers around the old castle, encircled by the Venetian walls. The Cathedral (Sv. Jakov; XIII, PL. 76), rebuilt from 1431 on by Francesco di Giacomo, Lorenzo Pincino (Pinciano), and Antonio Busato, is in Gothic-Renaissance transitional style; the first story of the façade is in Gothic style; the dome at the crossing, the apse, and the ceiling, all in Renaissance style, are by Georg Matejević (Juraj Dalmatinac, Giorgio Orsini, Giorgio da Sebenico) and his pupils, by Nikola Firentinac (Niccolò di Giovanni Cocari), and by Andrija Aleši. The exterior of the Baptistery (ca. 1443), also by Georg Matejević, is entirely decorated with statues. Other noteworthy churches are the Gothic Sv. Franja, several times destroyed and rebuilt, with a coffered ceiling decorated with paintings (17th cent.) of the Tintoretto school; Sv. Dominik; Sv. Spas; Sv. Križ, with baroque elements; and Sv. Janez, with a staircase (1460) by Ivan Pribislavić. Civil buildings include the Loggia (1542) and the Fortress of Sv. Nikola (1546) by Gian Girolamo Sanmicheli, and the Foscolo and Orsini palaces.

In the neighborhood, at Vodice, at Bilice, and in the suburb of Jurasi, some circular buildings (called *bunje* or *poljarice*) have vaults similar to those used in nuraghi and trulli.

BIBLIOG. D. Frey, Der Dom Sebenico und sein Baumeister Giorgio Orsini, Jhb. der Zentralkommission, VII, 913, pp. 1–169; A. Alacevich, Pagine della storia di Sebenico, Šibenik, 1920; A. Dudan, La Dalmazia nell'arte italiana, 2 vols., Milan, 1921–22; C. Iveković, Bunje, ćemeri, poljarice, Zbornik krala Tomislava, Zagreb, 1925, pp. 413–29; L. Karaman, Umjetnost u Dalmaciji XV i XVI vijeka (15th- and 16th-Century Art in Dalmatia), Zagreb, 1933; M. Miličević, Nepoznata Dalmacija (Unknown Dalmatia), Zagreb, 1955; C. Fisković, Tri šibenska reljefa Nikole Firentinca (Three Bas-Reliefs by Nikola Firentinac at Šibenik), Peristil, III, 1960, pp. 37–42.

Sisak (anc. Siscia). Strabo spoke of two neighboring cities, Segestica and Siscia, which later on probably merged into one. In 35 B.C. the town was conquered by Octavian and became the strongest Roman city in Pannonia. Under Vespasian it became the Colonia Flavia Siscia, and under Septimius Severus it became an important port on the Sava. There are many remains of the Roman town: foundations of houses, baths, and a basilica, as well as columns, capitals, sarcophagi, steles, statues, reliefs, and altars dedicated to different divinities. The material found here (pottery, coins, jewelry, etc.) is kept in the Arheološki Muzej, Zagreb, and in the Gradski Muzej, Sisak. From the Paleo-Croatian period there are fragments with tracery decoration, earrings, and pottery (9th–10th cent.). The triangular fortress (1544–50), with three corner bastions, is by Pietro (di Martino) da Milano and Croatian assistants.

In the neighborhood, in the large villages of the Croatian Posavina, are oak-beamed houses and several wooden churches (at Bok, 18th cent.; at Buzeta, 19th cent.; at Brest, 20th cent.). At Selo there is a baroque church (1765) with a dome and two bell towers.

BIBLIOG. E. Laszowski, Hrvatske povjesne gradjevine (Historic Croatian Edifices), Zagreb, 1902; V. Hoffiler, Antike Bronzegefässe aus Sisak, ÖJh, XI, 1908, Beiheft, cols. 117–34; A. Bauer, Rimska olovna plastika (Roman Lead Sculpture), Vjesnik Hrvatskoga arheol. društva, N.S., XVII, 1936, pp. 1–35; A. Horvat, O Sisku u starohrvatsko doba (Sisak in Old Croatian Times), Starohrvatska prosvjeta, 3d ser., III, 1954, pp. 93–104; A. Horvat, Slojevi kulture pod živim gradom (Levels of Culture under a Living City) (Čovjek i prostor, I, 5), Zagreb, 1954; M. Šeper, Jedan nalaz keramike iz Siska (A Ceramic Discovery from Sisak), Arheol. vestnik, V, 1954, pp. 303–15; Fluss, RE, s.v. Siscia. See also Vjesnik Hrvatskoga arheol. društva, N.S., VIII–XII, 1904–12, passim.

Split (anc. Spalatum; It. Spalato). A highly important modern port, Split began as a small Greek colony (Aspalathos); in Roman times it was a fishing hamlet a few miles from Salona. In the late 3d century Diocletian built the imperial palace (Palatum), one of the most important monuments of the late-antique period (IX, PL. 34, FIG. 91). In the form of a castrum, divided into four equal parts by the *cardo* and the *decumanus*, and surrounded on three sides by strong walls with towers, it had three double gates (Aurea, Argentea, Ferrea) flanked by octagonal towers. Inside, beside the palace itself, there were buildings for worship, such as the Temple of Jupiter and the Mausoleum of Diocletian, as well as military and administrative facilities. The palace, with peristyle, atrium, vestibule, library, baths, triclinium, gynaeceum, and exedra, opened onto the sea; the façade was decorated with arcades supporting three loggias. Recent excavations on the level below have revealed a vast underground hall with three aisles. After the Avars and Croatians had destroyed Salona (in 614), the population sought refuge in the fortified palace. This gave rise to medieval Spalatum, where the Croatian element gradually became dominant. The Pope sent Giovanni Conversino da Ravenna as a missionary, and through his efforts the archbishopric of Split was established in the mid-8th century; the Temple of Jupiter became the Baptistery and the Mausoleum of Diocletian became the Cathedral.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

The original portico and vestibule of the Mausoleum were demolished to make room for the Cathedral's Romanesque bell tower (13th cent.; rebuilt in the 19th cent.); otherwise the original structure and decorations were retained. The base of the bell tower is decorated with Romanesque reliefs; the Cathedral's wooden door (1214), by Andrea Buvina, has 28 panels with reliefs representing scenes of the life of Christ. Noteworthy in the Cathedral are the Romanesque wooden stalls (13th cent.; altered in the 14th cent.); the hexagonal ciborium (13th cent.); the Chapel of St. Domnius (1427), by Bonino da Milano; the vault frescoes (1428) by Vušković; and the chapel and altar of St. Anastasius (1448), by Georg Matejević (the sculptures of the sarcophagus are a magnificent example of 15th-cent. realism). The Cathedral Treasury contains objects dating from the 8th to 18th centuries. In the Baptistery, which contains the sarcophagus of Giovanni da Ravenna and a bas-relief (11th cent.) representing a Croatian king and two other persons, elements of pre-Romanesque architecture were found. Above the Porta Aurea, on what was originally a sentry walk, is the small Church of Sv. Martin (ca. 800), which preserves its original iconostasis; another small church (Gospa od Zvonika; ca. 1100) is situated above the Porta Ferrea. Some of the numerous monuments of the old town, which grew up during the centuries within the walls of Diocletian's palace, are the churches of Sv. Rok and Sv. Duje; the Papalić (Gothic), Ivellio, and Cindro (baroque) palaces; and the town hall, with a Gothic loggia (1433). The Venetian town adjoined the western side of Diocletian's palace and was encircled by bastions and towers; there are several palaces (Cambi, Milesi, etc.), the Church of Sv. Duh, and the remains of the Benedictine abbey. In the modern town, outside the walls, are the Franciscan and Dominican monasteries. Museums: Arheološki Muzej, Etnografski Muzej, Muzej Hrvatskih Arheoloških Spomenika, Muzej Grada Splita, and Galerija Umjetnina.

Nearby are the ruins of the Paleo-Croatian Church of Sv. Jurje, on a circular plan with six semicircular niches. At the foot of Mount Marjan is the Muzej Meštrovoca, with works by the sculptor Ivan Meštrović.

Bibliog. C. Iveković, Die Entwicklung der mittelalterlichen Baukunst in Dalmatien, Vienna, 1910; G. Niemann, Der Palast Diokletians in Spalato, Vienna, 1910; E. Hébrard and J. Zeiller, Le palais de Dioclétien, Paris, 1912; L. Karaman, O značnju basreljefa u splitskoj krstionici (On the Meaning of the Bas-relief in the Split Baptistery), Zbornik kralja Tomislava, Zagreb, 1925, pp. 391–412; F. Bulić and L. Karaman, Palača cara Dioklecijana u Splitu (The Palace of the Emperor Diocletian at Split), Zagreb 1927; B. Lossky, Les ruines dioclétiennes de Split: Le Palladianisme et le néo-classicisme, Ann. Inst. fr. de Zagreb. 14–15, 1940, pp. 247–48; L. Karaman, Buvinove vratnice i drveni kor splitske katedrale (The Door Panels of Buvina and the Wooden Choir of the Split Cathedral), Rad Hrvatske Akad. Znanosti i Umjetnosti, 275, 1942, pp. 1–96; K. Prijateli, Barok u Splitu (Baroque at Split), Split, 1947; C. Fisković, Prilog proučavanju i zaštiti Dioklecijanove palače u Splitu (Contribution to the Study and Protection of Diocletian's Palace at Split) (Rad Jugoslavenske Akad. Znanosti i Umjetnosti, 279), Zagreb, 1950; C. Fisković, Romaničke kuće u Splitu i u Trogiru (Romanesque Houses at Split and Trogir), Starohrvatska prosvjeta, 3d Ser., II, 1952, pp. 129–78; L. Karaman, Pregled umjetnosti u Dalmaciji (Compendium of Art in Dalmatia), Zagreb, 1952; P. Skok, Postanak Splita (The Origins of Split), Anali H. Inst. u Dubrovniku, I, 1952, pp. 19–62; D. Kečkemet, Bibliografija o Splitu (Bibliography on Split), 2 vols., Zagreb, 1955–56; G. Novak, Povijest Splita (History of Split), Split, 1957; C. Fisković, Novi nalazi u splitskoj katedrali (Recent Discoveries at the Cathedral of Split), B. Jugoslavenske Akad. Znanosti i Umjetnosti, VI, 1958, pp. 81–101; L. Karaman, Andrija Buvina: Vratnice splitske katedrale, drveni kor u splitskoj katedrali (Andrea Buvina: The Door Panels and the Wooden Choir of the Split Cathedral), Zagreb, 1960; N. Duval, Le "palais" de Dioclétien à Spalato à la lumière des récentes découvertes, BAFr, 1961, pp. 76–117.

Trogir (anc. Τραγούριον, Tragurium; It. Traù). The Greek colony was founded (3d cent. B.C.) on a small island by the inhabitants of Issa (mod. Vis). Traces of the Greek walls have been found, as well as Greek and Latin inscriptions, a fine relief attributed to the school of Lysippos (now built into the wall of the Benedictine convent), and statues from the Roman period. In the Middle Ages the town was first under Byzantine, then under Hungarian, rule; from 1420 to 1777 it was ruled by Venice. The town nucleus, predominantly medieval in appearance, covers a small island between two canals. The Romanesque Cathedral (Sv. Lovre; XIII, PL. 76), begun in 1180 on the site of an earlier church and completed about 1250, has a peristyle surmounted by a bell tower (15th–16th cent.; Matija Gojković, T. Bokanić) and a magnificent portal (1240) with remarkable sculptures by Radovan and assistants (XIII, PL. 76); the interior consists of an ogival-vaulted nave (1427–40) and two cross-vaulted aisles, separated by rectangular piers, and three apses; the original pulpits and ciborium are preserved. In the left aisle are the Chapel of Sv. Ivan, by Andrija Aleši, Nikola Firentinac (Niccolò di Giovanni Cocari), and Ivan Duknović (Giovanni Dalmatia), on a square plan with barrel vaults and a rich decoration by Firentinac and Aleši, perhaps assisted by Laurana; and the Chapel of Sv. Jeronima, by Marco Gruato (Gruvato) and Nikolaus Račić. The square Baptistery has sculptured decoration by Aleši. The Church of Sv. Barbara (9th–11th cent.), a small basilica, has three aisles and reused capitals; the Romanesque-Gothic Church of Sv. Dominik dates from the 14th century. The Benedictine church (1270) is decorated with small pensile arches and has a quadrilateral apse. Civil buildings include the Loggia (1308), the town hall (15th cent., altered), the Kastel Kamerlengo (15th cent.), and the Čipico (15th cent., with a baroque portal), Fanfonja, Lucio, and Andreis palaces. Many private houses preserve remains of Romanesque structures.

Bibliog. R. Sladei-Šlović, Kašteo Kamerlengo u Trogiru (The Castle of the Chamberlain at Trogir), Vjesnik za arheol. i h. dalmatinsku, XXXIII, 1910, sup. 3; L. Jelić, Traù nella sua storia e nei suoi monumenti, B. archeol. e storia dalmata, XXXV, 1912, sup.; L. Karaman, Umjetnost u Dalmaciji XV e XVI vijeka (15th- and 16th-Century Art in Dalmatia), Zagreb, 1933; L. Karaman, Portal majstora Radovana (The Portal of Master Radovan), Rad Jugoslavenska Akad. Znanosti i Umjetnosti, 262, 1938, pp. 1–76; C. Fisković, Drvena gotička skulptura u Trogiru (The Wooden Gothic Sculpture at Trogir), Rad Hrvatske Akad. Znanosti i Umjetnosti, 275, 1942, pp. 97–133; K. Prijatelj, Les monuments français de Split et de Trogir, Ann. Inst. fr. de Zagreb, 26–27, 1945, pp. 265–70; M. Barada, Trogirski spomenici (Monuments of Trogir), 2 vols., Zagreb, 1949–50; C. Fisković, Radovan, Zagreb, 1951; G. Novak, Issa i isejska država (Issa and Its Empire), Vjesnik za arheol. i h. dalmatinsku, LIV, 1952, pp. 5–41, LV, 1956, pp. 37–70; K. Prijatelj, Ivan Dukovnić, Zagreb, 1957; C. Fisković, Trogir, Zagreb, Belgrade, 1959.

Varaždin. The town, an important center during the Middle Ages, preserves the castle (1575) of the Erdödy family, with fortified walls and strong bastions, built by Domenico dell'Allio. The town's architecture is predominantly baroque. Noteworthy churches include Sv. Marija (1642–46), formerly the Jesuit church; Sv. Nikolaja (1751–68), with a Gothic bell tower; and Sv. Ivan — all with rich baroque fittings. Also of note are the town hall (restored in 1793), the baroque Patačić Palace (1764), and the Keglević Palace.

In the vicinity there are many castles: Vinica (16th cent.; in ruins); Bela (16th–18th cent.); Opeka (18th cent.), with a beautiful park; Jalkovec (ca. 1900); and Ludbreg (18th cent.), with fresco decorations.

Bibliog. G. Szabo, Sredovječni gradovi u Hrvatskoj i Slavoniji (Medieval Castles of Croatia and Slavonia), Zagreb, 1920; G. Szabo, Kroz Hrvatsko Zagorje (Through Croatian Zagorje), Zagreb, 1939; K. Filić, Franjevci u Varaždinu (The Franciscans at Varaždin), Varaždin, 1944; A. Horvat, Spomenici u Hrvatskoj (Monuments in Croatia), Zagreb, 1956.

Vinkovci (anc. Cibalae). Inhabited from the Neolithic period on, under Hadrian the town became a *municipium* and under Septimius Severus a colony named the Colonia Aurelia Cibalae. There are traces of the Roman fortified walls and remains of the baths, a pottery-making center, and the necropolis, on the left bank of the Bosut River; a large part of the material found here (statues in provincial style, pottery, coins, etc.) is in the Arheološki Muzej, Zagreb. The present-day town is built around a baroque square with arcaded houses, the Church of Sv. Ivan Nepomuk (1772), and the Serbian Orthodox church (1794).

At nearby Lučica there is a brick Gothic church; at Rokovci there are ruins of another Gothic church.

Bibliog. J. Brunšmid, Colonia Aurelia Cibalae, Vjesnik Hrvatskoga arheol. društva, N.S., VI, 1902, pp. 117–66; V. Hoffiller, Spomenici rimskoga lončarskog obrta u Vinkovcima (Monuments of Roman Ceramic Art at Vinkovci), Vjesnik Hrvatskoga, arheol. društva, N.S., XIV, 1915–19, pp. 186–95; FA, X, 1957, no. 6279; G. Novak, EAA, s.v. Cibalae.

Vis (anc. Issa; It. Lissa). About 385 B.C. the Syracusans founded a colony on the island of Vis, which in 47 B.C. became a Roman *municipium*. From the Greek period there are remains of the walls (4th–3d cent. B.C.) and buildings, as well as many tombs with the so-called "Gnathia" pottery, imported from southern Italy, and vases made locally; fragments of Hellenistic structures, Greek inscriptions, and statues of the Tanagra type have been found. From the Roman epoch there are remains of a theater, the forum, tombs, statues, and inscriptions in Greek and Latin. The material found at Vis is kept in the archaeological museums at Split, Zagreb, and Vienna.

Bibliog. J. Brunšmid, Inschriften und Münzen der griechischen Städte Dalmaziens, Vienna, 1898, pp. 20–31, 58–68; P. Lisičar, Crna Korčula i kolonije antičkih Grka na Jadranu (Corcyra Nigra and the Ancient Greek Colonies on the Adriatic), Skopje, 1951; G. Novak, Issa i isejska država (Issa and Its Empire), Vjesnik za arheol. i h. dalmatinsku, LIV, 1952, pp. 5–41, LV, 1956, pp. 37–70; B. Gabričević, Antička Issa: Arheološko-provijesni prilog za urbanističko-regulacionu osnovu grada Visa (Ancient Issa: Historical and Archaeological Contribution to the Urban Plan of the City of Vis), Urbs, 1958, pp. 105–25; G. Novak, Vis, I, Zagreb, 1961; G. Novak, EAA, s.v. Issa.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Vizače (anc. Nesaticum; It. Nesazio). This Istrian stronghold, erected on the location of a prehistoric settlement, was destroyed by the Romans in 177 B.C. but was rebuilt and later became a *municipium*. About the 2d century of our era it had a period of prosperity. Traces of the prehistoric walls, with gate, and an Atestine necropolis have been discovered. Sculptures (7th–6th cent. B.C.) of archaic Greek influence and imported Greek vases (5th cent. B.C.) have been found, as well as situlae and Attic, Apulian, and Este vases. From the Roman period there are remains of the walls, with several gates; of the forum area, with twin temples built on the site of a prehistoric place of worship (of the goddess Eia?); of private houses and baths; and of a necropolis. There are also basilicas from the Paleo-Christian epoch.

Bibliog. A. Puschi, La necropoli preromana di Nesazio, Atti e mem. della Soc. istriana di archeol. e storia patria, XXI, 1905, pp. 3–202; A. Puschi, Edifici antichi scoperti a Nesazio, Atti e mem. della Soc. istriana di archeol. e storia patria, XXI, 1905, pp. 265–97; A. Gnirs, Istria praeromana, Karlsbad, 1925; B. Forlati Tamaro Inscriptiones Italiae, X, 1: Pola et Nesactium, Rome, 1947; V. Scrinari, Contributo al problema dei templi gemini, Ann. triestini, XIX, 1949, pp. 81–93; B. Marušić, Slavensko-avarski napadi na Istru u svijetlu arheološke grade (The Slav-Avar Attacks upon Istria in the Light of the Archaeological Materials), Peristil, II, 1957, pp. 63–70.

Zadar (anc. Iadera; It. Zara). Originally a Liburnian town, Zadar is located on a peninsula in the Adriatic. Iadera, promoted to the status of a colony by Augustus in 34–33 B.C., was a prosperous center, trading especially in oil and wine; after the destruction of Salona, it became the most important town in Dalmatia. It was controlled by Byzantium, by the Croatians, and by Venice (1409–1797). Of the Roman town there are remains of two honorary gates and of the forum, whose paving is preserved under the former Church of Sv. Donat; two restored columns, one in front of the bishop's residence, the other near the public gardens; remains of the aqueduct and the baths; and inscriptions, altars, cippi, fragments of statues, and pottery. The town, which suffered much damage during World War II, has retained the Roman town plan, with streets intersecting at right angles. The deconsecrated Church of Sv. Donat (now the Arheološki Muzej) probably dates from the 9th century (XI, PL. 323, FIG. 672); built on Roman foundations, it is a two-storied rotunda with annular aisles and three apses. From the Paleo-Croatian period are the Church of Sv. Lovre (11th cent.), with a tympanum decorated with a bas-relief representing Christ in glory, and the Romanesque Church of Sv. Krševan (12th cent.), with frescoes of Byzantine and Giottesque influence. The Cathedral (Sv. Stošija), originally from the 11th century (crypt with fragments of the 8th–9th cent.) and consecrated in 1285, is Romanesque, with influences from Tuscany and Apulia in the architecture and from Lombardy in the sculpture; in the interior, the two side aisles, separated from the nave by piers with double columns, are surmounted by women's galleries (*matroneum*) with six-light windows. The Cathedral contains a ciborium from 1332, a painting by Palma Giovane, parts of an altarpiece by Carpaccio (ca. 1480), and a rich treasury. The Church of Sv. Marija, originally from the 12th century (bell tower, with frescoes from 1105), has a Renaissance façade of Venetian influence and contains baroque stuccowork (18th cent.). In the treasury of the Church of Sv. Šimun is the shrine (1377–80) of St. Simeon, donated by Queen Elizabeth of Hungary, a masterpiece of the jeweler Francesco da Sesto of Milan and his Croatian assistants. The Church of the Franciscan monastery (founded in 13th cent., entirely rebuilt in 17th–18th cent.) contains a wooden crucifix (12th cent.) and richly carved stalls (14th cent.); the cloister dates from the 16th century. Noteworthy civil structures include the Clock Tower (18th cent.), the Loggia (1565), the Porta Marina (1572), and the Porta Terra Firma (1543) by Sanmicheli.

Bibliog. A Hauser and F. Bulić, San Donato in Zara, Mitt. der K. K. Zentral-Kommission, N.S., VIII, 1882, pp. 59–81; C. Bianchi, Fasti di Zara, Zara, 1888; G. Sabalich, Guida archeologica di Zara, Zara, 1892; M. Monneret de Villard, La architettura romanica in Dalmazia, Milan, 1910; M. Abramić, Führer durch das K. K. Staatsmuseum in St. Donato in Zara, Zara, 1912; V. Brunelli, Storia della città di Zara dai tempi più remoti sino al 1815, I, Venice, 1913; G. de Bersa, Guida storico-artistica di Zara, Trieste, 1926; J. Strzygowski, Starohrvatska umjetnost (Old Croatian Art), Zagreb, 1927; C. M. Iveković, Crkva i samostan sv. Krševana u Zadru (The Church and Monastery of Sv. Krševan in Zadar), Zagreb, 1931; C. Cecchelli, Zara: Catalogo delle cose d'arte e d'antichità, Rome, 1932 (bibliog.); A. Benvenuti, Zara nella cinta delle sue fortificazioni, Milan, 1940; O. Randi, I monumenti romani e veneti di Zara, Romana gens, XLVI, 1949, pp. 1–2; M. Suić and G. Oštrić, Izvještaj o arheološkim iskopanjima u Zadru (Notes on Archaeological Investigations at Zadar), Jugoslavenske Akad. Znanosti i Umjetnosti za godine 1946–48, LV, 1949, pp. 199–223; Zlato i srebro Zadra (Gold and Silver of Zadar), Zagreb, 1951; P. Skok, Postanak hrvatskoga Zadra (Origins of Croatian Zadar), Radovi Inst. Jugoslavenske Akad. Znanosti i Umjetnosti u Zadru, I, 1954, pp. 37–68; M. Suić, Prethistorijski nalazi u Zadru (Prehistoric Discoveries at Zadar), Zbornik Inst. za historijske nauke u Zadru, II, 1956–57, pp. 1–12; M. Suić, Novija arheološko-topografska istraživanja antickog Jadera (Archaeological-topographical Research on Ancient Iadera), Zbornik Inst. za historijske nauke u Zadru, II, 1956–57, pp. 13–50; C. Fisković, Zadarski sredovječni majstori (Medieval Masters of Zadar), Split, 1959; I. Petricioli, Pojava romaničke skulpture u Dalmaciji (Appearance of Romanesque Sculpture in Dalmatia), Zagreb, 1960; B. Ilakovać, Prilog arhitekturi i urbanizmu Iadera (Contribution to the History of the Roman Architecture and Urbanism of Iadera), Radovi Inst. Jugoslavenske Akad. Znanosti i Umjetnosti u Zadru, IX, 1962, pp. 219–49; I. Petricioli, Ostaci stambene arhitekture romaničkog stila u Zadru (Remains of Romanesque Architecture in Zadar), Radovi Inst. Jugoslavenske Akad. Znanosti i Umjetnosti u Zadru, IX, 1962, pp. 117–61.

Zagreb. The capital of the People's Republic of Croatia. The city consisted of two centers — Zagreb, or Kaptol, known since 1094, when the Zagreb bishopric was founded (the surrounding walls date from 1466), and Grič, or Gradec, which became a free royal city in 1242 — which merged in the 19th century. Some towers are left of the medieval walls (1266) of Grič (Kamenica Vrata, Popov Toranj, Dverce). The Cathedral, rebuilt in 1275 to replace an older church destroyed by the Tatars in 1241, was modeled on the Church of St-Urbain at Troyes; the exterior, damaged several times, was rebuilt in Neo-Gothic style to the designs of Friedrich von Schmidt and Hermann Bollé in the 19th century, when the fortified walls (ca. 1517) around the church were partly destroyed and the baroque bell tower was replaced by two Neo-Gothic ones. The three-aisled interior is decorated with sculptures of the Prague school of Parler; of note are the stalls (1520) inlaid by Pietro de Rechardo, the marble pulpit by Cussa (1696), and the 13th-century frescoes. The Gothic parish church of Grič (Sv. Marko), restored in the 19th century, has a portal decorated with sculptures (after 1400); it contains modern works by Ivan Meštrović and Joza Kljaković (ca. 1937). Other noteworthy churches include Sv. Marija, with baroque marble furnishings by Franz Rottmann (Rodmann, Rothmann); Sv. Katarine (1620–32), in Roman baroque style, with frescoes (1726–29) by Franz Jelovšek and stuccoes; Sv. Ksaver (1748–52); Sv. Ivan (1789–90), with frescoes (18th cent.) by A. Lerchinger and Arher; and Sv. Vlaho (1915), designed by Viktor Kovačić. The Nadbiskupski Dvor (Archbishop's Palace; ca. 1730) contains the Gothic Chapel of Sv. Stjepan, with mid-14th-century frescoes. There are several palaces dating from the 17th to the 19th century (Oršić, Jelačić, etc.).

The modern section of Zagreb, dating from the 19th century, has several noteworthy public buildings: the Univerzitet, or Sveučilište (1856); the Jugoslavenska Akademija Znanosti i Umjetnosti (1879); the Hrvatsko Narodno Kazaliste (National Croatian Theater; 1895), in baroque style; the Maksimir, a neoclassic park; the Umjetnički Paviljon; and the Sveučilišna Biblioteka (ca. 1913). The cemetery of Mirogoj is surrounded by monumental neo-Renaissance arcades by Bollé (after 1876). Museums: Muzej za Umjetnost i Obrt, Arheološki Muzej, Muzej Grada Zagreba, Gliptoteka, Stara Galerija (with paintings by Fra Angelico, Filippino Lippi, Cosimo Rosselli, Pintoricchio, Paolo Veronese, Tintoretto, etc.), Moderna Galerija, Gradska Galerija Savremene Umetnosti, Etnografski Muzej, and various private collections.

At nearby Šćitarjevo are the remain of the Illyrian Andautonia, later a Roman *municipium*. In the environs of Zagreb there are ruins of medieval castles (Medvedgrad, ca. 1250; Susegrad; Zelingrad), several from the 18th century (Lužnica, Lukavec, Bistra, and Brezovica, all with frescoes), and the neoclassic Januševec (ca. 1820). At Donja Lomnica there is a wooden palace (1806). South of Zagreb, in the Turopolje lowlands, are several wooden churches, the most beautiful being Sv. Barbara, in the village of Velika Mlaka; its interior is painted (mid-18th cent.) in baroque style. North of Zagreb, in the villages of Šestine, Gračani, Remete, and Markuševec, picturesque folk costumes are still used for weddings and festivals. Homespun fabrics, interwoven with red, are produced locally.

Bibliog. I. Kukuljević, Prvostolna crkva zagrebačka (The Cathedral of Zagreb), Zagreb, 1856; K. Weiss, Der Dom zu Agram, Zagreb, 1860; I. K. Tkalčić, Prvostolna crkva zagrebačka (The Cathedral of Zagreb), Zagreb, 1885; G. Szabo, Sredovječni gradovi u Hrvatskoj i Slavoniji (Medieval Castles in Croatia and Slavonia), Zagreb, 1920; A. Schneider, Perivoji, vrtovi i šetališta u starome Zagrebu (Parks, Gardens and Avenues in Old Zagreb), Narodna starina, 20, 1930, pp. 149–80; F. Buntak, Župna crkva sv. Marije u Zagrebu (The Parish Church of Sv. Marija in Zagreb), Vjesnik Hrvatskoga arheol. društva, N.S., XVII, 1936, pp. 37–109; J. Klemenc, Archäologische Karte von Jugoslavien: Blatt Zagreb, Belgrade, 1938; G. Szabo, Stari Zagreb (Old Zagreb), Zagreb, 1941; L. Topali, Drvene crkvice i seljačko drveno graditeljstvo u Turopolju (Wooden Architecture of Village Churches and Peasant Houses in Turopolje), Etnografska istraživanja i gradja, III, 1941, pp. 121–59; L. Babić, Umjetnost kod Hrvata (Art of the Croats), Zagreb, 1943; L. Karaman, O umjetnosti srednjeg vijeka u Hrvatskoj i Slavoniji (Medieval Art in Croatia and Slavonia), Historijski zbornik, I, 1948, pp. 103–27, III, 1950, pp. 125–74; A. Mohorovičić, Analiza histo-

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

rijsko-urbanističkog razvoja grada Zagreba (Analysis of the Historical-urbanistic Development of Zagreb), Rad Jugoslavenske Akad. Znanosti i Umjetnosti, 287, 1952, pp. 27–51; A. Horvat, Denkmäler in Kroatien, Zagreb, 1957; Iz starog i novog Zagreba (From Old and New Zagreb), 2 vols., Zagreb, 1957–60; A. Horvat, Skulptura Parlerovog kruga u zagrebačkoj katedrali (Sculpture of the School of Parler in Zagreb Cathedral, Zbornik za umetnostno zgodovino, N.S., V–VI, 1959 (Lavreae F. Stelè), pp. 245–67; A. Horvat, Odraz praškoga Parlerovog kruga na portalu crkve sv. Marka u Zagrebu (Influence of the School of Parler on the Portal of the Church of Sv. Marko at Zagreb), Peristil, III, 1960, pp. 13–32.

Bosnia-Herzegovina (*Bosna-Hercegovina*). Banja Luka. Situated on a hill overlooking the Vrbas River, the town was an important Roman military center. In the 14th century the fortress (Vrbaski Grad) was built; the town was occupied by the Turks in the 16th century. There are remains of the Roman baths and tombs. The modern town has extended in the direction of the valley; the old town has retained the character of a citadel. Noteworthy buildings include the Ferhadija Džamija (1557–83), a mosque modeled on that of Sultan Sulaymān in Istanbul; the Arnaudija Džamija; and the Kaštel, restored in the 18th century.

Bibliog. J. Asboth, Bosnien und die Herzegowina, Vienna, 1888; S. Bešlagić, Kratka uputa (Short Guide), Sarajevo, 1900; L. Thallóczy and M. Šufflay, Povijest banovine, grada i varoši Jajca (History of the Banat, Castle and City of Jajce), Zagreb, 1916; A. Bejtić, Banja Luka pod turskom vladavinom (Banja Luka under Turkish Rule), Nase starine, I, 1953, pp. 91–116.

Bistua Nova (mod. Zenica). The Roman town, near Zenica, was an important coal-mining center. In the vicinity of the modern town are remains of the Roman period and of a Paleo-Christian basilica, with steles bearing reliefs and fragments of the Paleo-Croatian decorations.

Bibliog. Ć. Truhelka and K. Patsch, Iskopine u dolini Lašve 1893 (Excavations in the Lašva Valley in 1893), Glasnik Zemaljskog Muz. u Sarajevu, V, 1893, pp. 685–707; C. Truhelka, Starokršćanska arheologija (Paleo-Christian Archaeology), Zagreb, 1931; Poviest hrvatskih zemalja Bosne i Hercegovine (History of the Croat Lands of Bosnia and Herzegovina), Sarajevo, 1942.

Delminium (mod. Županiac). Delminium was occupied in 155 B.C. by the Romans, who made it a *municipium*. There are remains of the forum, with a portico on three sides and a basilica(?) on the fourth, and three other buildings, with statues; remains of baths and other buildings, vases, coins, altars, and fragments of columns, piers, and architraves have also been found.

Bibliog. K. Patsch, Prilog topografiji i povjesti Županica-Delminiuma (Contribution to the Topography and History of Županiac-Delminium), Glasnik Zemaljskog Muz. u Sarajevu, XVI, 1904, pp. 307–66; G. Novak, EAA, s.v. Delminium.

Domavium (mod. Srebrenica). The Illyrian town became a Roman *municipium* and later a colony. Lead and silver were already being mined in the Bronze Age. There are remains of the curia, comprising two adjoining buildings, in one of which bases of statues have been found. The material found here is in the museum at Sarajevo.

Bibliog. V. Radimsky, Rimski grad Domavija u Gradini kod Srebrenice (The Roman City of Domavium at Gradina near Srebrenica), Glasnik Zemaljskog Muz. u Sarajevu, III, 1891, pp. 1–19; V. Radimsky, Prekopavanje u Domaviji kod Srebrenice godini 1891 (Excavations at Domavium near Srebrenica in 1891), Glasnik Zemaljskog Muz. u Sarajevu, IV, 1892, pp. 1–24; G. Novak, EAA, s.v. Domavia.

Foča. The town, which stands where the Ćeotina joins the Drina, has several noteworthy mosques: Aladža Džamija (1549), by Ramadan-aga, a pupil of Sinān; Atik Džamija (1518); Kadi Osman Džamija (1593); and Basha Džamija (1753). Of interest are the large Han (17th cent.) and the Sahat Kula (Clock Tower; 1750).

In the neighborhood are Višegrad, with a multiple-arched stone bridge (1571; 540 ft. long) and the remains of a fortress, and Humsko, where in 1933 the funerary monument of the high Bogomile dignitary Milutin, with symbolic decorations, was found.

Bibliog. M. Zarzycki, E. Arndt, and G. Stratimirović, Aladža-džamija u Foči (The Aladža Mosque at Foča), Glasnik Zemaljskog Muz. u Sarajevu, III, 1891, pp. 103–15; V. Skarić, Grob i grobni spomenik gosta Milutina na Humskom u fočanskom srezu (The Tomb and Sepulchral Monument of Gost Milutin at Humsko in the Foča District), Glasnik Zemaljskog Muz. u Sarajevu, XLVI, 1934, pp. 79–82.

Ilidža. A spa near Sarajevo, Ilidža contains remains of Roman baths (2d cent. B.C.), with mosaics. The material found here is in the museum at Sarajevo.

Bibliog. J. Kellner, Römische Baureste in Ilidže bei Sarajevo, Wissenschaftliche Mitt. aus Bosnien und Herzegowina, V, 1897, pp. 1–32; N. Miletić, Nekropola u selu Mihaljevićima kod Rajlovac (Necropolis in Mihaljevići near Rajlovac), Glasnik Zemaljskog Muz. u Sarajevu, N.S., XI, 1956, pp. 9–41; F. Novak, FA, VI, no. 5988; G. Novak, EAA, s.v. Aquae S(...).

Jajce. Built in the early 15th century, Jajce was the residence of the kings of Bosnia until the Turkish conquest (1463). The town grew up around the Kaštel, built by Italian masters on a hill, surrounded by walls and bastions with portals carrying the coat of arms of the Hrvatinić family; two towers, Medved Kula and Sahat Kula, are linked to the Kaštel. The Franciscan church is noteworthy. Cut into the rocks are the so-called "Bogomile Catacombs" (perhaps a mausoleum), with Romanesque and Gothic elements. In the neighborhood there are remains of a mithraeum. The old water mills along the cascades of the Pliva are similar to the Bosnian wooden houses with sloping roofs.

Bibliog. Ć. Truhelka, Katakombe u Jajcu (Catacombs at Jajce), Glasnik Zemaljskog Muz. u Sarajevu, IV, 1892, pp. 57–68; L. Thallóczy and M. Šufflay, Povijest banovine, grada i varoši Jajca (History of the Banat, Castle and City of Jajce), Zagreb, 1916; D. Sergejevski, Spätantike Denkmäler aus Jajce, Glasnik Zemaljskog Muz. u Sarajevu, L, 1938, pp. 49–63.

Konjic (anc. Brindia). The town, of Roman origin, has expanded along both banks of the Neretva, connected by a Turkish five-arched stone bridge (1682; restored). A mithraeum with a relief of a god was found in the neighborhood; at nearby Lisičići there are three late imperial Roman villas (3d–4th cent.) and a necropolis.

Bibliog. K. Patsch, Mithräum u Konjicu (The Konjic Mithraeum), Glasnik Zemaljskog Muz. u Sarajevu, IX, 1897, pp. 629–56; I. Čremošnik, Nova antička istraživanja kod Konjica i Travnika (New Research in Antiquity near Konjic and Travnik), Glasnik Zemaljskog Muz. u Sarajevu, N.S., X, 1955, pp. 107–36; I. Čremošnik, Dalja istraživanja na rimskom naselju u Lisičićima (Further Research on the Roman Colony at Lisičići), Glasnik Zemaljskog Muz. u Sarajevu, N.S., XII, 1957, p. 143.

Mostar. The capital of Herzegovina. Of Roman origin (Andetrium, or Mandetrium), Mostar grew considerably in the Middle Ages and became a very active trade center in the 17th and 18th centuries. It was the residence of Sandjak Beg in the 15th century and of an Orthodox bishop in the 18th. The town expanded along both banks of the Neretva, linked by several bridges; the most notable is the so-called "Roman bridge" (1566–67; XIII, pl. 75), built by Hajrudin, with a single arch and flanked by towers. The town has a markedly Oriental character because of the many minarets and Turkish buildings. Noteworthy mosques are the Karadžoz Begova Džamija (1557), with richly decorated minaret and şerefe, and the Koski Mehmed Paše Džamija. The Orthodox Cathedral, the Sahat Kula, and the Bišćevića Ćošak are interesting.

At nearby Blagaj are the ruins of the Šćepangrad, a 15th-century fortress; near the source of the Buna are the remains of the Ali Paša Rizvanbegović Džamija; at Radimlje there is a Bogomile necropolis (XIII, pl. 75) with symbolically decorated tombs (dances, hunting scenes).

Bibliog. A. Benac, Radimlja, Sarajevo, 1950; A. Benac, Široki Brijeg, Sarajevo, 1952; S. Bešlagić, Stećci u dolini Neretve (Sepulchral Stones in the Naretva Valley), Naše starine, II, 1954, pp. 180–212.

Sarajevo. The capital of the People's Republic of Bosnia-Herzegovina. The town was founded by the Turks in the 15th century around the Vhrbosna, the conquered fortress of the local rulers. Because of its fortunate geographic position, the town expanded rapidly along the banks of the Miljacka. The name Sarajevo (Town of the Palaces) first appeared in the 16th century. In 1697 Prince Eugene of Savoy burned the town, and after a long period of decay it experienced a new spurt of growth at the end of the 19th century. The Begova Džamija, built in 1530 by Sinān, who was inspired by Hagia Sophia in Istanbul, has a wide dome on an octagonal base and two smaller domes flanked by a tall minaret; the portico has ogival arches. Other noteworthy mosques include the Sarač Hadži Ali Džamija (1545); the Careva Džamija, erected in 1450 for Isa Beg and rebuilt (ca. 1565) after a fire; the Hadim Ali Paša Džamija (1561); and the Baščaršiska Džamija (1550). Particularly interesting is the Oriental quarter of Čaršija, a market center with picturesque streets and buildings, including the Madrasah (15th cent.), often called "Kuršumlija" because of its lead (*kuršum*) roof, with a richly decorated portal and a tall, square, red-brick tower; the Gazi Husrefbegov Bezistan; and the Husrefbegov Hammam. The Kaštel, surrounded by bastions and walls, has three 15th-century gates. More recent are the Neo-Byzantine Orthodox Cathedral (1882); the Neo-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Gothic Catholic Cathedral (1889); the Orthodox Church of Sv. Arhanjeli, with the adjoining museum of the Dobro-bosanska diocese, rich in manuscripts; the Sephardic synagogue; and the town hall, a modern building in Moorish style. The Zemaljski Muzej contains rich prehistoric, archaeological, and ethnographic collections.

In the vicinity of Sarajevo there are, at Breza, a church from the time of Theodoric the Great; at Rogačići, a circular church (12th cent.) with six niches; and a Bogomile necropolis.

Bibliog. E. Stix, Das Bauwesen in Bosnien und Herzegowina, Vienna, 1887; Ć. Truhelka, Naši gradovi (Our Cities), Sarajevo, 1904; S. F. Kemura, Javne muslimanske gradjevine u Sarajevu (Moslem Public Buildings in Sarajevo), Glasnik Zemaljskog Muz. u Sarajevu, XX, 1908, pp. 475–94; Ć. Truhelka, Gazi Husrufbeg: njego život i njegovo doba (Gazi Husrufbeg: His Life and Times), Glasnik Zemaljskog Muz. u Sarajevu, XXIV, 1912, pp. 91–234; H. Mineti, Osmanische provinziale Baukunst auf dem Balkan, Hannover, 1923; A. Nametak, Islamski kulturni spomenici (Islamic Monuments), Sarajevo, 1939.

Travnik. The former capital of Bosnia and later the residence of the Turkish vizier, Travnik was built near the fortress (15th cent.) founded by King Tvrtko II. Of the many mosques the Jeni Džamija, built over a medieval church, and the Hadži Alibegova Džamija are particularly interesting.

In the surrounding area are the villages of Varošluk, with a Paleo-Christian church (4th cent.) and the barrel-vaulted Bogomile mausoleum of Batalo, on a square plan and with a portico (ca. 1393); Turbe, with a two-storied Paleo-Christian mausoleum with barrel vaults (4th–5th cent.) and the mausoleum of Sheik Ismail-baba (1770); Pašinac, with a Roman building from the age of Trajan, subsequently turned into a Paleo-Christian sanctuary; and Rankoviči, with baths and living quarters from Roman times.

Bibliog. A. Hoffer, Nalazišta rimskih starina u Travničkom kotaru (Discoveries of Roman Antiquities in the Travnik District), Glasnik Zemaljskog Muz. u Sarajevu, VII, 1895, pp. 1–42; Ć. Truhelka, Grobnica bosanskog tepčije Batala, obretena kod Gornjeg Turbeta (The Mausoleum of the Bosnian Official Batalo, Discovered near Gornje Turbe), Glasnik Zemaljskog Muz. u Sarajevu, XXVII, 1915, pp. 365–74; M. Mandić, Vezirski grad Travnik (The Vizier's City Travnik), Zagreb, 1931; J. Petrović, S arheologom kroz Travnik (With an Archaeologist across Travnik), Zagreb, 1931; D. Sergejevski, Kasno, antički mauzolej u Turbetu (Kasno, Ancient Mausoleum at Turbe), Glasnik Zemaljskog Muz. u Sarajevu, N.S., VI, 1951, pp. 135–45; I. Čremošnik, Nova antička istraživanja kod Konjica i Travnika (New Research in Antiquity near Konjic and Travnik), Glasnik Zemaljskog Muz. u Sarajevu, N.S., X, 1955, pp. 107–36.

Serbia (*Srbija*). Banjska. The monastery of Banjska, near Kosovska Mitrovica, was built (ca. 1314) by kings Dragutin and Milutin. The church, stylistically of the Raška school, has a dome, a wide semicircular apse, and a narthex later flanked by two bell towers; it is covered with polychrome marble and decorated with Romanesque sculptures similar to those at Studenica and Dečani. Little remains of the frescoes.

Bibliog. A. Deroko, Banjska, Starinar, 3d ser., VI, 1931, pp. 107–09.

Belgrade (anc. Singidunum; Beograd). The capital of the Federal People's Republic of Yugoslavia, Belgrade has always been an important center. Singidunum (its name suggests a Celtic origin) was built on the site of a prehistoric settlement; in the 1st century of our era it was a Roman military camp, which in the 3d century became a colony. Inscriptions, altars, and statues from this period have been found. The town was destroyed by repeated barbarian invasions, rebuilt and fortified by Justinian, and again destroyed. In the 9th century it reappeared in the chronicles with the Slavic name of Beli Grad (White City). During the subsequent centuries it was under Byzantine, Magyar, and Bulgarian rule; in 1521 it was conquered by the Turks; from the 17th century to 1867 it was alternately ruled by the Turks and the Hapsburgs. During World Wars I and II Belgrade was to a large extent destroyed, but both times it was rapidly rebuilt.

The older parts of Belgrade extend in concave tiers down the sloping hills toward the Sava, while the newer sections cover the central areas of the plateau. One of the most noteworthy monuments is the Citadel, rebuilt several times since the Roman period (almost nothing remains of the Roman and medieval structures) and completely refurbished in the 18th century by the Swiss Nikolas Doxat (1682–1738). The Citadel comprises two sections, Gornji Grad and Donji Grad, and has noteworthy towers — Sahat Kula (18th cent.), Kula Jakšić, and Kula Nebojša — and the Kapija Princa Evgenija Savojskog (Prince Eugene's Gate; ca. 1717) in baroque style, designed by Doxat. Religious buildings include the Bajrakli Džamija, a 17th-century mosque; the Orthodox Cathedral (1840–45), in baroque style, with an iconostasis by Dimitri Avramović; the Ružica Crkva, consecrated in 1830, formerly a Turkish arsenal; the Vaznesenka Crkva (Church of the Ascension; 1863); Crkva Aleksandra Nevskog, a modern church in Byzantine style; the Church of Sv. Marko, by B. Krstić, which repeats the architectural motifs of Gračanica; and Sv. Save (1895, restored in 1905). Noteworthy civil buildings are the Narodno Pozorište (National Theater; 1868, later altered); the Patriarchate; the Konak Kneginje Ljubice (1831), by Hadži Nikola Živković, in Serbo-Balkan style; the French Embassy (1933), a neoclassic building by Expert, with decorations by Charles Sarrabezolles; the Umetnički Paviljon, used since 1928 for exhibits of contemporary art; the Parliament (begun 1907); and the University buildings, by N. Nestorović and B. Tanazević. Museums: Narodni Muzej, with prehistoric, archaeological, medieval, numismatic, and epigraphic collections and modern Yugoslav and foreign (French impressionists and postimpressionists, German expressionists, etc.) paintings; Etnografski Muzej; Galerija Fresaka, with copies and tracings of Yugoslav medieval mural paintings (9th–15th cent.); Vukov i Dositejev Muzej, in the Velika Škola (Old University), which in the 17th century housed the harem of a pasha; Muzej Pozorišne Umetnosti (Serbian Theater Mus.); and Muzej Primenjene Umetnosti (Mus. of Applied Arts).

In the vicinity is Topčider, a large park with the Konak Kneza Miloša (1834; now the Muzej Prvog Srpskog Ustanka), in Serbo-Balkan style; a small church (1834) with icons by Stevo (Stefan) Todorović and Nikola Marković; and the so-called "Miloševa Česma" (19th cent.), a fountain in typical Balkan style. At Dedinje is the Beli Dvor (White Palace, 1929), the residence of Marshal Tito, and the monastery of Rakovica (18th cent.). At Vinča there are important archaeological finds from the Stone Age. The surrounding area of Belgrade, Šumadija, is noted for its farmhouses and folk costumes.

Bibliog. M. M. Vassits, Bronze in Belgrad, ÖJh, III, 1900, pp. 172–77; Spomenik Srpska Kraljevska Akad., LXXI, 1931, p. 6, LXXV, 1933, pp. 1–8; J. Petrović, Prilozi rimskoj topografiji grada Beograda (Contributions to the Roman Topography of the City of Belgrade), Starinar, 3d ser., VIII–IX, 1933–34, pp. 313–21; D. Jovanović, Beogradska tvrdjava (The Belgrade Citadel), Umetnički pregled, III, 1940, pp. 134–38; Spomenik Srpska Kraljevska Akad., XCVII, 1941–48, pp. 4–9; N. Vulić, Antički spomenici naše zemlje (Monuments of Antiquity of Our Land) (Spomenik Srpska Kraljevska Akad., XCVIII), Belgrade, 1949; D. M. Garašanin, Nova arheološka nalazišta okoline Beograda u dolini Save (New Archaeological Sites in the Sava Valley in the Belgrade Environs), Starinar, N.S., I, 1950, pp. 90–112; D. Jovanović and M. V. and D. Garašanin, Iskopavanja na beogradskoj tvrdjavi 1948 (Excavations at the Belgrade Citadel 1948), Starinar, N.S., II, 1951, pp. 255–65; O. Šafarik, A Depot from the Bronze Age, Starinar, N.S., II, 1951, pp. 99–106; J. Sobić, Odeća i ornamenat Srbije (Costume and Ornament of Serbia), Belgrade, 1956; P. Vlahović and P. Milosavlević, Seoski nadgrobni spomenici (Rural Stones in Serbia), Belgrade, 1956; E. Brödner, Kurzer Überblick über die Baugeschichte der Festung Belgrad vom 15. bis zum 19. Jh., Varia archaeologica, Berlin, 1964, pp. 402–09; Fluss, RE, s.v. Singidunum

Caričin Grad. On this site, near Niš, are ruins of a town, probably Justiniana Prima, destroyed at the beginning of the 7th century of our era. From the acropolis, where the three-aisled episcopal basilica with a baptistery stood, four gates gave access to the town. In the town the remains of a three-aisled basilica and of a bath complex were found. Outside the walls is a church on a triconch plan with an exonarthex. In both churches there are remains of frescoes and mosaics. The architectural sculptures recall those of Asia Minor.

Bibliog. V. Petković, Izvestaj o iskopavanju u Caričinom Gradu kod Lebana 1912 (Communication on the Excavations at Caričin Grad in 1912), Godišnjak Srpske Akad., XXVII, 1913, pp. 285–91; A. Grabar, Les monuments de Tzaritchingrad et Justiniana Prima, CahA, III, 1948, pp. 49–63; V. Petković, Les fouilles de Tsaritchingrad, CahA, III, 1948, pp. 40–48; A. Deroko and S. Radojčić, Otkopavanje Caričina Grada 1947 (Excavations at Caričin Grad 1947), Starinar, N.S., I, 1950, pp. 119–40; D. Mano-Zisi, Iskopavanja na Caričinu Gradu 1953 i 1954 g. (Excavations at Caričin Grad in 1953–54), Starinar, N.S., V–VI, 1954–55, pp. 155–80; C. A. Ralegh Radford, Justiniana Prima (Tzaritzin Grad): A 6th-century City in Southern Serbia, Antiquity, XXVIII, 1954, pp. 15–18; G. Novak, EAA, s.v.

Dečani. The monastery, near Peć, was founded in 1327 by King Stevan Uroš III Dečanski and completed in 1335 under his son Dušan (Dushan). The church (XIII, pl. 48), planned as a cruciform basilica and designed by Vito da Cattaro, a Franciscan monk, may be considered one of the most interesting examples of medieval Serbian architecture, in which Western and Eastern elements are originally synthesized. The exterior is decorated with horizontal polychrome stripes, a range of small arcades under the roof, and a series of buttresses articulating the external masses; the sculptural decoration (XIII, pl. 49), recalling that at Studenica, is notable. The interior is entirely covered by frescoes (1335–40; XIII, pls. 54, 61) of a narrative liveliness that is far removed from the courtly types of Byzantine painting; the frescoes were executed by *pictores graeci*,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

but only one name, Srdj Grešni (Sergius the Sinner), has been found in an inscription. The frescoes of the portico (1350) represent the legend of St. George and illustrate 365 themes, one for each day of the year. The monastery has a rich treasury with valuable icons and illuminated manuscripts.

BIBLIOG. V. Petković, Ciklus slika iz legende Sv. Djordja u Dečanima (The Cycle of Paintings of the St. George Legend at Dečani), Starinar, 3d ser., 1928–30, pp. 7–11; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; D. Mano-Zisi, Dečani, Belgrade, 1934; V. Petković and D. Bošković, Manastir Dečani (The Monastery of Dečani), Belgrade, 1941.

Djurdjevi Stupovi. The monastery, near Novi Pazar, was founded about 1170 by Stefan Nemanja and restored in 1282–83. The church, dedicated to St. George, is one of the oldest in the region; the building, with Byzantine and Romanesque elements, belongs to the Raška school of architecture. The frescoes in the nave (ca. 1168), similar to those at Nerezi (1164), are expressions of the official Greek art of the 12th century, characterized by linearism. At the entrance is a St. George on horseback; the legend of St. George and other cycles painted in the interior have almost completely vanished. In the chapel of King Dragutin there are portraits of members of the Nemanjić family.

BIBLIOG. V. Petković, Eine Kirche des Königs Nemanja, Studien zur Kunst des Osten, Vienna, 1923, pp. 159–67; N. L. Okunev, Stolpy Sv. Georgiya (The Column of St. George), Seminarium Kondakovianum, I, 1927, pp. 205–46; A. Deroko, Les deux églises des environs de Ras, in L'art byzantin chez les Slaves, I, Paris, 1930, pp. 130–46; G. Millet, Le peinture du moyen âge en Yougoslavie, II, Paris, 1957.

Golubac. The fortress of Golubac, on a rocky promontory overlooking the Danube, was the Castrum Columbarum of the Romans. One of the finest fortresses in Serbia, it was rebuilt (1337) by the Hungarians. On the highest rock there is a cylindrical tower on an octagonal base; eight square towers radiate from the central one. This nucleus is surrounded by walls with towers, semicylindrical toward the outside and polygonal toward the interior.

BIBLIOG. A. Deroko, Srednjevekovni gradovi u Srbiji, Crnoj Gori i Makedoniji (Medieval Castles in Serbia, Montenegro and Macedonia), Belgrade, 1950.

Gračanica. The monastery, near Priština, was founded in 1321 by King Milutin. The beautiful five-domed church, which recalls the Byzantine architecture of that period, is a splendid example of Serbo-Byzantine art, which within the Byzantine sphere endeavored to develop original forms. The church, of the double-inscribed-cross type (XIII, FIG. 75), has an apse with a three-light window; an exterior portico was added in the 14th century. The mural paintings that decorate the interior are from 1321–22; those in the narthex are from the late 14th or the early 15th century; and those in the exterior portico are from 1570–71.

BIBLIOG. G. Millet, L'ancien art serbe, Paris, 1919; V. Petković, Neki antički motivi u starom živopisu srpskom (Some Classical Motives in Old Serbian Painting), Strena Buliciana, Zagreb, Split, 1924, pp. 471–75; G. Bosković, Deux églises de Milutin: Staro Nagoričino et Gračanica, in L'art byzantin chez les Slaves, I, Paris, 1930, pp. 195–212; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; S. Radojčić, Gračanica, Skopje, 1938; A. Deroko, Monumentalna i dekorativna arhitektura u srednjevekovnoj Srbiji (Monumental and Decorative Architecture of Medieval Serbia), Belgrade, 1953; A. Grabar, La peinture byzantine, Geneva, 1953; M. Ćorović-Ljubinković, Pećkodečanska ikonopisma skola (The Icon-painting School of Peć-Dečani), Belgrade, 1955.

Kalenić. The monastery, between Kragujevac and Rekovac, was founded about 1413. The church, dedicated to the Virgin, follows the architectural tradition of the Morava Valley area, characterized by rich decoration (XIII, PL. 51); on a cruciform plan, it has a trefoil apse, a central dome, and a domed portico. Alternating courses of stone and bricks and a row of originally polychrome bas-reliefs constitute the main exterior decoration. The frescoes, of the Morava school, show refinement of color and of composition; the subjects reveal different inspirations and show a delicate nostalgic touch. The iconostasis (XIII, PL. 55) is noteworthy.

BIBLIOG. V. Petković, Freske iz crkve u Kaleniću (Frescoes in the Church at Kalenić), Starinar, 2d ser., III, 1908, pp. 121–43; D. Bošković, Kube nad pripratom manastira Kalenića (The Cupola over the Narthex of the Kalenić Monastery), Starinar, 3d ser., V, 1928–30, pp. 156–74; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; P. Popović and V. Petković, Staro Nagoričino, Psača, Kalenić, Belgrade 1933.

Kruševac. Of the 14th-century town, the residence of Prince Lazar (d. 1389), there remain only ruins of the royal buildings and the Lazarica Crkva (Church of St. Stephen), founded about 1380, badly damaged by the Turks, and altered through recent restorations. The domed church, on a cruciform plan with a trefoil apse, is one of the first examples of the Morava school of architecture, of a marked verticalism and with a richly decorated exterior of white and red checkerwork. The sculpture decoration consists of stylized plant and animal motifs. Only two fragments (now in Belgrade, Narodni Muzej) of the frescoes of the church survive.

Near Kruševac stands the Naupara Crkva (first mentioned in 1382), founded by Prince Lazar; it is modeled on the Lazarica.

BIBLIOG. R. Ilić, Kruševac, Kruševac, 1908; M. Vasić, Žiča i Lazarica, Belgrade, 1928; P. Henry, Les principes de l'architecture religieuse serbe et l'école moldave, in L'art byzantin chez les Slaves, II, Paris, 1930, pp. 295–302.

Manasija. The fortified monastery, near Despotovac, was founded by Stevan Lazarević between 1406 and 1418. In the earliest documents it is mentioned as Resava, and it was not until much later that it received its present name. The monastic complex, surrounded by a wide wall and many towers (XIII, PL. 51), has suffered much damage and undergone many changes. The church, however, is fairly well preserved; of the Morava school of architecture, it is on a cruciform plan with a trefoil apse and a large dome supported by cluster piers and contains 15th-century frescoes (XIII, PLS. 54, 62).

BIBLIOG. S. Stanojević, L. Mirković, and D. Bošković, Manastir Manasija (The Monastery of Manasija), Belgrade, 1928; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34.

Mileševa. The monastery, near Prijepolje, was founded by King Vladislav and built about 1235. It is a typical example of 13th-century Serbian architecture of the Raška school (XIII, PL. 48, FIG. 75). The church contains a number of frescoes (XIII, PL. 53). Those in the nave, generally painted on a yellow background, sometimes on gold, with small squares profiled in black, are based on late classical mosaics. The other fresco cycles reveal greater freedom of execution and more marked realism. There are also frescoes (ca. 1250) on the external portico of the church.

BIBLIOG. V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; N. L. Okunev, Mileševo, Byzantinoslavica, VII, 1938, pp. 33–107; G. Millet, La peinture du moyen âge en Yougoslavie, II, Paris, 1957.

Niš (anc. Naissus). Naissus, located southwest of modern Niš, was founded by the Thracians, and under Marcus Aurelius it became a Roman *municipium*. Constantine was born there and, according to the sources, built magnificent buildings and fortifications. The town was destroyed by the Huns in 441 and rebuilt by Justinian; subsequently it was ruled by the Serbs, the Turks, and the Austrians. It was to a great extent rebuilt after World War I. Two Paleo-Christian tombs (4th–5th cent.), one of them with frescoes, are preserved. The Byzantine Citadel, rebuilt in 1690 by the Turks with many towers and bastions, is decorated with Moorish ornamental motifs. The Cele Kula (Tower of the Skulls) dates from 1809. The Narodni Muzej has interesting prehistoric, archaeological, ethnographic, and numismatic collections, including the material found at Naissus (altars, steles, reliefs, mosaics, bronze figures, etc.).

Nearby, at Jagodin Mahala, there are remains of Paleo-Christian churches. At Brzi Brod (anc. Mediana) a Mithraic relief has been found.

BIBLIOG. M. Valtrović, Arhitektonske i dr. starine u Niškom gradu (Architectural Antiquities, etc., in the City of Niš), Starinar, IX, 1892, pp. 34–38; Spomenik Srpska Kraljevska Akad., LXXI, 1931, pp. 102–04, LXXII, 1932, pp. 10–104, LXXV, 1933, pp. 53–55; A. Oršić-Slavetić, Preistoriiska nalazišta u okolini Niša (Prehistoric Sites in the Environs of Niš), Starinar, 3d ser., X–XI, 1935–36, pp. 174–81; Spomenik Srpska Kraljevska Akad., XCVIII, 1941–48, pp. 108–13; M. and D. Garašanin, Arheološka nalazišta u Srbiji (Archaeological Discoveries in Serbia), Belgrade, 1951; D. Jovanović, Neki topografski podaci o starom Nišu (Some Topographical Data on Old Niš). Starinar, N.S., V–VI, 1954–55, pp. 365–73; L. Mirković, Starohrišćanska grobnica u Nišu (The Old Christian Sepulcher at Niš), Starinar, N.S., V–VI, 1954–55, pp. 53–72; L. Mirković, Šta je F. Gerke pisao o Niškoj grobnici (Thus F. Gerke Wrote on the Niš Sepulcher), Glasnik Srpske Akad. Nauka, VII, 1956, pp. 86–87; S. M. Nenadović, Zaštita ranohrišćanske grobnice sa freskama u Nišu (Protection of an Early Christian Tomb with Frescoes at Niš), Saopstenja Zavoda za zaštitu i proučavanje naučno spomenika kulture Narodne Republike Srbije, I, 1956, pp. 142–46; A. Nenadović, Niš za vreme Rimljana i deo njegovog naselja-Medijana (Naissus in Roman Times and a Part of the City Called Mediana), Niš, 1958.

Novi Pazar. The town, founded in the 15th century by the Turks near the ancient town of Raš, was very important up to the 17th century. Of the original Turkish town only an octagonal tower and vestiges of the surrounding walls remain. The Altum-Alem

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Džamija (15th cent.) is a square, domed, stone mosque with an interesting mihrab; in the courtyard is a 19th-century Turko-Balkan building with a polychrome façade and an outside staircase. The Turkish inn (18th cent.) is a one-storied building with an unusual façade, the only extant example in Serbia of the ancient caravanserais.

Nearby are remains of an earlier town. The Church of Sv. Petar, first mentioned in documents from the 10th century but probably built much earlier (8th, perhaps 7th, cent.), is on a central plan with a ribbed dome on pendentives. A circular structure, typical of Dalmatian architecture, encloses the church.

BIBLIOG. V. Petković, Petrova crkva kod Novog Pazara (The Church of Sv. Petar near Novi Pazar), Narodna starina, I, 1922, pp. 119–24.

Peć. The town was formerly the residence of the Serbian patriarchate. The Patrijaršija Manastir, which reflects different artistic traditions, comprised several buildings surrounded by a wall; the churches are well preserved: Sv. Apostola (13th cent.), with remarkable frescoes (12th–14th cent.); Sv. Dimitrije (1317–24), with frescoes by Jovan; and the Bogorodice Odigitrije (1330), on an inscribed-cross plan, with a dome and frescoes inspired by those of the Mount Athos monasteries. In the 15th century the three churches were connected by a large narthex. Some of the sarcophagi of the patriarchs have Gothic decorations, probably executed by Dalmatian artists. There is an important treasury, rich in manuscripts and icons.

BIBLIOG. V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; D. Bošković, Osiguravanje i restoracija crkve manastira Sv. Patrijaršije u Peći (Conservation and Restoration of the Church of the Monastery of the Holy Patriarchate at Peć), Starinar, 3d ser., VIII–IX, 1933, pp. 91–165; A. Deroko, Monumentalna i dekorativna arhitektura u srednjevekovnoj Srbiji (Monumental and Decorative Architecture of Medieval Serbia), Belgrade, 1953.

Prizren. In Roman times Prizren was known as Theranda; in the Middle Ages it was the residence of the Nemanjić family; in the late 14th century it was occupied by Turks and underwent a period of decline. The medieval churches are of great interest, especially the Crkva Sv. Bogodorica Ljeviška (XIII, PL. 48), erected in 1307 by King Milutin and converted into a mosque in the 18th century. On a Greek-cross plan, with five domes and a bell tower, the church is a fine example of Serbo-Byzantine architecture of stone and brick; the interior frescoes, only recently discovered, are noteworthy. The Church of Sv. Spas dates from the 14th century. Between the town and the castle of Višegrad, built by Dubrovnik architects, is the fortified Manastir Sv. Arhandjela Mihaila (1348–52), now in ruins, with a cross-plan church, once embellished with a magnificent mosaic floor.

BIBLIOG. V. Popović, Crkva Svetih Arhandjela u Prizrenu (The Church of the Holy Archangels at Prizren), Starinar, 3d ser., IV, 1926–27, pp. 55–58; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34.

Ravanica. The fortified monastery was founded by Prince Lazar in 1381. The church, destroyed by the Turks in 1445 but rebuilt in the 18th century, is on an inscribed-cross plan (XIII, FIG. 75) with two lateral apses and is surmounted by a large central dome and four smaller ones; the external walls are faced with rich brick decorations (XIII, PLS. 50, 51). The Ravanica frescoes are the earliest example of the Morava school.

BIBLIOG. V. Petković, Manastir Ravanica (The Ravanica Monastery), Belgrade, 1922; P. Henry, Les principes de l'architecture religieuse serbe et l'école moldave, in L'art byzantin chez les Slaves, II, Paris, 1930, pp. 295–302; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; P. Popović, Le mur occidental de l'église de Ravanica, in L'art byzantin chez les Slaves, I, Paris, 1930, pp. 213–16.

Sopočani. Built near the source of the Raška River, the monastery of Sopočani, founded (ca. 1260) by King Stevan Uroš I, is an outstanding example of the Raška school of architecture (XIII, PL. 47). The sculptural decoration of the two Romanesque portals of the church reveals Western influences. The frescoes decorating the church (II, PL. 462; XIII, PL. 53) are in two different styles. Those in the nave (ca. 1260) are among the finest examples of old Serbian painting; the monumental style, with large, vigorous figures, is particularly impressive because of the bright colors and the large size of the compositions. The frescoes of the interior narthex are also in the Serbian monumental style. The paintings of the exterior narthex (mid-14th cent.) are stylistically very similar to those at Dečani. The monastery was devastated in 1689 but was later restored.

BIBLIOG. V. Petković, Neki antički motivi u starom živopisu srpskom (Some Classical Motives in Old Serbian Painting), Strena Buliciana, Zagreb, Split, 1924, pp. 471–75; N. L. Okunev, Sostav rospisi khrama v Sopochanakh (Mural Paintings of the Church at Sopočani), Byzantinoslavica, I, 1929, pp. 118–50; A. Deroko, Les deux églises des environs de Ras, in L'art I, Paris, 1930, pp. 130–46; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; S. Radojčić, Frescoes of Sopočani, Belgrade, 1953; G. Millet, La peinture du moyen âge en Yougoslavie, II, Paris, 1957.

Sremska Mitrovica (anc. Sirmium). The old capital of Pannonia Inferior, founded by the Tauri, became a Roman town under Augustus and a colony in the Flavian period. In A.D. 380 it was occupied by the Goths, and in 582 it was destroyed by the Avars. From the Roman period there are remains of the walls, of the baths, and of houses and palaces. The rich and varied archaeological material (inscriptions, sarcophagi, jewelry, etc.) found before 1914 is kept at the Arheološki Muzej, Zagreb; the later finds are at the local Muzej Srema.

BIBLIOG. Š. Ljubić, Rimske therme u Mitrovici (The Roman Baths of Mitrovica), Vjesnik Hrvatskoga Arheološkoga Društva, VIII, 1886, pp. 1–6; K. Patsch, Zur Geschichte von Sirmium, Strena Buliciana, Zagreb, Split, 1924, pp. 229–32; B. Gavela, Antički spomenici grčko-egipatskog sinkretizma u našoj zemlji (Ancient Monuments of Greco-Egyptian Syncretism in Our Land), Starinar, N.S., V–VI, 1954–55, pp. 43–51; Z. Vinski, Arheološki spomenici velike seobe naroda u Srijemu (Archaeological Monuments of the Great Period of the Migrations of Peoples in Sirmium), Situla: Glasnik Narodnega Muz. v Ljubljani, II, 1957, pp. 1–79; A. Milosević and O. Milutinović, Zaštitna arheološka iskopavanja u Sremskoj Mitrovici (Archaeological Excavations at Sremska Mitrovica), Gradja za proučavanje spomenika kulture Vojvodine, II, 1958, pp. 5–45; B. Vasilic, Roman Baths in Northern Yugoslavia, Archaeology, XI, 1958, p. 130. See also the series of articles by Š. Ljubić, J. Brunšmid, etc., in Vjesnik Hrvatskoga Arheol. Društva, II, 1880 ff.

Studenica. Founded during the Nemanjić dynasty, the monastery of Studenica is one of the most important in Serbia; the buildings date from 1100 to 1300, and have been much altered in the course of the centuries. Eastern and Western components are here perfectly blended. The Church of Sv. Bogorodice (of the Virgin) may be considered an archetype of the Raška school of architecture; built about 1190, it originally had a single nave with side vestibules and an apse with a three-light window (XIII, PL. 47, FIG. 75); the side chapels and narthex were added in 1230. The church has rich exterior sculpture (XIII, PL. 49); inside there is a cycle of frescoes (ca. 1208–09). The Kraljeva Crkva (King's Church; ca. 1314), dedicated to St. Anne and St. Joachim, has remarkable 14th-century frescoes (XIII, PL. 54), interesting both because of their quality and because they reflect the life of that period. The Church of Sv. Nikolaja (13th cent.), showing influences from Dalmatian architecture, contains frescoes with inscriptions by local artists. The monastery has a rich treasury, with manuscripts, vestments, an iconostasis, and the silver coffin of King Stevan Prvovenčani.

BIBLIOG. V. Petković, Manastir Studenica (The Monastery of Studenica), Belgrade, 1924; S. M. Nenadović, Studenički problemi (Problems of Studenica), Belgrade, 1957.

Viminacium (mod. Kostolac). The Roman town and legionaries' camp in Moesia Superior stood on the site of a previous Neolithic settlement that was later inhabited by the Celts. The pre-Roman and Roman settlements stood on the slopes of a hill; the camp was on the plain; and to the south of the camp stood the village of Canabae, which became a *municipium* under Hadrian and a colony under Marcus Antonius Gordianus III. There were two necropolises, one beside the village and the other east of the camp. In the 3d century of our era money was coined at Viminacium. Viminacium was destroyed by Attila in 441 and rebuilt by Justinian. Excavations have revealed the network of streets with sewers, several houses, and two casting furnaces.

BIBLIOG. M. Vasić, Kolonija Viminacium, Starinar, XII, 1895, pp. 1–61; M. Vasić, Nekolike grobne konstrukcije iz Viminacijuma (Several Sepulchral Constructions at Viminacium), Starinar, 2d ser., II, 1907, pp. 66–98; G. Orlov, Emisije viminaciske monete XI godine lokalne ere (The Issuing of Money at Viminacium in the Year XI of the Local Era), Glasnik Srpske Akad. Nauka, VII, 1956, pp. 90–91, Starinar, N.S., VII–VIII, 1956–57, pp. 281–82; G. Orlov, Teritorija bivšeg Viminacijuma kao numizmatičko nalazište (The Territory of Viminacium as a Source of Roman Money), Glasnik Srpske Akad. Nauka, IX, 1957, pp. 63–64; B. Saria, RE, s.v. Viminacium, no. 2.

Montenegro (*Crna Gora*). Bar. The busy modern port of Bar has grown up a few miles from Stari Bar (Old Bar), a medieval town with an Oriental aspect whose monuments were destroyed in 1878 by Montenegrin artillery. There are remains of the 11th-century town gate, of the Cathedral, of the small Gothic Church of Sv. Katarine, and the large Gothic Church of Sv. Marko, with a rectangular apse and a façade overlaid with white and red stones. The latter

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

was transformed into a mosque (Orta Džamija) after the arrival of the Turks; the brightly colored frescoes bear Latin inscriptions.

Bibliog. J. Marković, Dukljansko-barska mitropolija (The Archdiocese of Duklja-Bar), Zagreb, 1902; F. Šišić, Letopis Popa Dukljanina (Chronicle of Pop Dukljanin), Zagreb, Belgrade, 1928; D. Bošković, Izveštaj i kratke beleške sa putovanja (Communication and Short Notes on a Voyage), Starinar, 3d ser., VI, 1931, pp. 140–89.

Cetinje. Montenegro's former capital, the town, founded in 1485 by Ivan Crnojević, was built around the monastery (1484; rebuilt in the 17th and 18th cent.) and the castle (1482). Outstanding buildings include the Vlaska Crkva, the 15th-century Orthodox church; the Biljarda, a 19th-century palace named after the billiard room, now containing the Etnografski Muzej and the Njegošev Muzej; and the royal palace, now housing the Drzavni Muzej and the Umjetnička Galerija.

Bibliog. V. Petković, Pregled crkvenih spomenika kroz povesnicu srpskog naroda (Religious Monuments Through the History of the Serbian People), Belgrade, 1950.

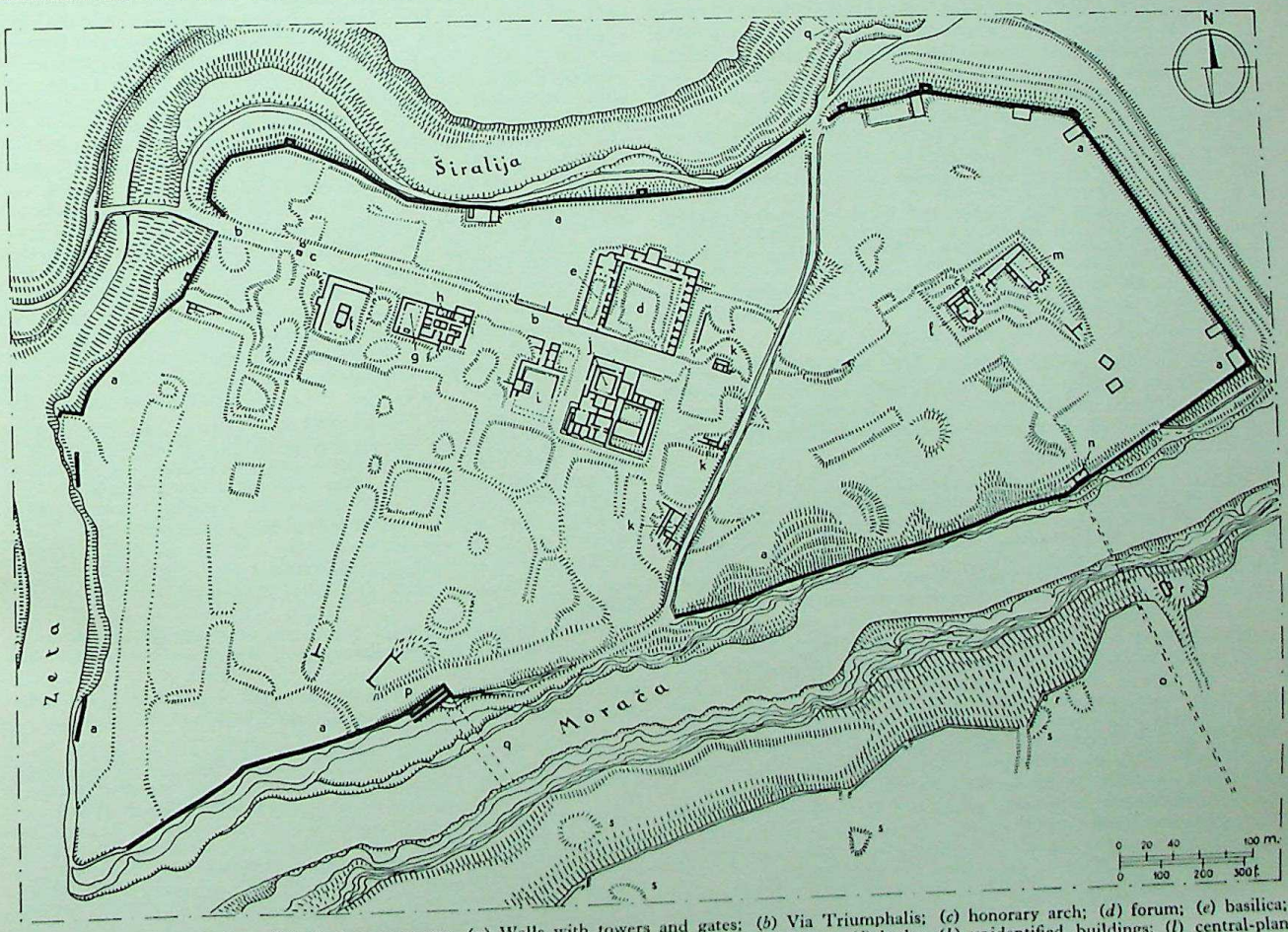
Dioclea (mod. Duklja). Located near Titograd, the town was founded by the Flavians as a fortress, then became a Roman *municipium*, and was destroyed at the end of the 6th century. The town was surrounded by walls (largely preserved), with towers and an honorary arch near the north gate. Excavations have revealed the forum, surrounded on three sides by public buildings, one of which is a basilica with a single nave adorned with statues; the baths; the Temple of Diana; another temple probably dedicated to Caesar; living quarters; and many Roman inscriptions. There are remains of Paleo-Christian buildings.

Bibliog. R. Munro, W. C. F. Anderson, and F. Haverfield, On the Roman Town of Doclea in Montenegro, Archaeologia, LV, 1896, pp. 33–92; P. Sticotti, Die römische Stadt Doclea in Montenegro (Schriften der Balkankommission, Ant. Abt., VI), Vienna, 1913; A. Mayer, Novonadjeni natpisi u Duklji i oko nje (Inscriptions Recently Found at Duklja and Nearby), Vjesnik za arheol. i h. dalmatinsku, L, 1928–29, pp. 65–73; A. Mišura, Duklja i prošlogodišnji arheološki radovi (Duklja and the Archaeological Work of the Past Year), Glasnik Srpske Akad. Nauka, VII, 1956, p. 84; D. Vučković-Todorović, Iskopavanje antičkih objekata u Duklji (Excavations of Ancient Objects at Duklja), Glasnik Srpske Akad. Nauka, VII, 1956, pp. 83–84; G. Novak, EAA, s.v. Doclea.

Kotor (It. Cattaro). Founded in the early Middle Ages, the town was under Byzantine rule until the 12th century; it became part of the kingdom of Serbia and subsequently, from 1378 to 1797 (except for short periods of Turkish domination), it was ruled by Venice. The Church of Sv. Tripun (formerly the cathedral), consecrated in 1166, an example of Benedictine Romanesque style, was altered in the 14th century (three-light window, frescoes in Byzantine style), destroyed and rebuilt in the 17th century (bell tower and portal), and restored at the beginning of the 20th century; inside are a Paleo-Christian baptismal font, a Maiestas Domini (ca. 1440) by Johann of Basel, and a Crucifixion by Jacopo Bassano. The Church of St. Lukas (12th cent.), a typical Paleo-Croatian structure, has a vaulted nave and a dome and contains an iconostasis. The collegiate church (the so-called "Church of S. Maria Infunara"; 13th cent.), an example of local architecture, contains a painted wood and stucco crucifix (15th cent.) and the sarcophagus of the Blessed Ozana, by Augustinčić. The Church of St. Clara has a fine baroque altar (1704–08) by Francesco Cabianca. The Venetian influence is evident in many public and private structures: the clock tower (17th cent.), the Grgurin palace (now housing the Pomorski Muzej and a collection of weapons and costumes), the Pima palace (16th cent.; now the State Archives), and the Beskuća palace (now the Law Courts).

Nearby is Dobrota, a village famous for its delicate lace and for the white fabrics used for folk costumes with white net embroidery (costumes exhibited in the Church of Sv. Stasija).

Bibliog. G. Gelcich, Le lettere e le arti alle Bocche di Cattaro, Venice, 1879; I. Stjepčević, Vodja po Kotoru (Guide to Kotor), Kotor, 1926; P.



Dioclea, archaeological plan. Principal monuments: (*a*) Walls with towers and gates; (*b*) Via Triumphalis; (*c*) honorary arch; (*d*) forum; (*e*) basilica; (*f*) temple probably dedicated to Caesar; (*g*) small temple; (*h*) dwellings; (*i*) Temple of Diana; (*j*) baths; (*k*) unidentified buildings; (*l*) central-plan church (mausoleum?); (*m*) Paleo-Christian basilica; (*n*) building possibly used as a *castellum aquarum*; (*o*) aqueduct; (*p*) building probably used in defending the bridge; (*q*) possible remains of the bridge; (*r*) funerary buildings(?); (*s*) tombs (*from Sticotti, 1913*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Butorac, Boka Kotorska od najstarijih vremena do Nemanjića (The Straits of Kotor from the Most Ancient Times to Nemanjić), Split, 1927; I. Stjepčević, Katedrala Sv. Tripuna u Kotoru (The Cathedral of Sv. Tripun at Kotor), Split, 1938; C. Fisković, O umjetnickim spomenicima grada Kotora (On the Artistic Monuments of the City of Kotor), Spomenik Srpska Akad. Nauka, CIII, 1953, pp. 71–101; M. Zloković, Gradjanska arhitektura u Boki Kotorskoj (Civil Architecture of the Straits of Kotor), Spomenik Srpska Akad. Nauka, CIII, 1953, pp. 131–46; K. Prijatelj, Umjetnost XVII i XVIII stoljeća u Dalmaciji (17th- and 18th-century Art in Dalmatia), Zagreb, 1956.

Perast. The town has a markedly baroque aspect. Noteworthy are the Bujović (1693), Balović, Smaki, and Zmajević palaces; the Catholic Cathedral, in late Renaissance and baroque styles; and the building (16th cent.) of the former maritime school. On an artificial island off the town stands the Church of Sv. Bogorodice Škrpjelo, containing paintings with scenes from the life of the Virgin by Trifun Kokoljie (Cocoglia; 1661–1713).

Bibliog. S. Vulović, Gospa od Skrpjela (Our Lady of Škrpjelo), Zadar, 1887; F. Viskovich, Storia di Perasto, Trieste, 1898; L. Karaman, Pregled umjetnosti u Dalmaciji (Compendium of Art in Dalmatia), Zagreb, 1952; K. Prijatelj, Slikar Tripe Kokolja (The Painter Trifun Kokoljie), Rad Jugoslavenske Akad. Znanosti i Umjetnosti, 287, 1952, pp. 5–26; K. Prijatelj, Umjetnost XVII i XVIII stoljeća u Dalmaciji (17th- and 18th-century Art in Dalmatia), Zagreb, 1956.

Titograd (formerly Podgorica). Capital of the People's Republic of Montenegro. The city has been almost completely rebuilt after World War II. There are ruins of the castle and of the 16th-century Sahat Kula.

In the mountainous region to the south the circular skirt of the women's costume, of the Minoan type, is one of the oldest survivals of its kind in Europe.

Bibliog. F. Nopcsa, Beiträge zur Vorgeschichte und Ethnologie Nordalbaniens, Wissenschaftliche Mitt. aus Bosnien und Herzegowina, XII, 1912, pp. 168–254.

Ulcinj (It. Dulcigno). The town has an Oriental aspect. Important monuments are the castle, the Kula Balšić, a mosque with Gothic capitals and a Latin inscription, and the remains of a richly decorated Gothic basilica.

Nearby are the remains of medieval Svač, with the ruins of the Gothic Cathedral, erected by Queen Jelena, the wife of Uroš I. On the shore of Lake Skadar (Scutari) are ruins of the monastery and of the Church of Sv. Bogorodice Krainska (11th cent.), built by Queen Teodora-Kosara, with a Romanesque bell tower.

Bibliog. T. Ippen, Alte Kirchen und Kirchenruinen in Albanien, Wissenschaftliche Mitt. aus Bosnien und Herzegowina, VII, 1900, pp. 231–42; A. Degrand, Souvenirs de la Haute Albanie, Paris, 1901; J. Stojanović-Maksimović, O srednjevekovnoj skulpturi na Crnogorskom primorju (The Medieval Sculpture of the Montenegro Littoral), Istoriski glasnik, 1951, 3–4, pp. 71–86; D. Bošković, Ulcinj, Starinar, N.S., VII–VIII, 1956–57, pp. 416–17.

Macedonia (*Makedonija*). Andrejaš. The town was founded by Andrejaš, a son of King Vukašin. The church has three apses and a polygonal cloister dome on pendentives. The frescoes, by Jovan from Zrze, tend toward archaism and recall paintings of the mid-13th century.

Bibliog. V. Petković, Jedna srpska slikarska škola XIV v. (A Serbian School of Painting of the 14th Cent.), Glasnik Skopskog Naučnog Društva, III, 1928, pp. 51–66; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; N. Mavrodinov', Ednokorabnaya kr'stovidnata tsr'kva (A Church with a Cruciform Nave), Sofia, 1931; R. Ljubinković, Srpski crkveni spomenici u klisuri reke Treske (Serbian Ecclesiastical Monuments on the Cliffs of the Treska River), Skopje, 1940.

Bitolj (anc. Heraclea Lyncestis). The ancient town, near modern Bitolj, was on the Aegnatian Way; originally on the hill, it was moved by the Romans to the plain and made a *municipium*. There are remains of the surrounding walls, from the late-antique period, as well as of houses, a three-aisled basilica, and a palace with a well-preserved mosaic; fragments of statues, altars, and inscriptions have been found. Bitolj reached a particular splendor under the Turks; from this period are the Hajdargazi Džamija (15th cent.), of stone and brick; the Evi Džamija (16th cent.); and the Bezistan, a covered Turkish market (17th cent.). There are important remains of a Paleo-Christian basilica and of the Byzantine fortress on the acropolis. The Church of Sv. Dimitri dates from the 14th century.

The Naroden Muzej na Bitolkiot Kraj contains a rich collection of folk costumes, which in this region have numerous, picturesque variations. The most famous type, that of the village of Smiljevo, is of densely woven fabrics with scarlet embroidery, abundant fringes, and metal necklaces. The Morihovo area, along the Crna River, preserves archaic forms of houses and clothing. The area around Bitolj is famous for the manufacturing of rugs; the woven and fulled blankets (*jambolije*) are particularly well known.

Bibliog. S. V. Radovanović, Narodna nosnja u Marijovu (Folk Costumes at Marijovo), Glasnik Skopskog Naučnog Društva, XIV, 1935, pp. 107–79; M. Grbić, Ausgrabungen in Heraclea Lyncestis bei Bitolj in Südserbien, Bericht über den VI. Int. Kong. für Archäologie,, Berlin, 1939, pp. 180–81; T. A. Robev, Bitolja, Makedonski pregled, XIII, 1942, pp. 53–90; G. Novak and A. Di Vita, EAA, s.v. Eraclea Lincestide.

Lesnovo. The monastery, dedicated to the Archangel Michael, has a church of noble proportions, with two domes (one over the nave, the other over the narthex). The present church was built in the mid-14th century on the foundations of an 11th-century church. The frescoes in the presbytery belong to the local tradition of 14th-century monastic art, characterized by a strong dramatic quality and an expressionistic style obtained by contrasting bright colors. The frescoes in the narthex reflect the classicist tendency of the first decades of the 14th century.

Bibliog. S. Simić, Lesnovski manastir Sv. Oca Gavrila (The Monastery of the Holy Father Gabriel at Lesnovo), Belgrade, 1913; N. L. Okunev, Lesnovo, in L'art byzantin chez les Slaves, II, Paris, 1930, pp. 222–63; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34.

Matejič. The monastery, dedicated to the Virgin, has one of the largest churches in northern Macedonia; built for Queen Jelena and her son, Tsar Stevan Uroš V, it has five domes and frescoes (ca. 1350; badly preserved) stylistically similar to miniatures.

Bibliog. N. L. Okunev, Crkva Svete Bogorodice: Mateič (The Church of the Mother of God: Matejič), Glasnik Skopskog Naučnog Društva, VII–VIII, 1930, pp. 89–113; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; A. Deroko, Monumentalna i dekorativna arhitektura u srednjevekovnoj Srbiji (Monumental and Decorative Architecture of Medieval Serbia), Belgrade, 1953.

Ohrid (anc. Lychnidus; It. Ochrida). The town, on the lake of the same name, was first mentioned in a document from the last quarter of the 3d century B.C. Lychnidus became an important Roman town on the Aegnatian Way. In the 3d century of our era it became a bishopric, and from the 9th to the 11th century it was a center of Slavic civilization under SS. Clement and Naum, who founded the first monasteries, and under the Macedonian Tsar Samuel (976–1014). The Roman-Byzantine fortress, later used by Samuel, preserves the original 18 towers and the 4 gates. The Cathedral of Sv. Sofija, built in the 11th century on the ruins of a 5th-century basilica, has three aisles, three apses, and a two-storied narthex that opens to the outside through large arcades and is decorated with frescoes from various periods (11th–14th cent.; XIII, PL. 53); from the 15th to the 19th century it was a Turkish mosque and was subsequently completely restored. The Church of Sv. Klimenta (recently restored), on an inscribed Greek-cross plan with three aisles and a dome, is decorated with frescoes from 1296 (by Mihailo and Eutihije) and from 1365, and contains a wooden episcopal throne (14th cent.) inlaid with silver. Near the church is the Kapela Sv. Dimitrija, with frescoes from the same period. The Church of Sv. Konstantina i Jelene (14th cent.) has 15th-century additions. Under the foundations of the Imaret Džamija the remains of the Monastery of Sv. Pantelejmon (9th cent.) have been discovered. Other important churches are Sv. Nikola Bolnički (14th cent.), with interesting frescoes; Sv. Bogorodica Bolnička (14th cent.), with a fine iconostasis and frescoes; Sv. Bogorodica Čelnica; and Sv. Jovan Bogoslov (14th cent.). From the Turkish period are the clock tower and the Ali Paša Džamija. The Naroden Muzej contains ethnographic, prehistoric, and medieval collections, including some fine icons (11th–14th cent.) from Sv. Klimenta.

In the neighborhood, on the shores of Lake Ohrid, stand the Manastir Bogorodice od Zahuma (1361), with fine frescoes, and the Manastir Sv. Nauma (10th cent.), with a church on a Greek-cross plan. Near Lake Prespa stands the church of Sv. Ahil, from Samuel's reign; at Kurbinovo is the 12th-century Church of Sv. Nikola.

Bibliog. N. P. Kondakov, Makedoniya, St. Petersburg, 1909; I. Snegarov', Istoriya na okhridskata arkhiepiskopiya (History of the Archbishopric of Ohrid), Sofia, 1924; M. Zloković, Stare crkve u oblastima Prespe i Ohrida (Old Churches in the Prespa and Ohrid Regions), Starinar, 3d ser., III, 1924–25, pp. 115–49; N. L. Okunev, Fragments de peintures de l'église Sainte-Sophie d'Ohrida, Mél. Charles Diehl, II, Paris, 1930, pp. 117–31; V. Petković, La peinture serbe du moyen âge, 2 vols., Belgrade, 1930–34; D. Mazalić, Nešto o ikonama iz crkve Sv. Klimenta u Ohrida (Concerning the Icons of the Church of St. Clement in Ohrid), Starinar, 3d ser., XIV, 1939, pp. 124–28; F. Forlati, C. Brandi, and Y. Froidevaux, Sainte-Sophie d'Ochrida, Paris, 1953; A. Grabar, La peinture byzantine, Geneva, 1953 (Eng. trans., Byzantine Painting, Geneva, 1953); V. Lahtov, Novi natpisi od Ohrid i Ohridsko (New Inscriptions from Ohrid and Its Vicinity), Živa antika, VI, 1956, pp. 166–71; G. Millet, La peinture du

CC-0. Agamnigad Government Archaeological Preservation Foundation, Chandigarh

moyen âge en Yougoslavie, II, Paris, 1957; G. Bošković and K. Tomovski, L'architecture médiévale d'Ochrid, Musée nat. d'Ohrid: Recueil de travaux, Ohrid, 1961, pp. 71–100; R. Ljubinković and M. Ljubinković-Ćorović, La peinture médiévale à Ochrid, Musée nat. d'Ohrid: Recueil de travaux, Ohrid, 1961, pp. 101–48; Fluss, RE, s.v. Lychnidus, no. 1.

Prilep (anc. Prilapon). Once the residence of King Vukašin and his son Marko, the present town dates back to a Turkish settlement at Markova Varoš, the medieval suburb that grew up around the Markovi Kale, a castle built into the rocks. Between the castle and the suburb King Vukašin and Marko founded the Monastery of Arhandjela Mihaila in the 14th century. The Church of Sv. Dimitrija is from the 14th century; Sv. Nikola, with noteworthy frescoes, dates from the end of the 13th century.

Nearby are the medieval monastery of Treskavac, restored in the 14th century by Stevan Uroš III, and the Monastery of Sv. Spas, near Krušovo.

BIBLIOG. A. Deroko, Markovi Kuli, Starinar, N.S., V–VI, 1954–55, pp. 83–104; O. Bihalji-Merin, Fresken und Ikonen: Mittelalterliche Kunst in Serbien und Makedonien, Munich, 1958.

Skopje (or Skoplje; anc. Scupi). The capital of the People's Republic of Macedonia. The original town, a few miles from the present one, was occupied by the Romans and became a colony (Flavia Aelia Scupi); it was destroyed by an earthquake in A.D. 518. Excavations have revealed the baths and have yielded many inscriptions, fragments of statues, figures, reliefs, and altars. The fortress built by Justinian (altered several times) is preserved, and there are remains of the aqueduct and later medieval fortifications. In 1393 the town was taken by the Turks, who chose it as a main base for their military operations in the Balkans; thus it acquired its Oriental aspect. The Church of Sv. Spas (after 1689), architecturally not very interesting, contains an important iconostasis (1829) by Makrijan Frčkovski and the Filipovski brothers, all natives of Galičnik, and many sculptures and wood carvings. From the Turkish period are many mosques — Murat Džamija (1430), with a minaret; Isa Beg Džamija (15th cent.); Jaja Džamija (1503); and Mustafa Džamija (15th cent.) — and the Kuršumli Han (the former caravanserai; 15th cent.) with a large courtyard surrounded by two ranges of arcades (XIII, FIG. 82); the Hammam Daut Paša (15th cent.; XIII, FIG. 82), now housing the Umetnička Galerija (contemporary art and medieval icons); the Hammam Ćivte; the Suli Han; and the Sahat Kula. Of particular interest are the Etnološki Muzej and the Arheološki Muzej, which contains material found at Scupi and in the surrounding dstrict and examples of medieval art.

Nearby are the Monastery of Marko, founded in 1389 by King Vukašin and Marko, with frescoes; that of Sv. Andrija (1389), with frescoes by Jovan from Zrze; and that of Sv. Nikita, near Čučer, founded (14th cent.) by King Milutin, with frescoes (by Mihailo and Eutihije) with interesting iconographic motifs.

In the Skopska Crna Gora area the folk costume consists of a tunic embroidered with black wool with ornaments in Paleo-Christian style. The costume of the Vardar plain has multicolored embroidery that recalls Byzantine fabrics.

BIBLIOG. Spomenik Srpska Kraljevska Akad., LXXXI, 1901, pp. 202–16; G. Elezović, Turski spomenici u Skoplju (Turkish Monuments in Skopje), Glasnik Skopskog Naučnog Društva, I, 1925, pp. 135–76; N. Vulić, Teritorija rimskog Skoplja (The Territory of Roman Skopje), Glasnik Skopskog Naučnog Društva, I, 1925, pp. 1–4; S. Raicević, Narodna nosnja u Skopskoj Crnoj Gori (Folk Costumes in the Skopska Crna Gora), Glasnik Skopskog Naučnog Društva, VII–VIII, 1930, pp. 347–68; T. Vukanović, Narodni vez u Skopskoj kotlini (Folk Embroidery in the Skopje Valley), Umetnički pregled, II, 1939, pp. 214–15; Spomenik Srpska Akad. Nauka, XCVIII, 1941–48, pp. 212–30; A. Grabar, La peinture byzantine, Geneva, 1953 (Eng. trans., Byzantine Painting, Geneva, 1953); G. Millet, La peinture du moyen âge en Yougoslavie, II, Paris, 1957; O. Bihalji-Merin, Fresken und Ikonen: Mittelalterliche Kunst in Serbien und Makedonien, Munich, 1958.

Stobi. Near modern Gradsko are the ruins of the ancient city of Stobi, the most important group of ruins in Macedonia. In the 3d century B.C. Stobi belonged to Macedonia; in the 2d century B.C. it became a Roman *municipium* and later a colony. In the 3d century of our era Christianity reached Stobi, which was sacked by Theodoric the Great in 479 and destroyed by an earthquake in 518. Excavations have revealed the theater, erected in the 2d century B.C. and altered in the late imperial period, and the baths; Greek and Latin inscriptions, statues, and mosaics have been found. The so-called "Partenius Palace" has rooms decorated with fine mosaics and sculptures. There are remains of an episcopal basilica (late 5th cent.), built with material taken from the theater and adorned with many splendid capitals and plutei; a funerary basilica; and another basilica with an octagonal baptistery. The rich archaeological material found at Stobi is kept in museums at Belgrade, Skopje, and Gradsko.

BIBLIOG. R. Egger, Die städtische Kirche in Stobi, ÖJh, XXIV, 1928, pp. 42–87; B. Saria and R. Egger, Istraživanja u Stobima (Researches at Stobi), Glasnik Skopskog Naučnog Društva, V, 1929, pp. 1–44; D. Mano-Zisi, Fresko u Stobima (The Fresco at Stobi), Starinar, 3d ser., VIII–IX, 1933–34, pp. 244–48; D. Mano-Zisi, Iskopavanja u Stobima (Excavations at Stobi), Starinar, 3d ser., X–XI, 1935–36, pp. 145–70; V. Petković, Antičke skulpture u Stobima (Ancient Sculpture at Stobi), Starinar, 3d ser., XII, 1937, pp. 12–35; B. Saria, Das Theater von Stobi, AAnz, 1938, cols. 81–148; J. Petković, U Stobima danas (On the Ruins of Stobi Today), Sarajevo, 1942; E. Kitzinger, A Survey of the Early Christian Town of Stobi, Dumbarton Oaks Pap., III, 1946, pp. 81–161 (bibliog.); O. Lisičar, Našata makedonska antika (Our Macedonian Antiquity), Sovremenost, IV, 1954, pp. 583–621; E. Dyggve, Le théâtre mixte du Bas-Empire d'après le théâtre de Stobi et les diptyques consulaires, RA, 1958, 1, pp. 137–58, 2, pp. 20–30.

Strumica. In the village of Vodoča, near Strumica, stands the impressive church dedicated to St. Leontius (10th–11th cent.), on a cross plan with a dome and a portico flanked by two towers. The monastery of Veljuša (1080) has 11th-century frescoes.

BIBLIOG. V. Petković, Stari srpski spomenici u Južnoj Srbiji (Ancient Serbian Monuments in Southern Serbia), Belgrade, 1924; M. Ristić, Strumica, Brastvo, XIX, 1925, pp. 113–51; K. Miyatev', Ts'rkavata pri selo Vodoča (The Church near the Village of Vodoča), Sofia, 1926; G. Millet, La peinture du moyen âge en Yougoslavie, II, Paris, 1957.

Grga NOVAK, Maja MILETIĆ

Illustrations: 7 figs. in text.

ZAMBIA. See RHODESIA, ZAMBIA, AND MALAWI.

ZEUXIS (Ζευξις). Greek painter active during the last 25 years of the 5th century B.C. His name is a contraction of Zeuxippos (Ζευξιππος). His birthplace is recorded as Herakleia, in all probability the city in Lucania, although some scholars believe it to have been Heraclea Pontica (mod. Eregli, Turkey); the Sicilian city of the same name is to be excluded as a possibility. Closely connected with the question of his native city is that of the era in which he lived. Pliny (*Naturalis historia*, XXXV, XXXVI, 61) places the high point of Zeuxis' career in the last year of the 95th Olympiad, that is, in 397 B.C., but at the same time he warns that other writers had dated it to the 89th Olympiad, between 424 and 421. In 424 Plato (*Protagoras*, 318, B) recorded as a recent fact the young painter's arrival in Athens. Perhaps Zeuxis had arrived the year before, as Aristophanes' reference in 425 (*The Acharnians*, 991 ff.) to the painting of Eros crowned with roses that was executed for the temple of Aphrodite would seem to indicate. He was still in Athens in 422 when he participated with Sokrates in the Symposium of Xenophon (*Symposium*, VI, 63). His presence in Akragas (Agrigento), Sicily, must be dated to before 406, the year in which the city was sacked by the Carthaginians. Zeuxis' presence at the court of King Arkelaos of Macedonia must have been within the fifteen-year period of the King's reign (413–399). In 394 Isokrates (*Antidosis*, 2) wrote of Zeuxis as a painter already dead and referred to his work in historical perspective. These isolated chronological facts seem to validate Pliny's dating: the 89th-Olympiad date would refer to Zeuxis' artistic peak and Pliny's own dating of 397 to the end of the painter's activity, if not to the actual year of his death. Zeuxis' birth is thus to be placed between 450 and 445 B.C. Thus he would have been about fifteen years old in 432 when the Tarantines founded Herakleia. Born in Taras (Taranto) or in its territory, he would therefore have been one of the first inhabitants of the new Lucanian city.

At about the age of twenty, he went to Athens, where he mmediately became famous. The indication of Eusebius, who in his *Chronicon* (III) dates Zeuxis to the 78th Olympiad, is to be corrected by a simple inversion of the figures to the 87th, the years of the artist's maturity and greatest activity.

Zeuxis' teachers are known to have been Demophilos of Himera and Neseus of Thasos, but nothing is known of their work. Sources record many of his own works and sometimes describe them, but usually in such imprecise and general terms as to make critical observation impossible.

His first work seems to have been the above-mentioned painting of Eros crowned with roses; his last, a painting of an

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

old woman, which, according to the anecdote related by Festus (s.v. *Pictor*, 228 L), caused the painter to laugh himself to death. There are no dates, except for the very general ones already mentioned, that would make possible a precise chronology of the rest of his works.

His most famous work is a painting of Helen, executed for the Heraion of Kroton and commissioned either by the Crotonians (Cicero, *De inventione*, II, 1, 13) or by the Agrigentines (Pliny, *Naturalis historia*, XXXV, xxxvi, 64); it was later displayed in Rome in the Porticoes of Phillipus (Pliny), and a copy, perhaps also done by Zeuxis, remained in Athens (Eustathios, *Commentari ad Homeri Iliadem*, par. 868, 30–40). There is a rich collection of anecdotes concerning its execution; these refer to Zeuxis' models, chosen from among the most beautiful girls of Kroton, to the high evaluation that the artist himself gave of his work (Valerius Maximus, *Opera*, III, vii, 3), and to the earnings it brought him (Aelianus, *Varia historia*, IV, 12).

Another well-known work, the *Family of Centaurs* (Lucian, *Zeuxis*, 3–8), was admired by his contemporaries more for the originality of the subject than for the artistic treatment; this aroused the painter's ire. The original was lost near Cape Malea when the ship that was carrying it to Rome at the order of Sulla was wrecked. A copy of it remained in Athens.

Zeuxis also executed a painting with various figures, or several paintings that can be considered a series, depicting Alkmene, Zeus enthroned, and the infant Herakles strangling the serpents. He gave a painting of Pan to King Arkelaos as a gift; the subjects of other paintings executed by him in the palace of the Macedonian ruler are not known.

His painting of Marsyas was taken to Rome, where it was placed in the Temple of Concord. For Ephesos he painted a scene representing Menelaos offering a libation. It is perhaps this painting to which the anecdote about Megabyzos refers: he expressed opinions on Zeuxis' art in the manner of a dilettante critic and was booed by his students.

Except for their titles or indications of the technique and material with which they were executed, no detailed information exists concerning other works, among which are a painting of Boreas, or Triton; the *Athlete* (pl. 453); a still life with grapes; the *Boy with Grapes*; some white monochromes; and some terra-cotta works executed for the city of Ambrakia.

Quintilian in his *Institutes* (XII, x, 4–5) related that Zeuxis "luminum umbrarumque invenisse rationem" ("seems to have discovered the method of representing light and shade") and that "plus membris corporis dedit" ("he emphasized the limbs of the human body"). This same criticism of Zeuxis' preoccupation with body volumes, which resulted in heads and joints that were too large and were out of proportion, is repeated by Pliny (*Naturalis historia*, XXXV, xxxvi, 64), who was apparently echoing Xenokrates, an admirer of Lysippos (q.v.), who, for that very reason, preferred slender figures with small heads. Zeuxis seems to have had his own artistic canons, which included an accentuation of volumes, which were rendered with the same painterly technique (i.e., chiaroscuro) used by his contemporary, Apollodorus. Aristotle later accused Zeuxis of lacking "ethos" (*Poetics*, vi, 25–30), indicating that the painter was concerned with the problem of the relationship of the forms to the chiaroscuro values of their volumes, rather than the problem of the psychology of the figures (cf. IV, col. 119).

The frequent mention of Zeuxis' works in ancient sources finds an exact correspondence in citations in Renaissance and Humanist literature of Zeuxis as a magnificent painter. In both ancient and modern sources, however, the brief, disconnected fragments of anecdotes about the painter are the only basis for a critical judgment of his work.

Bibliog. Overbeck, SQ, pp. 1647–91; A. Reinach, Recueil Milliet, Paris, 1922, pp. 199–256; Pfuhl, II, p. 674 f.; O. Brendel, Zeuxis JdI, 1932, p. 191; A. De Capitani d'Arzago, La "Grande Pittura" greca, Milan, 1945, p. 46 f.; S. Ferri, Plinio il Vecchio, Rome, 1946, p. 194 f.; ThB, s.v.; W. Kraiker, Das Kentaurenbild des Zeuxis, Wpr, 1950, p. 106; A. J. B. Wace, The Cloaks of Zeuxis and Demetrius, ÖJh, XXXIX, 1952, p. 111 f.; Rumpf, MZ, p. 126 f.; W. Lepik-Kopaczyńska, Zeuxis aus Heraklea, Helikon, I, 1961, pp. 379–426.

Michelangelo Cagiano de Azevedo

Illustration: pl. 453.

ZIMMERMANN, Dominikus. South German architect and stuccoist (b. Gaispoint, near Wessobrunn, 1685; d. Wies, 1766). In his architectural commissions Dominikus was often assisted by his elder brother Johann Baptist Zimmermann (1680–1758), a stuccoworker and outstanding fresco painter (VI, pl. 148; XIII, pl. 292).

The Abbey of Wessobrunn was one of the most important centers in Europe for the training of stuccoists, and here both Zimmermanns served their apprenticeship. Dominikus was apparently trained by Johann Schmuzer, an architect and leading member of a family of stuccoworkers. He must have been familiar with Schmuzer's ornate pilgrimage church at Vilgertshofen (1687–92), only 12 mi. northwest of Wessobrunn, as in many respects Vilgertshofen was the germ of Zimmermann's design for his last great work, the Wies pilgrimage church (Wieskirche).

Zimmermann's early career was limited to stuccowork, and in that capacity he assisted the architect J. J. Herkomer at the Abbey of St. Magnus in Füssen from 1701 to about 1708. Immediately afterward he went to Fishingen in northern Switzerland, where he executed six altars in stucco and scagliola for the abbey. From 1710 to 1712 he worked at the Abbey of Buxheim in Swabia. Zimmermann settled in Landsberg, on the Bavarian-Swabian border, in 1716, where he eventually became the mayor. His first work (1718) at Landsberg was the stucco ornamentation for the façade and upper floor of the Rathaus.

Zimmermann was a prolific architect. Among his notable buildings are the convent church at Maria Mödingen (near Dillingen, 1718), the Ursuline (now Dominican) convent church at Landsberg (begun 1725), the parish church next to the Abbey of Buxheim (1725–27), the convent church at Siessen (near Biberach, 1726–33), the pilgrimage church at Günzburg near Ulm, 1735–40), the small but elaborate Johanniskirche at Landsberg (1741–52), and the delicately ornate library of the Abbey of Schussenried (near Steinhausen, 1754–ca. 1760).

In a much more ambitious enterprise he competed unsuccessfully for the plan of a new church for the Benedictine abbey at Ottobeuren. The competition, held in 1732, was won by Johann Michael Fischer.

Zimmermann's two major commissions, which are his masterpieces, are the pilgrimage churches at Steinhausen (1727–33; VI, pl. 153; XII, pl. 167) and Wies (1745–54; XII, pl. 165), in which Johann Baptist Zimmermann assisted in the decoration (XII, pl. 161). Both buildings have an oval plan (see VI, col. 188, and XII, cols. 266–67), and the interiors are filled with brilliant light and sprightly movement. Although the decoration of the Wieskirche is more pronouncedly rococo than it is at the earlier church in Steinhausen, the lushness of the Wieskirche has an unexpectedly baroque appearance despite its mid-18th-century date.

As an architect Zimmermann is important for his contribution to church design on the oval plan. His importance as a decorator lies in the fact that he adapted the French rococo style to the heavier taste of southern Germany.

Bibliog. A. Feulner, Bayerisches Rokoko, Munich, 1923; G. Barthel, Barockkirchen in Altbayern und Schwaben, Berlin, 1933; N. Lieb, Barockkirchen zwischen Donau und Alpen, Munich, 1953 (bibliog.); E. Hempel, Baroque Art and Architecture in Central Europe, Harmondsworth, 1965.

S. Lane Faison, Jr.

ZOOMORPHIC AND PLANT REPRESENTATIONS. The antiquity and diffusion of animal and plant representations are the result of man's natural disposition to select his subjects from the world around him and especially from those which occur most frequently and which are most easily reduced to schematic drawings. The growth and movement that characterize living nature, with its implicit capacity for benefit and harm, have always stimulated the artistic imagination. The animal and plant image has been conceived in extremely varied ways: as a complement in compositions with human figures and in landscape scenes, as an isolated symbolic motif, and as an ornamental element.

CC-0. Panini Kanya Maha Vidyalaya Collection. An eGangotri Initiative. Digital Preservation Foundation, Chandigarh

SUMMARY. Introduction (col. 937). Historical survey (col. 940): *Origins and early manifestations; Pre-Columbian America; The ancient world: a. Animal representations; b. Plant representations; The East and Eurasia: a. Animal representations; b. Plant representations; European protohistoric and barbarian art; The Byzantine era; The Middle Ages in Europe; The modern era; Plant and animal forms in architecture.*

INTRODUCTION. Animal and plant representations have been of primary, and sometimes exclusive, interest in only a few cultures that have been bound to particular religious and symbolistic concepts and iconographic traditions as in paleolithic art, that of Minoan Crete, steppe art, barbarian art, and Islamic art. Even when these representations have been subordinated to representations of the human figure (as in the great historical civilizations) they have appeared in a noteworthy quantity of artistic production as secondary or background elements, and have given rise to specific types; in Oriental, Hellenistic, and baroque art, some painters of still life specialized exclusively in flowers or animals. In ornamentation (q.v.), nature has often been made to conform to geometric forms, at times so schematized as to be completely unrecognizable, as on Chinese bronzes (III, PL. 228) and in early medieval (X, PL. 438) and Islamic interlacing (VIII, PL. 155). Plant and animal representations have lent themselves to alternatives of naturalism and abstraction (see GEOMETRIC STYLE; MIMESIS). Although zoomorphic and plant representations have appeared widely in art, they are almost never the exclusive protagonists of a work of art, unless a motive such as aniconism (see IMAGES AND ICONOCLASM) sustains them.

Animals appeared in portraits commissioned by Renaissance courts and gentlemen from even the greatest artists (e.g., Titian; PL. 100); they appeared in works such as the *Still Life* of Jacopo de' Barbari (XIII, PL. 199); still others were inserted as anecdotal details in paintings by Mantegna and Bellini (II, PL. 264). Sometimes animal portraits were commissioned to record and preserve the likenesses of such zoological curiosities as the giraffe, the panther, the hippopotamus, and other exotic specimens, which were almost always doomed as a result of their removal from their native habitat. Both exotic and domestic animals appeared in ancient art (e.g., the animals represented with their pet names, as in Etruscan tombs and in mosaics depicting Roman *venationes*).

From the time that the human figure became predominant in art, animal and plant representations generally have been regarded as ornamental and subordinate and nonessential elements. In other cases they are distorted in an antinaturalistic sense, taking on monstrous or geometric forms.

Eugenio BATTISTI

A tendency to identify the image with reality (as in representations of the capture and slaughter of wild animals, of prime interest to hunting peoples from the Stone Age on, or in pictorial evocations of fecundity of game and domestic livestock, the concern of hunting and herding peoples) gave rise to mimetic fidelity in reproduction. The most evocative manifestation of this tendency, and the most striking for its antiquity, is that of the naturalistic art of the Paleolithic era (see PREHISTORY); however, it is expressed also in naturalistic and schematic form in the figural traditions of successive phases of hunting cultures, for example, in Africa (see PALEO-AFRICAN CULTURES), as well as in more evolved livestock-rearing cultures of the Eurasian world (see ASIATIC PROTOHISTORY; STEPPE CULTURES).

Plant symbolism is of a predominantly paradisaic nature. The foremost example of this is the symbol of the "tree of life," used extensively in ancient Eastern art. In the Byzantine world, flowers were identified with stars, as in the vault of the so-called "Mausoleum of Galla Placidia" in Ravenna (X, PL. 179).

An important example of animal symbolism is the hunt; its iconography preserves traces of the religious ritual with which it was associated in the Near East (animal representations in that area are strongly stylized and are of the same type that appears on armor, trophies, and coats of arms). Stereotyped animal images are also used as symbols of the zodiac. Animal symbolism developed a rich repertory during the Middle Ages in the bestiaries. The animal as a symbol appeared in magic literature and in the writings of the alchemists (for a modern psychoanalytical interpretation of the problem, cf. C. G. Jung, *Psychologie und Alchemie*, Zurich, 1944), and even in devotional literature. In the vault of the Cathedral of Xanten (12th cent.) is illustrated a series of symbols in which a Biblical personage is related to an animal and to a virtue (e.g., Adam–Serpent–Knowledge; Abraham–Cock–Intellect; Moses–Ant–Counsel; Elias–Lion–Strength; Solomon–Dog–Science; Samuel–Dove–Pity (R. Tuve, *Notes on the Virtues and Vices*, Warburg, 1964, XXVII, pp. 60–61). The allegories and personifications collected in Renaissance treatises on emblematology, even though they omit the greater part of the medieval symbology, constitute a monumental sum of all the preceding forms. In Cesare Ripa's treatise, *Iconologia* (Rome, 1593), about two hundred animals are designated as symbols (III, PL. 202).

Plant representations as symbols are introduced into artistic decoration according to subtle choices motivated by devotional and religious motivations or by exclusively formal and literary ones. They often substitute the divine image or a historical scene, as in the depiction of cherries and carnations in icons representing the Madonna and Child, in which their red hue serves as an allusion to the Passion of Christ.

Just as the study of the human body was of fundamental importance to Greek art, the observation of animals was a prime element in the development of the art of the hunting peoples and in more advanced civilizations, such as the Roman, in which the hunt was a sport (IX, PL. 3).

Also noteworthy is the curiosity aroused by the unusual and exotic species returned as spoils of war, such as those of the expedition of the Egyptian queen Hatshepsut in Punt, Phyrrus's elephants, and so on. Lastly, the Roman games with wild beasts in the circus or amphitheater contributed to the formation of a tradition of analytical figural study, in some cases directed toward individual "portraits" of single, famous beasts, of which outstanding documentation is to be had principally in the African mosaics. A modern parallel exists in the studies of bulls that are occasioned by the widespread passion for the bullfights in Spain, principally in the work of Goya (VI, PL. 402).

More recent developments in the study of animal and plant forms have been in the sphere of scientific observation, from the medieval bestiaries and herbaria to modern zoological and botanical studies (see SCIENTIFIC AND MECHANICAL WORKS; XII, PLS. 474, 479, 480).

Animal and plant representations as decorative motifs may be used either for their symbolic or narrative significance or solely for their form and value as ornament (see ORNAMENTATION). Plant representations (branches, flowers, leaves) are more widely used in decoration because of their natural and harmonious geometry, the affinity of their essential structures, their greater ease of observation and imitation, and their repetitive and rhythmic forms.

The problem of the stylization and schematization of plant and animal forms in decoration is related to, but differs from, that of the establishment of decorative forms. Some of the processes by which the naturalistic image is given an abstract form are not at all related to a decorative function, as in prehistoric and subprehistoric rock art and in those representations, of semantic significance, that constituted the origins of writing (see CALLIGRAPHY AND EPIGRAPHY). Animal and plant decoration of the Near East (PL. 469; X, PLS. 450, 452) and that of the Greek and Roman world generally retained a high degree of naturalism, as in the frieze of acanthus spirals on the Ara Pacis of Augustus (VII, PL. 211).

* *

Although animal and plant representations inevitably obey canons of proportion developed or accepted by individual artistic cultures, there are rare occurrences of studies of animals that went beyond anecdotal record and suggested objective norms of proportion. Once the intuitive genius that inspired

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

the animal representations of the Paleolithic era had been lost, the most striking esthetic effects (except for such unusual examples of almost photographic realism as those achieved by means of direct casts by Palissy and Buontalenti, among others) were attained in representations of animals in motion. In his *Trattato delle perfette proporzioni* (Florence, 1567) Vincenzo Danti discusses the difficulty of establishing norms for the correct representation of animals "since it is not necessary merely to know how to compose the limbs of a horse, for example, with proportion, but also to know how to represent them in the act of walking, running, jumping, or similar activities" (P. Barocchi, *Trattati d'Arte*, Bari, 1960, p. 254). Danti recommends anatomic studies of at least three species: "quadrupeds, birds, and fish," since, although their subphyla may differ in form, "the knowledge of one may very easily give information about the other."

Studies of equine anatomy, sometimes sculptured, were used in teaching and in designing the equestrian monuments to which Donatello had given importance. L. B. Alberti dedicated a brief treatise, *De equo animante* (ca. 1438), to the study of the proportions of the horse, preliminary to the execution of an equestrian monument to the father of Lionello d'Este, his patron at that time. Also in this tradition were the drawings that Leonardo da Vinci, a great animal anatomist, executed for purely scientific and technical purposes (e.g., his studies of the flight of birds). Renaissance treatment of animals was, instead, oriented toward the anecdotal. Representations of various animals were used increasingly to enrich paintings, illuminations, and sculptural ornamentation, as geographical discoveries and commercial and diplomatic exchanges gradually introduced direct knowledge of such animals to Europe. Artists of the time sought to create accurate figural records of these animals, depicting them in what was often excessive detail. Dürer's engraving of a rhinoceros (1515; Br. Mus.) is perhaps the most evocative example of a vast series of illustrations collected in the *Historia animalium* by C. Gesner (1551–87) and later in Aldrovandi's study of natural history (1599). Animal subjects had occasionally been introduced into monumental art (e.g., the mosaics with scenes from Genesis in the atrium of S. Marco in Venice) and were used in a noteworthy manner in the early-16th-century fresco decorations by Giovanni da Udine in Palazzo Baldassini in Rome, executed after careful study of the living examples of exotic fauna owned by Leo X. In these frescoes Giovanni applied a theme that he had originally used in aviaries and gardens to an ornamental sphere. This interest in the animal world later gave impetus to the compilation of vast encyclopedias that provided models for artists, especially for representations of exotic fauna; in these works, however, emphasis was on the descriptive rather than the scientific.

The first systematic studies of plant forms were compiled in herbaria. These had their prototype in the work of Dioscorides and generally reflect the artistic styles of the period during which they were executed, ranging from the naturalism of early works to the stylization of later ones, such as those reflecting International Gothic styles (VI, PL. 315). Botanical studies of the 18th and 19th centuries were the sources of the ornamental motifs that characterized the Art Nouveau style (PL. 473; I, PL. 469).

Artistic interest in plant forms was greatest during the late Gothic period, at the time of the Van Eycks (V, PL. 215; L. Behling, *Die Pflanze in der mittelalterliche Tafelmalerei*, Weimar, 1957), and during the Renaissance. From 1550 onward, modern herbaria by famous painters began to appear. Perhaps the best example of these is the Medici collection of water colors (Uffizi, Gab. delle stampe e dei disegni), dating from about 1570; the work of Giacomo Ligozzi, it is much superior to that less graphic one begun a few years before by the Bolognese Aldrovandi. (For a discussion of 16th-century botanical studies, see C. Nissen, *Geschichte und Bibliographie der Botanischen Buch-Illustration*, Stuttgart, 1960; and E. Battisti, *L'Antirinascimento*, Milan, 1962, pp. 254–77.) The Medici herbarium for the first time turned attention upon plant diseases and their causes, aspects of which are stressed by Caravaggio in his still lifes. Later, decorative interests once more prevailed and there was a lack of attention to realistic representation.

Plant forms continue to inspire such modern artists as Paul Klee (*Theory of Form and Representation*, Milan, 1959), in whose work emerges the reason for this interest: the search for new elements in structural systems. The Bauhaus fostered other studies on the scientific relation of colors, partly inspired by the "tones" of the four seasons. More recently, a relation has been established between the rules which determine the development and enlargement of leaves and those which refer to an efficient town-planning system, in which the residential and industrial centers on level terrain are disposed on a network of equilateral triangles, interconnected by high-speed traffic arteries that are reminiscent of the veining of leaves.

Eugenio BATTISTI

HISTORICAL SURVEY. *Origins and early manifestations.* Figural art began in the Paleolithic era with representations of animals, and since then it has continued to find in them a source of inexhaustible inspiration on all continents and at all levels of civilization. Any lessening of interest has never been either total or simultaneous among diverse cultures; it first occurred when the initial urban societies were set up in protohistoric and historic times, that is, with the incipient emancipation of man from nature. However, in primitive cultures — preurban and preliterate — the animal has remained the focus of artistic themes up to the present.

For the majority of the hunter-gatherer groups, subsistence — the primary factor in economic and social life — was based no less on the plant world than the animal one. With the transition to a sedentary life and with the development of agriculture, man's dependence on plant life became primary and sometimes almost exclusive. However, an art inspired exclusively or even prevalently by plant forms is not known to have existed in any part of the world at any high cultural level. In nature, then, it was not the contemplation of the heavens or the landscape that caught man's early attention and stimulated him to esthetic activity, but it was, rather, the observation of living creatures of sky, water, and earth, because, like himself, these creatures were endowed with life and movement. Man early arrived at an intimate knowledge of the behavior, habits, and anatomy of those animals which he hunted or observed. Another factor in this dominance of the animal in early art is the fact that artistic activities were carried on by men — the hunters, those who knew animals — while the women, who in primitive times had no artistic interest whatsoever, tended to the cultivation of plants.

The animal art of the hunting peoples has a relatively uniform aspect, even though it is widely diffused in space and time; it is characterized by such elements as a prevalence of two-dimensional representations over sculpturally conceived forms, an almost universal realism, a perspective treatment of figures, respect for their natural proportions, a preponderance of group compositions, and a preference for subjects in motion (PL. 454). This art of the hunting peoples is unique in that it may properly be described as "primitive"; unfortunately its significance remains obscure, both in its prehistoric forms and in its manifestations in historical times, as, for example, in the artistic production of the Bushmen (X, PL. 239) and that of primitive Australian peoples (see AUSTRALIAN CULTURES), which was not discovered and studied until the terminal phases of its decline (19th cent.). It is now generally acknowledged, however, that a purely magical explanation of the origins of this art is not satisfactory, even though it may, in several cases, be plausible. In 1879, T. Hahn, collecting the last evidence of Bushman wall paintings *in situ*, noted that the hunters dedicated themselves to this art for the esthetic enjoyment they derived from it; other modern critics agree (see PALEO-AFRICAN CULTURES), adding that the naturalism of this essentially zoomorphic art does not exclude elements of caricature and humor and a freely imaginative treatment.

The recurrence of the above-mentioned stylistic characteristics can in certain cases be explained by the persistence of

CC-0. Kashmir Research Institute. Digitized by eGangotri Digital Preservation Foundation, Chandigarh

millenary traditions, as is indicated by parallels that exist between the production of European paleolithic art and that of ancient as well as recent Paleo-African art.

Historical links are doubtful, if not nonexistent, in a comparison of the petroglyphs from Australia and the paintings on hides of the Plains Indians (X, PL. 363). Notwithstanding geographical distance and chronological, cultural, and technical differences, the same general stylistic characteristics can be found again in this art. This leads to the conclusion that the realism and dynamism implicit in animal forms are bound less to any persistent tradition than to the cultural forms and ideals of the hunt.

With the exception of the chattel art of the Central Asian steppe and the rock art of the Saharan nomads, who had settled down to shepherding but remained heirs to the great hunting tradition, the livestock-rearing peoples of Asia and Africa did not achieve the excellence in animal representation that might be expected from those whose entire existence is bound even more closely to the animal world than that of the hunting peoples.

Animal wall art of the shepherding peoples is known from the far reaches of Siberia (the limestone ravines of the Suruktakh-khaya in Yakutsh, with representations of reindeer, and the gorges of Zaraut-Sai in Uzbekistan, with engravings of animals dating for the most part from the Bronze Age). Evident in these engravings is that unusual technique which has been called the X-ray style and which is well known in Australian art (II, PL. 61; IX, PL. 242) and in the art of the northwest American coast. Here, too, as in the Sahara, traditions in design seem to be linked to an older art of the hunting peoples, with no apparent break in style.

In the most recent artistic production of the Siberian livestock raisers, the representations of reindeer, birds, and conifers, such as those on the shamanic drums of the Teleuts and the Tartars (IV, PL. 262), or the representations of the twelve beasts of the zodiac (of Chinese derivation) are characterized by a puerile oversimplification, as also are some of the rare sculptural works (Goldian amulets in the shape of tigers, leopards, and bears; outlines of mythical animals sewn on the shamans' costumes or placed on their tombs). Floral and plant ornamentation on clothing lacked originality and was inspired to a great extent by Chinese models. There is an almost total lack of figural expression in the shepherding cultures of Africa: Cushite, Nilotic, and Bantu. This is especially evident in the Bantu cultures; although animal representations appear in the art of the peoples of the humid forests and savannahs of Angola and the Congo (where there is no extensive livestock-rearing), they are unknown in the art of the people (mainly shepherds) of the eastern and southern areas, where with only occasional exceptions, such as those in the art of the Barotse (II, PLS. 131, 232), the only attempts to reproduce the animal form are in clay figures modeled by children (Zulu, Nguni, and Nuer, among others).

In contrast, animal representations are a fundamental element in the art of the agricultural peoples on every continent and at all levels of civilization (PL. 455). They are executed in a variety of materials and techniques — in basketwork (see BASKETRY), featherwork (q.v.), and fabrics, in wooden sculpture, ceramics, and metalwork (qq.v.).

Undoubtedly form and function are closely related in many cases in which animal models are used in the creation of objects. The profile of a hornbill with its great curved beak inspired the outline of the Bakota (Gabon) throwing knife; the parrot is the model of the shape of the "whistling" jar from Chimu (Peru; I, PL. 200). The Micronesian coconut scraper is in the stylized form of a quadruped (IX, PL. 544); among the Swahili the same type of implement is the "goat" (*mbuzi*). The fishermen of the Solomon Islands carve wooden floats for their nets in the form of sea birds resting on the waves; the head of a crocodile moving on the surface of the water suggests the prow decoration for the pirogues of the Papuans of Sepik. The relationship between the animal and the object sometimes achieves a degree of immediacy. Noteworthy in this regard are the *mayurī* from India in the shape of a peacock (X, PL. 229) and the wooden kava bowl from Fiji in the shape of a tortoise (Seattle, Thomas Burke Memorial, Washington State Mus.).

Animal motifs have been reworked in successive centuries, imperceptibly making the transition from realism to extreme abstraction. Among the most obvious of such transformations are those of the bird and the serpent in the art of Trobriand, New Guinea, in which what were initially realistic representations later became obscure and complex designs (cf. IX, FIG. 705). Another is the gradual simplification of the loom pulleys of the Guro weavers into the form of an elephant head. The antelope form atop the headpieces of the Bambara dancers undergoes a progressive change: body and legs are deemphasized, while horn and mane assume exaggerated proportions (XIII, PLS. 307, 309). In the final stages of this process, the arched line of the neck has been transformed into four distinct concentric curves, a device that is an effective complement to the dynamics of the dance (XIII, PL. 329).

The free interpretation of animal motifs can go ever further, ending in the rigid abstraction of geometric ornamentation. In the decorations of the Carajá tribe of the Amazon region, a series of superimposed broken lines represents the bat in flight, the cross denotes a variety of lizard, and the rhombus with indented sides represents a wild bees' nest. In the art of the Bakairi Indians, a wavy line with alternating dark spots represents the anaconda with its spotted scales, and a lozenge with blackened corners represents the *mereshu* fish.

Some scholars have attributed an animal origin to many of the geometric motifs of Australian art, which are derived not so much from the over-all aspect of the entire animal as from isolated parts of its body or from the pattern of its coat or scales; an Australian aborigine has told scholars that he drew inspiration from living creatures — serpents, iguanas, and insect larvae — but not from trees or plants.

Early artisans, so improperly called "primitive," transcended mere animal representation, creating highly original therianthropic and polyzoomorphic works. In the *malanggan* and the *uli* of New Ireland (IX, PLS. 447, 448) the human figure is associated with that of the animal in a unitary vision (see MELANESIAN CULTURES); similar intermingling is to be found in some vertical sculptural compositions by the Haida Indians, the Tsimshian, and other peoples of the northwest American coast (X, PLS. 353, 356). It is especially evident in the prow decorations of the canoes of the Papuans of Humboldt Bay, in which ichthyomorphic and anthropomorphic elements are fused. In the bird-men of Easter Island, the image of the god Meke Meke, and some Efik and Ibibio masks (VII, PL. 132), theriantropism achieved a dramatic level never equaled in the mythology of the classical world. The most impressive compositions are perhaps the masks of the Lo society of the Senufo culture, in which a large antelope head with pointed horns bears boar tusks and has a gaping mouth showing carnivore's teeth; the brow of the mask is surmounted by a hornbill in the act of devouring a chameleon (XIII, PL. 304).

In many African and American works, however, the animal figure is humanized and reveals its original nature only through details which may elude the inexpert observer. A Bambara mask inspired by the hyena has the appearance of a stylized human face, in which only the long ears reveal its theriomorphic nature. The head of the falcon in Tsimshian art has entirely human features, in spite of its hooked nose, and even has a human mouth and teeth (X, PL. 224; XIII, PL. 3).

The great numbers of animal representations in middle- and lower-level cultures throughout the world are still, for the most part, subject to various and changing interpretations.

The representation of a lizard on the spoons of the women of the Kran and other Guinean peoples is a fertility symbol. That of the bear on the *iku bashui* of the Ainu refers to the worship and sacrifice of the plantigrade by northeastern Asian peoples. The sculpture of an otter on a Tlingit rattle indicates its magic properties. Bird forms appear frequently in the iconography of the North American Indian: the bird's mysterious power of flight is associated with the wind, thunder, and storm. The Navahos believe that four white swans in-

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

habit the four corners of the sky, controlling the winds. The Hurons consider the dove the guardian of the soul. Among the Prairie Indians the eagle was a sacred animal; it was offered to the gods, and its feathers are the symbol of the victorious warrior. However, all these meanings are arbitrary. Like other birds (woodpecker, heron, parrot, owl) the dove and swan are regarded by the Amerinds as bearers of omens, and their flight is studied for the purpose of prophecies. The bear is essentially a heraldic animal for the Tlingit; for the Gilyak it is the intermediary between men and the supernatural "masters" (XIII, PL. 30).

In what is still a classic study of primitive Melanesian designs, G. Reichardt has identified a single, dubious instance of plant inspiration among many hundreds of subjects in which the animal element predominates. This is a serrated motif carved on a wooden cup from Tami, in which a soft treatment of the serration is reminiscent of a leaf form (Reichardt, *Melanesian Design*, New York, 1933, I, p. 42, II, pl. LXXI–208).

Another isolated instance of plant motifs in primitive art appears on a drum, probably from the Torres Strait area of New Guinea (Cambridge, Eng., Univ. Mus. of Archaeol. and Ethnol.; R. Firth, *Art and Life in New Guinea*, London, New York, 1936, p. 88). The motif represents a tree, or branch, and consists of a few lines — twelve leaves in all — and is a secondary element in the over-all decoration: below it a cassowary is shown pecking at some fruit fallen from the tree.

Plant representations appear sporadically also in Australian art (a single, impressive example is to be found in the collection of bark paintings from Arnhemland published by K. Kupka, *Un art à l'état brut, Peintures et sculptures aborigènes d'Australie*, Lausanne, 1962, p. 40) and in Polynesian art, in what seem to be palm-leaf or corolla motifs on tapa (XIII, PLS. 386, 388).

When three-dimensional representations predominate in art, there is an almost complete lack of plant representations. This is particularly true in African art, with few exceptions (e.g., the gold weights of the Akan tribes, made in the shape of kola nuts), and applies not only to sculptures in wood or metal but also to ceramics, basketry, and wall painting. Among the exceptions, the bas-reliefs of Abomey (VII, PL. 116) are noteworthy; this is a gallery of curious allegories in which some trees in semi-naturalistic form appear among various anthropomorphic and zoomorphic figures. On the walls of the palace of Agadja there is a representation of a roka tree, the mythical tree from which the primordial couple is supposed to have descended. Another perhaps represents King Ghezo in the form of a palm, in an allusion to his statement that "the sheep do not eat the leaves of the palm-tree," or, in another interpretation, the painting may refer to a statement of King Agonglo, "I am the *agonde* (pineapple) against which lightning can do nothing." In any case the culture of the Guinean Negroes cannot be considered "primitive." Generally, any attempt to translate plant forms into artistic elements, even for merely decorative purposes — as in the flower motifs on embossed brass objects of the Nupe people of Nigeria; the designs on bamboo executed by the islanders of Timor or Borneo; the rosettes and plant arabesques on the pottery of the Caduveo (Chaco; XIII, PL. 104) — occurs in cultures that have attained a superior degree of civilization. These attempts are most successful in Asian art of such peripheral areas as Siberia and Indonesia. An esthetic appreciation of plants and flowers — unlike that of animals — seems to emerge almost exclusively in urban civilizations; outside of these it is usually the result of migration and diffusion.

Pre-Columbian America. The highly developed civilizations of Pre-Columbian America (see ANDEAN PROTOHISTORY; MIDDLE AMERICAN PROTOHISTORY) drew extensively on the very rich animal themes (and to a lesser extent on those of plants) that constitute the common patrimony of the indigenous traditions of the New World; they elaborated them and occasionally achieved a great measure of originality. Especially in the Mayan civilization, new elements were added, the result of incipient urbanism, a strong theocratic orientation, and the stratification of society into classes that offered new opportunities to the ranks of specialized craftsmen.

The extremely rich figural repertory is undoubtedly the result of the importance that animal images had in mythological and astral symbolism, in religious ritual, in costumes, and in other aspects of everyday life — to an extent that had its only parallel in Egypt. Aztec warriors fought dressed in the skins of wild beasts, with their faces visible between the animal's jaws (X, PLS. 33, 42, 55; this motif was also used in the stone sculptures). An illustration of the *Antiquedades Mexicanas* (Mexico City, 1892) shows a warrior surmounted by the figure of a great heron with wings widespread; similar images appear in B. de Sahagún's work (16th cent.; *Historia general de las cosas de Nueva España*, Mexico, 1938) and in other sources; golden disks with superb heads of wild beasts in full relief decorated the lips of important personages. Eagles and jaguars, emblems of warrior aristocracy among the Toltecs, were adopted by the Aztecs as opposing symbols of heaven and earth, light and darkness, the sun and the morning star (X, PL. 46). In Aztec reliefs in wood they were used on either side of the solar symbol and also appeared together in the impressive bas-reliefs of the monolithic temple of Malinalco (1501–15), where they could be seen by the worshipers through a portal in the shape of the throat of a dragon, a monster associated with the world of caverns. The rabbit was a lunar symbol and appears in the Borgia Codex (Vat. Borg. Mss. I) in the act of being swallowed by a feathered serpent. The hummingbird was emblematic of Tonatiuh, the sun god. An eloquent synthesis of Aztec animal symbolism appears on the stone cist in Hamburg (Mus. für Völkerkunde). The cover bears the image of the feathered serpent (the sky); on the inner base of the cist is a carving of an alligator (the earth); the lower part of the side is decorated with an elaborate allegory featuring the toad (which symbolizes the underworld).

Of the new elements referred to above, the most outstanding is undoubtedly the use of series of theriomorphic motifs as integral parts of architecture. This ingenious expedient was adopted on a monumental scale in the Teotihuacán culture (cf. the monumental decoration on the temple of Quetzalcoatl; X, PL. 6) and frequently recurs throughout Toltec and Aztec art in the symmetrical series of large, terrifying serpent masks flanking walls and stairways. These elements were transmitted, through Toltec influence, to the Mayan ceremonial centers. At Chichén Itzá (Yucatán), the mythical serpent with gaping jaws is not only the guardian of the entrance to the sacred building, but is also a supporting structure in the building (Temple of the Jaguars; X, PL. 37). Further south in Mayan territory appear gigantic stone heads of birds (e.g., that of a parrot at Copan, Honduras). The most impressive examples of this use of animal motifs in sacred architecture remain those created by the Aztecs. Although the famous temple of Tenochtitlán has been destroyed, an indirect idea of its structure may be had from the restored pyramid of Tenayuca, where the feathered serpent appears both in a series of large grimacing masks (X, PL. 41) and in freestanding monumental sculptural works, in which the curled-up body is in masonry and the head is carved out of stone.

Similar solutions are lacking in the much more sober monumental architecture of the Andean area (see ANDEAN PROTOHISTORY). However, imaginary and semirealistic animal figures, as well as stylized motifs that may represent vine shoots, were used in mural decoration (in *tapial*) in coastal Peru, to judge by that which is preserved at Chan-Chan (I, PL. 161).

Wall painting (practically unknown in other American cultures, except for the Pueblo cultures) and goldwork were the other media in which Mexican and Mayan artists gave the full measure of their artistic ability in animal and plant representation. Little evidence of mural decoration survives, but there is enough to document the skill with which Middle American artists rendered animals and plants in a realistic manner, in scenes of everyday life, devoid of all symbolism. An example of this is the fresco of the Tlaloc paradise at Teotihuacán, where the blessed ones run and dance on green meadows beside the waters, among fruit trees and flowering bushes, while varicolored birds and enormous butterflies fly about (IV, PL. 465). Another such representation is that of the fish and

CC-0. Kurukshetra University. Digitized by eGangotri. Digitized by Digital Preservation Foundation, Chandigarh

birds in a fresco in the Temple of the Warriors at Chichén Itzá, where different conventions and colors are used to express the differences between the various trees that shade the Yucatán village represented. [Elsewhere in Mayan art the tree, too, is changed; the most interesting example is to be found in a vase painting from Yucatán (S. G. Morely, *The Ancient Maya*, London, 1946) in which the trunk has human facial elements and the branches extend like arms and hands.] Middle American goldwork (X, PL. 40), which has produced some of the most graceful and precious animal representations of all time, is relatively recent and appeared among the Mayas in postclassical times.

In areas other than those mentioned above plant and animal representations in art remained on a high level of achievement in the more highly developed urban and national civilizations, but remained bound to early traditions among the peoples to the north and south of these areas of civilization. This is true of sculpture in wood, stone, and shell; to a lesser extent it is true of basketry and featherwork, and, above all, of ceramics. In the classical Middle American periods even the products of the most common and popular types of art — especially among the Maya and Zapotec peoples — had elements of great refinement and elaborate symbolism, but they could not surpass in quality the clay figures, such as the frogs and birds of Tlatilco, produced by some of the more archaic civilizations or by the people of the outlying western provinces; here, even in later centuries, artisans continued to produce an extremely varied and imaginative series of animal figurines, among which the fat little dogs of the Colima are noteworthy examples (PL. 457; X, PL. 28).

In contrast are the ceramic styles from the valleys along the Pacific coast of Peru. These repeat the votive and funerary purpose and the rich repertory of animal and plant subjects of their models, which they equal in vigorous sculptural quality (pottery from Mochica Chimù; cf. I, PLS. 178, 196, 200) and clearly surpass in the originality of their naturalistic or stylized motifs and in their taste for color (Mochica pottery with painted motifs, Nazca; I, PLS. 188, 194, 197).

Vinigi L. GROTTANELLI

The ancient world: *a. Animal representations.* Among the Egyptian peoples of the predynastic period there was probably a totemic animal cult, which, after the political unification of the country, became part of the national pantheon. The bull Apis, the cow goddess Hathor, the monkey god (and ibis) Thoth (patron of wisdom and the scribes), the falcon god Horus, the vulture goddess, the crocodile god, the hippopotamus goddess Taurt, the scarab (incarnation of the sun), and the *uraeus* (the cobra; emblem of judgment and death) were depicted in art. Some gods gained a human body while retaining an animal head, as, for example, the cat goddess, the lion-headed goddess, and the god of the dead, Anubis, who has the head of a jackal (IV, PL. 464). Egyptian artists also showed animals in scenes of the hunt, of war, of agriculture; these works were painted, engraved, or carved, or were in the form of small statues (PL. 456; IV, PLS. 326, 328, 335). The lion was an important subject. Today this animal has disappeared from Egypt and it was certainly more numerous in prehistory than at the time of the Pharaohs, when it was considered the king of the beasts. It would seem that the Egyptians sometimes succeeded in domesticating lions, as may be deduced from the fact that members of the Ramessides dynasty took lions into battle with them. In combat scenes the lion is depicted throwing himself on the enemy (IV, PL. 322); this is sometimes interpreted as an allegory referring to the Pharaoh himself. The lions of Amenhotep III from Soleb (ca. 1400 B.C.; Br. Mus.) are outstanding among Egyptian animal figures. The great royal lion hunts are to be considered ritual acts rather than pure cynegetics. Even beyond this, the lion was the subject of an entire theological and cosmological theory devolved by the priests, in which the sphinx figure was conceived of as a lion with the head of a Pharaoh (IV, PL. 354). The best-known animal figure in Egyptian art is, in fact, the Great Sphinx (IV, PL. 333).

The most ancient lion in art — a well-fed lion, crouched and grimacing — is a Sumerian stone statue dating from before the 3d millennium B.C. Archaic Babylonian art tends to treat the animal figure as a decorative element, mainly because the Mesopotamian peoples represented their gods either in human form or by means of symbols. Decorative animal motifs appear in art from the time of the first Sumerian dynasty, in monuments at Warka, Khafaje, Kish, and Ur. The decorations are in the round, in relief, or are inlaid (IX, PL. 475). The decoration of the sound box of the harp from Ur (I, PL. 505) is a glorification of the animal kingdom. The silver vase of King Entemena, from Telloh (I, PL. 504) is decorated with graffiti of animals — stags, ibexes, lions, and lion-headed eagles — elegantly stylized and composed in groups that circle the body of the vase. The cylinder seals of the kings of Akkad are engraved with scenes of the battle between the hero Gilgamesh and the lion, the watering of the sacred bull, and wildbeast and bird hunts. These works are notable for their perfection of technique, the organic quality of their composition, and their elegance of form (XII, PL. 523). Among what remains of Babylonian sculptured work, a bronze from the beginning of the 2d millennium is a charming representation of three ibexes (IX, PL. 491). The Assyrian artists elaborated the Babylonian theme of the human-headed bull and lion, presenting them as gigantic demons, guardians of the gates of fortresses and royal palaces (IX, PL. 488). The originality of the Assyrian work lies in the expression of the form, which conveys a feeling of force and violence. The same artists, at the same time, produced the friezes with animals in bas-relief on glazed bricks in the temples and palaces at Khorsabad. The Assyrian concept of the animal figure, rendered with naturalistic feeling, as neither protagonist of a hunting or battle scene nor part of a landscape but as pure decoration, was later to reach archaic Greece through Phoenicia. Assyrian animal art reached its peak in the great hunting scenes cut in bas-relief from the palaces of Ashurnasirpal (884–859 B.C.) and Ashurbanipal (669–626 B.C.) in Nineveh (mod. Quyunjig; PL. 456; IX, PL. 493). In these there are several figures at varying heights: there are no perspective planes, and the figures intended to be nearest the viewer rest their hooves on the lower fillet of the panel, while the others are higher in the panel. The natural shape of each animal — lion, gazelle, onager, dog — has been accurately rendered. Also noteworthy are the crouched lion in his death agony and the lioness pierced by two spears. During the Neo-Babylonian period (612–539 B.C.), Mesopotamian artists created the Ishtar Gate in Babylon, which was decorated with bas-reliefs of bulls and dragons in polychrome bricks (IX, PL. 494).

The oldest known manifestations of Anatolian art (early Bronze Age, ca. 2500–2000 B.C.) are small-scale images cast in bronze and sometimes inlaid with silver, representing stags with branching antlers, bulls, and panthers (PL. 455). Placed atop knotty sticks, these small statues were "standards" belonging to a cult, and some come from tombs at Alaca Hüyük (I, PL. 517). In them, the artists adapted the natural shape to the emblematic function of the effigy. Ever since the archaic period of Hittite art, which occurred in Anatolia at the beginning of the 2d millennium B.C., the lion was the principal subject in the animal repertory (PL. 458). This animal first appeared on terra-cotta rhytons, which were sometimes glazed (there are some examples of the 18th cent. B.C. from Kültepe); later, when the Hittite kingdom was at its height (1450–1200 B.C.), lion figures were used as guardians of doors and as supports for anthropomorphic deities (this was a motif of Mesopotamian origin; its last echo is the Syrian type of Jupiter Dolichenus of the Roman period; IV, PLS. 216, 220). The lion of Hittite statuary has an original and unmistakable aspect: massive, square, measured, and charged with energy (VII, PL. 280).

During the 2d millennium B.C. in the area of Phoenician civilization, art was subject to the influences of the Mesopotamian and Hittite civilizations in the north and to Egyptian influence in the south. Large statues of lions, sphinxes, griffins, and scorpions appear as decorative motifs at the bases of pillars in the palace of Kaparu at Tell Halaf: under the wild beasts are goats of smaller size. The motif of the feline bringing

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

down a grazing animal is often the symbol of the victorious king destroying an adversary (PL. 459). This concept passed from Asia to the peoples of the West. Lions supported the sarcophagus of Aḥīrām, king of Byblos; lions, deer, goats, cattle, female sphinxes, and winged bulls are carved on ivory plaques or embossed on sheets of metal (forming handles of mirrors, cups, etc.) found at Ugarit, Byblos (XIII, PL. 366), Nimrud, Megiddo, Tyre, Arslan Tash (XIII, PL. 363), and Samaria, as well as in Etruria, Sardinia, and Andalusia. A granite stele found at Beth Shan (Israel) bears on each side a sculptured bas-relief of a dog fighting a lion, a symbol of peoples or divinities in conflict (XIII, PL. 365). There are a number of terra-cotta statuettes of monkeys, hippopotamuses, and other mammals (Beirut, Lebanon, Nat. Mus.).

In Cretan-Mycenaean art, not only terrestrial but also, and especially, marine fauna was represented in small statues of *pietra dura*, faïence reliefs, vase paintings, embossed gold cups, inlaid dagger blades, plaster bas-reliefs, wall paintings, and carved precious stones. Among the best-known of such objects are the goat with her kids (Heraklion, Archaeol. Mus.), a faïence relief from Knossos (a motif of Asian origin, here rich with an original naturalistic content and elegance of line); the amphora from Gournia with a polyp with tentacles (IV, PL. 65); painted flying fish from Phylakopia (Melos); a wall painting of a wildcat stalking a pheasant (Heraklion, Archaeol. Mus.) from Hagia Triada; the two golden cups from Vaphio, with scenes of the capture of bulls in repoussé work (IV, PL. 73); the relief of a bull's head in painted stucco from Knossos (Middle Minoan period, 1600 B.C.); the bull's-head rhyton in black steatite with details in other materials, from Knossos (Late Minoan period, 1550–1500 B.C.) and the rhyton in the shape of the head of a lioness, also from Knossos (IV, PLS. 59, 64); the lion's head in gold from the acropolis of Mycenae; the acrobat on a bull, frescoed on a wall in Tiryns; and the two heraldic lionesses sculptured in the pediment of the Lion Gate at Mycenae (IV, PL. 69). This last sculpture is somewhat of a departure from that naturalistic style which characterized Cretan-Mycenaean art for the greater part of its historical existence. Animals in the art of the final period of this civilization — the shellfish and polyp, painted on the vases from Ialysos — have coldly elegant and stylized forms.

Although Greek art took man as its central theme, it also portrayed all the species of fauna known to the Greeks. The Indian parrot was not known to the Greeks before the time of Alexander the Great; nonetheless one example is represented in a Greco-Persian carved precious stone of the second half of the 5th century B.C. (Met. Mus.). Writers of antiquity record animals cast in bronze or painted by famous artists: the heifer by Myron on the Acropolis in Athens; the bulls by Theopropos dedicated by the Corcyrians in Olympia and Delphi (here the base and inscription were discovered); a colossal bronze bull on the Acropolis that became famous through the witticisms of the comic poets; a bull led to the sacrifice, painted by Pausias; and a similar subject in a painting by Apelles. The vase painters of the Ionian workshops, and later those of Corinth, introduced the Eastern taste for continuous friezes with processions of animals — felines, goats, cattle, birds, and female sphinxes. The Mesopotamian archetypes of these zoophoric friezes are well known. In Ionian and Corinthian vases animals decorated the entire surface; in Attic vases the areas of animal decoration were limited to the shoulders or neck or foot of the container, because the greater part of the surface was reserved for mythological scenes. The zoophorus was taken up in architectural sculpture and appeared on the architrave of a proto-Archaic temple at Prinias in Crete. Large serpents and polychrome monsters with fish tails appear in the corners of archaic pediments on the Athens Acropolis. An Attic black-figure cup is painted with a single polyp, which is perhaps an allusion to the name of the craftsman, who signs himself "Polypous." Gradually animals ceased to be the sole subjects of art, as they were in the East, and became elements in a narrative. In a metope at Selinunte Zeus in the form of a bull — body in profile and head seen frontally — rapes Europa above a sea suggested by darting fish (VII, PL. 58). The Calydonian boar with the short-cropped crest stands out in a metope from the Treasury of the Sikyonians (Delphi, Archaeol. Mus.); in Attic black-figure ceramic decoration the animals are those from the myth of Herakles (cf. I, PLS. 348, 362); in very ancient embossed bronze laminae the animals are associated with a beast-taming divinity of Asiatic origin. This reflects the difference in attitude between the Greek and Asiatic spirit. In all Greek art two subjects from the animal repertory were especially favored: the horse and the lion. The horse was regarded as a heroic, aristocratic animal of divine origin, sacred to the god of the sea, and symbol of the eternally moving waves. From the time of the geometric period, the horse appears either alone, as a votive statue, or in association with a god, a hero, or another mortal who sits astride it or guides it from the cart of the agon, in battle, or in the cosmic journey of the sun. Such are the horses (Nos. 697 and 700) in the Acropolis Museum in Athens, those from the frieze of the Treasury of the Knidians (Delphi, Archaeol. Mus.), those from the east pediment of the Temple of Zeus at Olympia (Olympia, Archaeol. Mus.), those from the frieze and pediments of the Parthenon (Br. Mus.), those from the friezes of the Temple of Athena Nike in Athens and of the Sanctuary of Apollo Epikourios at Bassae (Br. Mus.), those from the acroteria on a temple of Licri Epizephyrii (Naples, Mus. Naz.), those from the friezes on the so-called "Nereid Monument" at Xanthos, from the Asklepieion at Epidaurus, from the mausoleum at Halikarnassos, from the base by Bryaxis (II, PL. 58), and from the votive and funerary reliefs on the so-called "Alexander Sarcophagus" (VII, PLS. 151, 152). Of equal artistic value are a small bronze from 480–470 B.C., another of the same period from Olympia (Athens, Nat. Mus.), representations on the tetradrachma of the 5th century B.C. from Syracuse (cf. III, PL. 397), and some precious stones (VI, PL. 35). Best-known of all of these are the Phidian horses and that of Selene on the eastern pediment of the Parthenon (PL. 467). The observation of the natural shape had at this time made a great step forward, expressing itself in the chiaroscuro of painstakingly modeled planes.

The image of the lion had more or less the same symbolism for the Greeks as for the Orientals; it was the symbol of force and courage, and hence the spirit that warded off evil beings; it was also the guardian of temples and tombs. The oldest-known lion image in the West dates from about 650 B.C. and is a head on the Macmillan lekythos (Br. Mus.) from Thebes, of Corinthian production. From 60 or 70 years later came the first large-scale stone lion, found at Perachora on the Isthmus of Corinth. Rainwater spouts in the gutters of temple roofs were in the form of lions' heads, in terra cotta during the archaic period and in stone or marble in later centuries (VII, PL. 57). The archaic lion heads are characterized by green eyes and a black mane, which spreads out in the pattern of floral calyxes. The ears were shaped separately and later set into the sculpture. On a limestone pediment from the pre-Persian Acropolis at Athens, of Eastern inspiration, two lionesses devour a calf. A similar theme appears in reliefs on small clay altars of archaic Italiote and Siciliote origin. Two splendid lions that were influenced by Corinthian styles crouch within the wings of a pediment from the Temple of Artemis at Corfu (I, PL. 343). On the same island another stone lioness guarded the cenotaph of Menekrates (VII, PL. 43). For three centuries the lion was a funerary symbol, perhaps of the underworld (as in Celtic sculpture). Among the best-known of such representations are the lions in the mausoleum at Halikarnassos and the last great lion of classical art, that at Cheronea. Almost 20 ft. high, this marble colossus was erected on the tumulus of the Athenians and Thebans who fell in defense of Greece against the Macedonian hegemony. The scheme — animal crouching on its hind legs with forelegs, chest, and head erect — is traditional. It dates from about 338 B.C., on the eve of the period of strong Hellenistic realism. The lion has a certain architectural rigidity; the taut legs recall columns supporting a pediment. The concept of the lion as a symbol of military valor, even in defeat, emerged again in neoclassic styles. (For the lion figure in engravings on coins, see EMBLEMS AND INSIGNIA; on precious stones, see GEMS AND GLYPTICS, especially VI, PLS. 35, 36.)

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The base of the so-called "altar of Cn. Domitius Ahenobarbus" was ornamented with marble reliefs. In one of these is portrayed a ritual scene (VII, PL. 210) with preparations for a *suovetaurilia*, that is, the immolation of a pig, a sheep, and a bull — an expiatory sacrifice with which the Romans opened and closed each campaign. This is the oldest of a long series of similar representations. A marble sow suckling twelve piglets (Vat. Mus.) is from the Augustan period and is in a severe style that has more original Roman elements than the Hellenized style of the two Grimani reliefs (Vienna, Kunsthist. Mus.) with the lioness and the sheep. Typical of the Julio-Claudian period were the bronze wolf masks and lion masks used on ships and underwater fauna in mosaic pavements (cf. VII, PL. 179). During the first two centuries of the Empire, crocodiles, hippopotamuses, and ibises appeared in painted and mosaic landscapes (cf. I, PL. 23; VII, PL. 179; IX, PL. 3). Birds and insects are represented in paintings (e.g., garden landscapes of the Villa of Livia at Prima Porta; VII, PL. 208) and reliefs (e.g., those from the Ara Pacis; VII, PL. 211). Animals — eagle, wolf, bull, horse, and boar — were the insignia of the legions. These probably had originally been totems of the prehistoric tribes of Latium. The eagle image was surrounded by an entire mythology, which was enriched with Syrian elements at the time of the Severi (the eagle was the ray of the sun, supreme god in the Syrian pantheon); in some apotheosis scenes the dead emperor is carried up to heaven by an eagle (IV, PL. 220). One of the most beautiful eagles in Roman sculpture is that which was found in Trajan's Forum and which was collocated in the portico of the Church of the SS. Apostoli in Rome. In this work the motif of the eagle surrounded by a garland of oak leaves, known in earlier Roman art, was taken up and elaborated. The horse was another subject of Roman art and appeared mainly in aulic sculpture, in equestrian statues, or in representations of the emperor in the triumphal chariot. Noteworthy examples of such sculptures are a bronze horse from Herculaneum (Naples, Mus. Naz., No. 4904); the bronze statue of Marcus Aurelius on horseback in Piazza del Campidoglio (X, PL. 148); a panel in the vault of the Arch of Titus in Rome (VII, PL. 262); and the relief of the triumph of Septimius Severus on the quadrifrons arch in Leptis Magna (XI, PL. 358). Chariots and *quadrigae* also appear in scenes of circus games. The most notable sculpture of this subject is the large marble chariot in the Vatican Museum. In scenes of games staged in the circus or the amphitheater wild beasts are depicted in combat. The most impressive representation of this subject is painted on a wall of the so-called "Hunting Baths" at Leptis Magna: the names of the animals, as well as those of the hunters, are indicated beside each figure. A similar subject was rendered in mosaic in the villa of Dar-Buk-Ammera (I, PL. 22) and in Hippo Regius (VI, PL. 61). The funerary lion reappears in the sarcophagus reliefs of the 2d and 3d centuries. The last lion representation of ancient art is perhaps that on the so-called "Shield of Hannibal" (Paris, Cab. Méd.), a large round silver object which was part of a treasure probably produced in Carthage during the late-antique period. The lion, slightly foreshortened, moves toward the left of the composition; in the background stands a palm tree with an umbrella of foliage. Roman art of the imperial period produced representations of the animals of Eastern divinities (e.g., the bull of Mithras; IV, PL. 220), and the animals of Early Christian symbolism (see below). The last group of animal subjects in Roman art is that of the ducks, dolphins, swans, and griffins on the buckles, necklaces, and other gold objects from the Ténès Treasure (Algeria), dating from the first half of the 5th century.

b. Plant representations. The artists of the Nile Valley drew on the local flora for inspiration. The shapes of columns and capitals were copied from the plant world (palmiform, lotiform, and bundled papyrus columns; IV, FIG. 682) and plant forms were geometricized to suit their decorative function.

In the Ptolemaic era a type of composite capital was formed by putting together several superimposed elements, used with infinite variety. Flowers and leaves adorned glazed terra-cotta vases and ivory handles for mirrors and cutlery (VIII, PL. 236); they also appeared in frescoes and textiles. A frequent motif was that of the lotus flower (PL. 464; III, PL. 130).

The most ancient Mesopotamian representation of a tree — with linear, threadlike trunk and branches — is engraved on a cylinder seal showing Gilgamesh fighting a lion, from the Sargonid period (3d millennium). Rich, geometricized flower decoration is painted on Mitannian vases (about the middle of the 15th century B.C.) from Tell Atchana and Tell Billa. The rose with an open corolla depicted in perspective, like a disk, or with the calyx in profile — either upright or at the end of a long, spiral stem — was a favorite motif, as was the palmette. These motifs were extremely stylized and were repeated with regular rhythm in friezes on the walls of Assyrian royal palaces. The stylized palm evolved into the motif of the sacred tree flanked by winged griffins. Landscape representations are engraved on cylinder seals and are sculptured in stone reliefs from the palaces of Sennacherib and Ashurbanipal at Nineveh (IX, PL. 2). The last flowering of Babylonian art, under Nebuchadnezzar II (604–561 B.C.), produced a wall decoration in glazed polychrome bricks, in which yellow masts with volutes and palmette capitals stand out against a blue background. At the top a frieze of white palmettes and lotus flowers connects the capitals.

At the top of the four sides of the sarcophagus of Aḥīrām, king of Byblos, runs a frieze of lotuses with their calyxes turned upside down, alternately open and closed (10th cent. B.C.). In reliefs on ivory plaques, capitals with leaves and flower calyxes decorated the balustrades of the window balconies. On a fragment of an ivory plaque from Arslan Tash (8th cent. B.C.) Isis stands beside the sacred tree, which is rich with curving branches that are ribbed in a decorative manner. The same subject, set between two water birds, is seen again in a small clay jug from Cyprus. During the 8th century B.C. Cypriote artists produced a type of pillar capital, in which the iris flower was elegantly stylized and enriched by the addition of the palmette (IV, PL. 96). This motif is commonly called "Cypriote," but it really derives from an Egyptian prototype of the beginning of the 18th dynasty. One of the most notable examples of this motif is a limestone stele of the late 6th century from Golgoi (Athienou), Cyprus (Met. Mus.); to the palmette is added a motif with two female sphinxes at the sides of the sacred tree. The Cypriote palmette is a decorative element found frequently in Phoenician and Punic crafts production. The palm-tree motif appears on several steles of the Tophet in Carthage and also was used on Carthaginian coins.

The plant world inspired the vase painters of Crete. Decorators of pottery in the Kamares style (Middle Minoan III; IV, PL. 57) rarely reproduced the plants in naturalistic style and stylized them to a high degree instead. Sometimes the natural models — daisies, lilies, anemones, and water lilies — are recognizable among the decorative spirals. On a vase with a spout (from Knossos) can be seen amid the branches leaves that were later repeated in the Greek anthemion. About 1600 B.C. there were two types of production of vases with naturalistic decoration of lilies and grass: one was white on a dark background, the other dark on a light background. The pottery decorators were inspired by the frescoes at Amisos, Hagia Triada, Knossos, and Phaistos (Middle Minoan III, 1600–1580 B.C.; IV, PLS. 62, 65).

When the painters of Attic black-figure vases reserved the principal part of the amphora for mythological scenes, they used floral decoration on the secondary areas — neck, shoulder, feet, and the zones under the handles; these were painted with palmettes, lotus flowers, leaves, and pods (II, PL. 47). The same motifs adorned the capitals and upper zones of temples: cornices, gutters, antefixes, acroteria. In architecture, elements derived from the plant world ceased to be simply surface decoration and acquired a precise significance closely related to the decorated parts. For instance, the upright flower and leaf signify the architectural impulse upward. The proto-Greek type of capital, called Aeolic (because it appeared during the 7th century in Lesbos and Troas), is represented by the example found at Neandria (Istanbul, Archaeol. Mus.; I, PL. 334) and shows more clearly than the Ionic capital its origin in the plant

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

world: on a cylindrical shaft a stylized lily opens out. Between flowers and shaft are a mass of erect leaves and a garland of leaves turned upside down, both motifs of Asian origin. No trace of this type of capital appears elsewhere, but in the 6th century B.C. it was widely used as the ornament for and as the crowning element of bases in column form. One plant — the acanthus — unknown to the pre-Hellenic civilizations, was rendered immortal by the Greek artists. It flourished on Attic soil and perhaps as early as prehistoric times was considered to have a magic property that protected against death. For this reason acanthus leaves decorated the acroteria of funerary steles. Significant examples are the acroteria from the Apollonion in Phigalia (420 B.C.; Br. Mus.), the "Venetian" stele (460 B.C.; Berlin, Staat. Mus.), the stele from Karystos (Berlin, Staat. Mus.), and the stele of Meneas (5th cent. B.C.; Athens, Nat. Mus.). Other monuments are the capital from Megara Hyblaea in Palermo (Mus. Archaeol.), the frieze of palmettes and acanthus from the Erechtheion (III, PL. 341), the silver vase from Actia Nicopolis (late 5th cent.; Leningrad, The Hermitage), and one of the small pediments of the cover of a Sidonian sarcophagus in Istanbul (Archaeol. Mus.). The acanthus dominates in the third type of Greek capital, the Corinthian (VII, PL. 150). According to Vitruvius (*De architectura*, IV, 1) the sculptor Kallimachos (in the last decades of the 5th cent. B.C.) is supposed to have invented it, inspired by the sight of a basket around which an acanthus plant had grown on the tomb of a Corinthian girl. This is a legend that was perhaps fostered by the fact that this artist had created the same type of capital in Corinthian bronze. One detail of the legend seems to preserve the memory of the funerary origin of this subject. The Corinthian capital permitted infinite variations on the plant motif. Sometimes the nucleus is circumscribed by a simple, sparse crown of large spiny acanthus leaves on which rises another crown made of lighter leaves; at other times the leafy crown is doubled and to its corners are added voluted vine shoots in spirals that bear the projections of the abacus. In Hellenistic art the leaves are depicted in a realistic manner. Because of its elegance, slimness, and esthetic adaptability, the acanthus capital was taken up in Roman and, later, in Renaissance art. The most representative examples are those of the temple of Apollo Epikourios at Bassae, the Tholos of Epidaurus, the votive column at Delphi (Archaeol. Mus.), and the monument to Lisikrates at Athens (334 B.C.; X, PL. 156). Finely chiseled acanthus leaves decorate a golden diadem from Taranto; two 2d-century diadems from Canosa bear small garlands of fruit and flowers in gold and enamel (VI, PL. 242). (See COINS AND MEDALS.)

In general the heritage of ornamental forms, at first Eastern and then Hellenistic, filtered through to the Etruscan civilization. For this reason there are, in Etruscan art, the same motifs of the craft products of early archaic times, in the terracotta temple facings, the sculptured cippi and sarcophagi, and in the bronze cists and mirrors decorated wth graffiti (under the influence of Attic red-figure ceramic decoration). The forms have more body and are more massive than the Greek ones. An outstanding example of the plant motif in Etruscan art is the representation of slender and delicate trees with red trunks and branches, light green lanceolate leaves and dark green berries, which, soberly naturalistic, figure in a composition with dancers and musicians on the walls of the "Tomb of the Leopard" at Tarquinia (PL. 466; V, PL. 42).

The first great aulic monument of Roman art, the Ara Pacis Augustae, is also the first splendid exaltation of the plant. The essential value of Augustan art is its original plant decoration (VII, PL. 211). The wall of the podium of the Ara Pacis is completely covered with volutes of acanthus in relief, composed in a complex system of spirals that open out, like embroidery, from a central acanthus and spread until they meet the corner piers. Among the flower motifs in this work are palmettes, peonies, poppies, and roses, to which are added such animal figures as small birds, insects, lizards, and small serpents. Roman art widely used the wreath of leaves and the festoon — a large bunch of leaves, flowers, and fruit, tied with ribbons — which was hung in loops on altars, in temples, and in arches (herms, too, were decorated with wreaths as a mark of religious devotion). These were not new themes, since they had been known in Greek art, but Roman artists developed them with great richness and variety and naturalistic sensitivity, making them, to all effects, original Roman creations. The Italian artists of the Renaissance did something similar. The Ara Pacis also presents the first noteworthy examples of Roman festoons sculptured in high relief: clusters of grapes, ears of wheat, and various fruits and nuts. The sculptural work reproduced natural colors; these festoons can be considered, therefore, to be among the most outstanding examples of still life in ancient art. Flower motifs were used extensively at the time of the Julio-Claudians; the Flavians produced plant subjects in which the motifs are part of landscapes of gardens and woods, often with sacred trees enclosed and decorated with consecration bands (IX, PL. 4). Artists worked in all media: mosaic; repoussé work in precious metal (silver cups from Alesia and Boscoreale abound with olive twigs or with plane-tree leaves; VI, PL. 254; VII, PL. 216); glasswork (amphora from Pompeii in white and blue cameo glass with vintaging cupids; VI, PL. 219); glyptics (cup in chalcedony in the form of celery leaves, from a tomb at Olbia, Sardinia, perhaps of the Neronian period). The sculptors of the school of Aphrodisias created works over a period of many generations, from the doorposts of the portal of the Temple of Bel in Palmyra (1st cent. B.C.), to the pilasters of the Baths of Aphrodisias (Istanbul, Archaeol. Mus.), to those of the Severan basilica and of the quadrifrons arch in Leptis Magna. This art, in which the leaves tended to occupy almost all the free space, is reechoed in the distant Gandhara (q.v.) art (bone frames from Kapisi, mod. Begram, 2d–3d cent.), in the early Byzantine period (a pre-Justinian bronze door in Hagia Sophia, Istanbul), and in Coptic art (architectural details, III, PL. 453; textiles, III, PL. 446; and funerary steles in Cairo). Plant representations took on allegorical significance in Early Christian frescoes (III, PLS. 92, 95). The last examples of plant representations in ancient art are the palmate cross among spirals with roses in the pediment of the Tempietto del Clitunno (5th cent.) and the leaves of an openwork gold necklace from the Treasure of Ténès, mentioned above.

Gennaro PESCE

The East and Eurasia. a. Animal representations. The figural art of Asia, from the dawn of protohistory to modern times, offers an extraordinary variety of structural and stylistic interpretations of animal motifs that reflect a vast range of magic, religious, sociological, and decorative values.

The figure of the animal in the Asiatic cultures and civilizations is expressed in a realistic manner, or with a stylization that is variable in its origins, its intentions, and its taste (PL. 458). The tendency toward ornamentation suggests from time to time forms that are illogical and unnatural. From the earliest times there is a recurrence of composite images in which parts of various animals become fused in an imaginary creation which adheres to reality in the single details. Semihuman and semianimal figures abounded, and served to add to the already rich repertory of the ancient Near East and the classical world. In some cases plant elements were represented as having become integral parts of living creatures, not because of mere whim, as is almost always true in the West (see FANTASY), but in a search for symbolic significance that broke down the barriers separating the various realms of nature. Similarly, the transformation of a terrestrial animal into an acquatic or winged creature alluded to arcane disorders or supernatural powers.

In Asia the almost exclusively preferred subject of the so-called art of the steppe (see STEPPE CULTURES) was the animal figure, which was part of a complex phenomenology that found expression throughout a large part of Asia and Europe. It even influenced medieval art in the West.

The principal centers of animal representation in the protohistorical periods include the cultures and civilizations of the Near East and the areas of the Iranian and Baikal cultures. The art of the latter shows a marked tendency toward realism and, in some figural schemes, foreshadows solutions used by

CC-0. Agamnigal Digital Preservation Foundation, Chandigarh

the various artistic trends of steppe art. The works produced by the Baikal culture, relatively rare and generally of mediocre quality, nonetheless represent an important point of reference.

Iranian production was much more rich and varied. Its predominantly stylized (or abstract) vision of animal figures is opposed in vase painting by vigorously realistic images, sculpturally treated (III, PL. 121). There is an obvious attempt to adapt the figures of the animals, almost always seen in profile, to the form of the vase, emphasizing individual attributes or characteristics that are transformed into elegant decorative motifs (e.g., horns; long, flexible necks; and lengthened necks). Among the subjects, goats are dominant. The geometricizing stylization in this art can be linked with the geometric styles of very ancient basketry (q.v.) and effects of movement (lines of elongated dogs on the goblets from Susa I; VIII, PL. 119). In zoomorphic vases the craftsmen demonstrated a marked sense of volume, creating images of impressive power, both realistic and stylized, some of which probably were intended to be caricatures, or at least humorous (e.g., in the cultures of Hasanlu and Garmabak; II, PLS. 3, 4).

The animal image in Iranian vase painting is always considered in itself, for although it was repeated for decorative purposes, it clearly outlined an isolated element against the background formed by the sides of the vase. There was no indication of the animal's natural environment, as there had been in the protohistoric cultures of northwestern India and of Afghanistan (see AFGHANISTAN; ASIATIC PROTOHISTORY; INDIAN ART; INDUS VALLEY ART; PAKISTAN), where the animal was depicted in its natural environment with stylized representations of trees, grass, and water. These representations, less linear and more sculptural in quality, reveal a less clear vision and a lesser capacity for stylization in the search for a descriptive realism. From ancient times, Iranian metalwork has shown frontal images of animal heads (VIII, PLS. 125, 130). The prevalence of the profile is notably reduced in the bronzes from Luristan (see IRANIAN PRE-SASSANIAN ART CULTURES), while the Zawiyeh golden cup presents, with very accurate and efficacious realism, the fusion of the profile of the bodies (in light repoussé) with the high relief of the splendid heads. There is a ribbon-form stylization of some animal images from Luristan. In various aspects Zawiyeh foreshadows Achaemenid art. The rampant lion from the combat scenes repeated on a gold facing plaque (VI, PL. 248) should be enough to demonstrate this connection, which does not preclude earlier influences from Hittite and Urartian sources, easily recognizable also in the "passant" lion motif favored by the Achaemenids. The archaic conventions of the animal repertory persisted in the minor works of Achaemenid art, while on the equipment of the Medean officers recurred animal motifs that attest to the bonds that existed between the art of the Medes, that of Scythia, and that of Central Asia. Achaemenid sculpture, with its realistic tendency, became an involuntary documentation of the tastes of a rather mysterious nation and confirmed the connections which Achaemenid Iran maintained, directly and indirectly, with Outer Iran. Animal motifs were widely used in the art of the Scythian and Śaka peoples, which together with Chinese contributions and the autonomous art of the nomads formed the art of the steppe, subdivided into the Scythian and the Sarmatic. Steppe art used animal motifs for emblematic and decorative purposes in a magic context, and it followed remarkably different lines of development according to area. While Scythian art passed from stylized linear figures to others which were much more elaborate and complex and finally produced works that show traces of Greek realism, the art of the Siberian area passed instead from rigid forms, in which the volumetric structure is dominant, to others rendered in almost geometric schemes (animals twisted into the shape of a circle with legs forming an openwork circle or contorted in a horizontal S), some of which are of nomad origin and others of which are Chinese (X, PLS. 397–400; XIII, PLS. 184, 186, 187). From stereometric forms they passed to linear stylizations, often in openwork, with color values attained through the application of enamels, precious stones, and glass paste, especially popular in the Sarmatic era. Notwithstanding the stylization, the form of the animal is never completely obscured, and the nomads rejected the indistinct and monstrous zoomorphic forms.

The monstrous aspect in zoomorphic representations is to be found in the Chinese *t'ao t'ieh* motif of the Shang period, which in the Chou period gradually became less popular and disappeared, giving way to images which were equally fantastic but which were combinations of different parts of animals that really existed; these images were realized in forms and styles that were unmistakably Chinese. In the bronzes of the Shang and Chou periods and in the lacquers of Ch'ang-sha (cf. III, PL. 226) there appear stylized representations of insects to which particular symbolic significance is attributed. The cicada larva is a symbol of the indistinct and the undifferentiated, because of its asexuality. Symbols, including that of the fly, also were widely used in Christian and barbarian art of the early European Middle Ages and retained similar symbolic meanings. In China the larva symbol is alternated with that of the homunculus. In the lacquers of Ch'ang-sha these images were fused to form a roughly anthropomorphic figure with a larva's head.

The Shang larvae are the first representations of insects in art. Although the animal images on seals of the Indus civilization (II, PL. 18; VIII, PL. 69) are mainly realistic, there also appear some completely imaginary figures as well as figures in which a single fantastic element is added to a detailed realism (bulls with a single horn). Still other figures represent masked animals. The Indus seals reflect man's desire to act on nature, transforming it in the process. The elaborate head harnesses of Pazyryk were designed to transform the horse into the reindeer by masking it (XIII, PLS. 188, 189). Pazyryk was exposed to Achaemenid influences, which probably reached the area through trade routes even after the end of the empire, just as in the India of the Maurya dynasty. Here the stylized lion images bear the mark of their Western origin in the rictus of their jaws and in the treatment of the mane (II, PLS. 399, 400). However, the realistic animals sculptured on the plinth and the bull atop an Aśokan capital (II, PL. 401) show the existence of an entirely different line of development, perhaps derived from the realism of the Indus seals. The doctrine of reincarnation dictates the care with which artists executed animal images, reducing stylization to a minimum and reserving it exclusively for imaginary figures that are often derived from Western art. One of these imaginary figures was the *makara*, a water monster, perhaps related in form to the crocodile (I, FIG. 410; X, FIG. 843, no. 15). Stylized images of horses, lions, and elephants were used in decorative motifs that, in later periods, took on baroque aspects. The continuation of the Achaemenid influence was very pronounced on the artistic development of the northwestern regions and endured sometimes into very late eras. The serpent image was an original Indian motif: in representations of the naga kings it underwent a number of variations, though constantly remaining a mixture of human and animal elements (VIII, PL. 6). The elephant-headed god Gaṇeśa (VII, PL. 227) and the animal *avatāra* of Viṣṇu (VII, PLS. 228, 232) also are symbols that combine observation of animal life with elements of fantasy.

The most ancient phases of bronze production in China, related to that of the rest of Asia in various aspects, were followed by a period in which there were characteristic stylizations with large elliptic segments or with marked curves; these motifs were used in commemorative compositions and other forms of animal representation. Among these forms the characteristic interpretation of the equine head in the Han terra cottas dominates; the value of the horse as an instrument of war is evident in this type of head. Other animals, among them the turtle and the lion, complete the repertory and appear sometimes in highly stylized forms that are extremely far removed from reality. Chinese art, with its tendency toward the fantastic, interpreted the data of nature in a particular way, not only in decorative motifs but also in the characteristic figurines of the T'ang dynasty (III, PLS. 246, 247, 250). This Chinese interpretation greatly influenced that of animal motifs throughout the Far East; it recurs in Chinese court painting. Together with albums dedicated to animals and compositions

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

that depicted the seasons and their characteristic fauna, representations of horses, often stylized, appeared frequently. The horse has been chosen as subject by master painters such as Han Kan, Li Kung-lin (q.v.), and Kuan Tao-shêng (III, PL. 197), up to Lang Shih-ning (Giuseppe Castiglione), and in modern times, Jupéon (q.v.; VIII, PL. 343; X, PL. 422). In general, however, the animal figure is included in Chinese art either as an animated detail in a landscape or as a primary or marginal notation in compositions often charged with symbolic and allegorical meanings. It sometimes is related to poetic interpretations of the seasons. Similar artistic conceptions are found in Korea and Japan, while the mass of production both in China and elsewhere tends toward stylized forms charged with an almost grotesque expression, emphasizing the symbolic value of the figure represented. Noteworthy among such forms is that of the dragon (PL. 32; II, PL. 15, FIG. 26; III, PLS. 229, 278, 280; VI, PL. 50).

b. Plant representations. The attribution of symbolic value to the tree, in the form of a stylized lanceolate leaf, is evident in a seal from Susa, datable about 3000 B.C., in which the tree is represented at the summit of a stylized mountain at whose sides two ibexes face each other. The symbolism of the composition, indisputable though not completely clear, does not obscure the decorative value always linked to plant motifs. Decorative motifs used in vase painting ranged from the thorny bushes, faintly geometricized, of al-'Ubaid to the landscape elements in the clay decorations of Kulli, one of the protohistoric cultures of Baluchistan, in which the artist strove to balance the distortions of the extremely stylized animal figures. The lanceolate leaves of the pipal tree appear in the decoration of terra cottas from Nal (another Baluchistan culture). The same motif appears not only on seals but also as one of the geometric motifs in vase painting of the Indus civilization (VIII, PL. 70). A stylized monochrome representation of round flowers with stems recurred sporadically on the ceramics from Tepe Giyan dating from the middle of the 2d millennium B.C. The tree motif returned in the Elamite cylinder seals from Susa and Chuga Zanbil. In some cases, the skeletal and strongly stylized tree was transformed into a whimsical motif, with branches arranged roughly in star formation; its value as a symbol was not diminished by this use.

The highest example of the decorative plant motif is to be found in the stylized Assyrian palmette (IX, PL. 493, FIG. 785, no. 6), which was used more systematically and coherently than those more complex motifs created by Iranian artists, especially in goldwork. The most noteworthy applications of the plant motif in the Iranian area are in the sheaf of twigs called the *baresman* (see LITURGICAL AND RITUAL OBJECTS), used by the priests. A mixture of plant and animal elements recurs on some bronzes from Luristan, on which a stylized pomegranate tree appears instead of the Assyrian palmette (VIII, PL. 123). The form with a human body and a pomegranate head is extremely rare; it is similar in concept to the mandrake in 15th-century German drawings. Some motifs in which imaginary beings seem to be twisted like braids of reeds or stems (the golden cup of Amlash; New York, private coll.) reflect trends toward plant motifs and at the same time geometricizing trends derived from basketry.

In India the tree had already been conceived of as a symbol of life when it appeared as an isolated element in protohistoric art and when it was flanked by the apparition of the mother goddess. In Buddhism (q.v.) the Tree of Enlightenment became the symbol not only of Buddha but also of his doctrine (II, PLS. 376, 407), and in this sense it was used by the iconoclast schools (see IMAGES AND ICONOCLASM). Depicted with strong emphasis on fruit, foliage, and leaves, the trees in the sculptured decorations at Bharhut and at Sanchi are conceived as the dwelling-places of the yakshis; from this relation of female figure and plant was developed the scheme of the *sālābhañjikā* attitude, in which the woman grasps the tree with one hand (II, PL. 408; VII, PL. 441; IX, PL. 384). This is repeated in the iconography of the birth of Buddha, in which Queen Maya, his mother, assumes this attitude. Plant motifs could be purely decorative as well. Apart from the lotus, with all its implications, other plant motifs were used in Buddhist decoration. The Hellenistic acanthus appeared on Gandharan capitals and the festoons of flowers and fruits on their long looped stems were used by the Mathura school. There is a clear link between the votive offering of flowers or of festoons and the plant decorations of Buddhist India. During the medieval period the plant decoration of pyramid temples symbolized the assimilation of the temple itself into the mountain. The classical contribution was completely lost in this period, while the scheme of stylization of plant forms was clearly Indian (XI, PLS. 6, 7). In Central Asia, and above all in those areas where Buddhist thought predominated, realistic floral expressions were used to create fairytale-like backgrounds for scenes of a timeless world. In the Turfan area tiny plant motifs and motifs of clear plant derivation are used as isolated symbols of beauty in representations of divine or semidivine beings (PL. 214). The landscapes in Tun-huang wall paintings retain the plant motif even when such geographical features as mountain chains are reduced to the form of superimposed triangles (III, PL. 244). The trees, especially the pine trees, are sometimes seen against a background of light that defines their shape; they are always interpreted impressionistically. The official representation of the Uigurian princes in Turfan art almost always includes a large flower held in the hand (I, PL. 488). Both realistic tendencies and decorative stylizations are evident in this scheme, just as they appear together in the repertory of floral motifs in Western art. The floral motif became common in Chinese silks as a refined decorative element and its use was extended in Central Asia to the frames of wall paintings and to the decoration of chapel vaults (III, PL. 238). In Sassanian Iran, plant decoration was restricted to stucco ornaments (PL. 464), to garlands that framed symbolic motifs in embroidered silk (XII, PL. 405), and to secondary decorative motifs on silver vessels (XII, PL. 404). Plant forms are generally only accessory ornamentation in toreutics. Plant decorations in stucco were generally of Assyrian or Luristan derivation and tended to have a stellar disposition and geometricized composition.

The most striking developments in plant representations in the East were Islamic art's creation of the arabesque and use of minute decoration and Chinese art's emphasis on landscape and on compositions of fruit or flowers that were imbued with the esthetic value of the subject.

Islamic decoration clearly concentrated on plant forms (the ban on the representation of the human figure, although not a decisive factor, nonetheless was of considerable importance in the development of Moslem art; see IMAGES AND ICONOCLASM). The prevalence of the plant motif — minute, elaborate, and stylized to the extreme — was determined by a vision of the world that was peculiarly Moslem; this vision (and these motifs) remained constant and unvaried in the different countries and cultures influenced by Islam in the course of centuries. Such details as leaves and stems and, less frequently, entire flowers were the principal decorative motifs and were used in bands, as elaborate backgrounds, on volutes, and on arabesques (VIII, PLS. 155, 158, 164; see ISLAM, cols. 351–352; also see OTTOMAN SCHOOLS). Symbolism was an important factor in the repertory of plant forms in Chinese art, especially in the period following the triumph of the Buddhist Ch'an sect (from which Japanese Zen derived).

MARIO BUSSAGLI

European protohistoric and barbarian art. Protohistoric Europe was influenced by the great Eastern trends in animal representation that came from two directions: from the ancient Near East and the Mediterranean basin (see ETRUSCO-ITALIC ART; MEDITERRANEAN, ANCIENT WESTERN; MEDITERRANEAN PROTOHISTORY), and from the northeast, following the trail of invasions and incursions from Asia (see ASIATIC PROTOHISTORY; EUROPEAN PROTOHISTORY).

These influences, presumably active as early as the oldest prehistoric periods and undoubtedly existing in the Neolithic era, became notable from the end of the Bronze Age and from

CC-0. Panjab University. Digital Preservation Foundation, Chandigarh

the beginning of the Iron Age. Scythian currents and, later, more generally, those of steppe art influenced Celtic art of the La Tène period (see CELTIC ART); the process continued with migrations and with the Turkish and Mongol expansions of the Middle Ages. The remote Asiatic origins of Celtic animal and plant themes are no longer subject to doubt (cf. III, PLS. 114–116, 119). It is not always possible to distinguish in European protohistoric decorative motifs that which is the result of direct Asiatic influence and that which came indirectly through Mediterranean sources, rejected by Greco-Roman art but preserved in provincial art (Italic, Illyrian, Alpine, South-Gaulish, and Iberian). Celtic art synthesized these contributions and passed them on to the barbarian art of the age of the migrations and of the early Middle Ages.

• •

With the beginning of the barbarian invasions a new taste and a new series of motifs in animal representations spread throughout Europe (the late and rare plant representations came to the barbarians from Mediterranean sources). This taste was clearly anticlassical. The many extant objects of goldwork, mainly from treasures and funerary accessories (see EUROPE, BARBARIAN; GOLD- AND SILVERWORK), reveal two different trends: one proper to the Goths, who had a marked predilection for polychrome decoration which, in bird-shaped fibulae such as that from Petrossa, are naturalistic in conception and stylized in execution (V, PLS. 58, 60); the other trend, of Germanic derivation, was toward filigree and repoussé techniques and used the animal figure in complex decorative schemes. In Salin's Style I the repertory of animal forms shows once more, as in the bracteates, the use of forms of classical origin, greatly transformed and detached from reality (V, PLS. 72, 73). Most often represented were reptiles (e.g., the lizards on the Ålleberg collar; V, col. 157, PL. 64), snakelike creatures with human or bird heads (V, PL. 83), and dogs with long pointed muzzles. The design was at times almost obsessive, so much so that the figure was sometimes obscured in the agitated development of the motif. This may be seen, for example, in the polyps on the decoration of the scabbard of the sword from Nydam and in the horses on the Gummersmark fibula (V, PL. 84).

In Salin's Style II, animal representations in the Germanic art of Central Europe developed a ribbon trend and a type of interlacing clearly distinct from the classical in its constant and deliberate interruption, often emphasized by the alternating of smooth but strongly repoussé areas with others that were flat and striped (V, PL. 93). Figures of birds predominate, as is evident in the splendid ornamental plaque from Vendel (V, PL. 94). This plaque and others of a similar type show the influence of Hiberno-Saxon art, in which, from the 6th to the 9th century, there was a particular repertory of animal representations (see ANGLO-SAXON AND IRISH ART). Here too the interlacing is of great importance, especially in the last phase. The bird figure appeared most frequently (as in the Book of Kells; I, PL. 281). Anglo-Saxon art interpreted the entire animal figure, as in the symbols of the evangelists, in a bold, decorative play of line and color (cf. the Lindisfarne Gospels; I, PL. 280).

The Byzantine era. In the centuries that marked the decline of the late-antique style (see LATE-ANTIQUE AND EARLY CHRISTIAN ART), followed in the East by the Byzantine era (see BYZANTINE ART) and in the West by the early Middle Ages, plant and animal representations acquired a particular value, determined in many cases by the symbolic and allegorical meaning often attributed to them. Christianity itself based its art on literary images inherited in part from the Hebrew tradition (J. Danielou, 1961, passim), with its harsh iconoclastic attitude. It developed other images on the basis of contacts and similarities in the world of nature. Subjects such as the Bacchic thiasos, the sea teeming with fish, Orpheus taming the animals, the inhabited scrolls of grapevine and acanthus, with opportune corrections (the elimination of Bacchus and Ariadne in the Bacchic scenes, Orpheus's transformation into the Good Shepherd), became part of Christian iconography. The interpretation of these representations was suggested to the faithful by the Church Fathers: for example, a passage from the writings of St. Hyppolitus of Rome (3d cent.) evokes the vintaging scene on the annular vault in S. Costanza in Rome (4th cent.): "the spiritual vine is the Lord, the vine branches and leaves are the Saints who believe in Him, the bunches of grapes His martyrs . . . the harvesters are the angels, the baskets in which the fruit of the vine is gathered are the Apostles, the wine-press is the Church, and the wine the strength of the Holy Spirit" (J. Danielou, 1961, p. 45). A passage from Tertullian (2d cent.), "Sed nos pisciculi . . . nec aliter quam in aqua permanendo salvi sumus" (*De baptismo*, I, 3), recalls images such as that in the mosaic decoration of the Baptistery of Kilibia (5th cent.; Tunis, Mus. du Bardo), where fish dart in the water and water flowers appear along the inner edges of the composition, while grapevines twine across the floor.

Animal and plant representations not only appeared in an allegorical context but also became important symbols in Christian art: the lamb as symbol of Christ (as in the Chapel of St. John the Evangelist in the Lateran Baptistery in Rome, 5th cent.; on an ivory diptych, XIII, PL. 341; and in many Early Christian apse mosaics), or, when there are twelve, as symbols of the Apostles ("Capsella Africana" in Rome, Vat. Mus.; mosaics in SS. Cosma e Damiano, X, PL. 178). The twelve doves also are symbols of the Apostles (X, PL. 194; Baptistery of Albenga, 5th cent.?). The deer drinking at the spring represents the soul thirsting for God (Baptistery of S. Giovanni in Fonte, Naples, 4th cent.; Ravenna, the so-called "Mausoleum of Galla Placidia," 5th cent.); the phoenix and the peacock are symbols of the Resurrection of Christ (PL. 461; III, PL. 303); the fish is the symbol of Christ; the fishes, especially the dolphins, are symbols of the baptized (the portal of Church I of Alahan Monastir, 5th cent.; sculptures of the Basilica of Tebessa, 5th cent.). Monsters and hybrid figures were not used, except as symbols of evil (III, PL. 305). (See also SAINTS, ICONOGRAPHY OF.)

The evangelic identification of Christ with the grapevine made that motif especially popular. The motif was widely used throughout the late-antique period (mosaic in the apse of the Basilica at Sabratha; wooden door panels, S. Sabina, Rome; IX, PL. 83). The palm tree usually symbolized paradise, but it is also represented as an attribute of the saints, together with the laurel crown, a use that is derived from classical art. The tree, or a plant of any type, shown between two animals disposed heraldically (a scheme of Mesopotamian derivation) is to be interpreted as the tree of life.

In Christian art animal and plant representations often appear as pure and simple decorative motifs. In architectural decoration, especially in the East (e.g., the monuments at Baalbek, Lebanon), there was an enrichment of the decoration of moldings with a gradual disappearance of the ovoli and astragals favored by classical art and the increasing importance of the acanthus motif, in various interpretations (in the form of palmettes, helices, or scrolls enclosing a rosette within the spiral). Vines covered the shafts of columns (II, PL. 282); sometimes animals and other figures could be seen among the leaves. The ivy leaf was another commonly used motif. Emblemata bearing representations of animals, flowers, and fruit appear in floor mosaics. A letter of St. Nilus (Migne, PG 77, 577) states that hunting and fishing scenes of purely decorative purpose embellished the presbyteries of some churches in Constantinople previous to 400.

During the 4th and 5th centuries there were no stylistic differences between pagan and Christian representations of plants and animals. There was, however, a general tendency toward the stylization of the motifs [compare, for example, the sculptured acanthus leaves from the Church of St. John in Studion (II, PL. 469) with those of the Byzantine Hagia Sophia (II, PL. 469), in which there was a rhythmic repetition and geometricized style (e.g., circular scrolling; II, PLS. 442, 443)]. The center of this style was Constantinople, where, especially in sculptured architectural decoration based mainly on plant motifs, abstract shapes were emphasized and there was

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

a clear tendency toward iconoclasm. The principal examples of this are the churches of Hagia Sophia and SS. Sergius and Bacchus, where the acanthus motif was interpreted in an anti-classical manner (II, PLS. 426, 429). The artists split up the traditional cluster motif into single elements that were recomposed in rhythmic or symmetrical relation within a repetitive geometric design (II, PL. 442). This design was interwoven with the same stem motif that covered moldings, capitals, transennae, and even spandrels. In the *opus sectile* decorations in Hagia Sophia, which include, in addition to the acanthus motif, others such as those of the palmette, ivy, and grapevine, the above-mentioned geometricization and schematization are evident together with a tendency to hybridize and mix motifs that probably is derived from Syria. While extant monuments indicate that animal motifs were widely used in the West, they were almost completely lacking in the East. Doves, peacocks, and other animals disappeared or were reduced to tiny forms barely visible amidst luxuriant plant decoration. The cross was represented as the "flowered cross" or "tree-cross of life," thus fusing the ancient Mesopotamian concept of the tree of life with the doctrines of the new faith. In the vaulting of Hagia Sophia the cross is superimposed on a quadruple Sassanian palm tree; in the most common representation the cross rises out of an acanthus tuft or the acanthus is spread along the arms of the cross (Cross of Justin II, 6th cent.; Rome, Vat. Mus.). In *plutei*, two ivy leaves with very long stems extended from the base of the crown within which the cross or the monogram of Christ was inscribed. Direct Byzantine influences may be seen in the carved decorations of the Church of St. John at Ephesus (6th cent.), in some Greek basilicas (e.g., Basilica B at Philippi, where the acanthus-leaf decorations are interspersed with dolphin figures, so stylized as to seem like plant motifs), in S. Vitale in Ravenna (II, PL. 478; XII, PL. 233), and in the Basilica at Poreč, Yugoslavia.

The development of stylization in plant motifs is evident in the mosaics in the bema of the Church of the Dormition, Nicea (destroyed). In these motifs the ivy leaves, which have become monochrome with two thread-shaped cauliculi, are identical in form, one on either side of the traditional winding ribbon form, at this stage broken up into a series of rectangles. In the art produced at Ravenna, the more intense and continuous contact with Roman tradition made the dissolution of naturalistic tendencies more difficult. In Ravenna animal symbolism persisted and was emphasized; it may be clearly traced on a series of sarcophagi preserved there (G. de Francovich, "Studi sulla scultura Ravennate," *Felix Ravenna*, 26–27, 1958, pp. 5–172; 28, 1959, pp. 5–175). On the three sarcophagi in the so-called "Mausoleum of Galla Placidia" such animal figures as lambs, peacocks, deer, and doves had become the principal elements in the decoration. As Francovich states (*Felix Ravenna*, 28, 1959, p. 32 f.), the origin of this tendency must go back to Syria. This thesis is reinforced by the heraldic disposition of the animals and, above all, by the fusion of animal and plant elements. These motifs go back to ancient Mesopotamian art (cf. wall painting from Kar-Tukulti-Ninurta, 1243–1207 B.C.; Berlin, Staat. Mus.) and were taken up again by the Sassanians (XII, PL. 408). In the art of Ravenna, animals were rigorously reproduced in profile at the sides of the monogram of Christ and were increasingly stylized, to the point where the lambs' fleece was transformed into rigid superimposed tiles. This heraldic form — used also in the decoration of many *plutei* — modified the classical scheme of the doves drinking at a cantharus, depicting them in sharp profile at the sides of the vase (sarcophagus of Constantius III; Ravenna, "Mausoleum of Galla Placidia"). In the ambo of St. Agnellus (Ravenna, Cathedral) the animals were depicted in procession on panels.

The extremely rare extant examples of Syro-Palestinian art (q.v.) show two different trends: one, probably directly dependent on Antioch and marked by a Hellenistic taste; the other derived from Palmyra and including some elements of Sassanian origin, with a greater tendency toward schematization and stylization.

To the first trend is to be attributed the Antioch Chalice (IX, PL. 162), decorated with grapevine leaves inhabited by figures and animals, including the eagle, a form rarely seen in the Christian repertory. In this work is evident a lively naturalism such as may be seen in the later Rabula Gospels (Florence, Bib. Laurenziana, Plut I, cod. 56). In this manuscript the arches of the canon tables are decorated with animals such as hares, partridges, birds, and gazelles and with various species of flowers. The free and varied movements of the animals are far from the rigidity of those on Byzantine sarcophagi and *plutei*. To the second trend, closely connected with Palmyra, belong the huge pillars in Piazza S. Marco in Venice. The few extant sculptures in the area of Palmyra show a preference for spiny acanthus leaves, disposed like helices and sometimes opening out into wide flowers with nervation rendered by means of deep grooves on flat surfaces.

In Coptic art animal and plant forms were used for purely decorative purposes (III, PL. 458). The eagle is frequently to be found in this art, where it seems to assume an eschatological significance. The acanthus and the grapevine are the predominant plant motifs in decorative sculpture, and the pomegranate also appears frequently.

In the oldest textiles (e.g., No. 819–1905, Vict. and Alb.; 4th cent.) naturalistic forms were expressed with a rhythmic movement. In the 4th century there was a flattening and stiffening of form in the representation of leaves and bunches of grapes. The purely decorative style of the subsequent period disappeared after the Arab invasion (7th cent.) and was followed by a monotonous and almost calligraphic repetition of abstract motifs.

In the course of the 8th century the outburst of the iconoclastic struggle (see IMAGES AND ICONOCLASM) and the consequent prohibition of representations of the human figure conferred a special value on decoration, particularly that employing plant motifs, and led to a wider acceptance of Eastern themes. A few rock-cut churches in Cappadocia preserve rough floral motifs from the period; these motifs are executed in red and are alternated with symbolic animal representations. The tendencies of Byzantine art at that time may perhaps be indicated by the mosaics, frescoes, and stuccowork of the Ommiads (see OMMIAD SCHOOLS).

In the second half of the 9th century the iconoclastic crisis was ended and the renewed interest in the representation of the human figure relegated plant and animal representations once more to a secondary position. However, plant and animal motifs still constituted the basic elements in the decoration of the canon tables and other tables in illuminated manuscripts; the infiltration of elements of Moslem origin can be noted in these.

While plant motifs were stylized and schematized, animal motifs were executed with greater liberty and a sense of realism. The animal repertory is very extensive and included such animals as the camel, elephant, and monkey, and also such hybridizations as the siren-bird and the centaur.

Both plant and animal motifs appear in Byzantine mosaics (e.g., at Monreale; II, PL. 286). In ivories, plant decoration is rare, and was mainly in the form of a highly stylized acanthus leaf. In gold- and metalwork, the preiconoclastic motifs were favored.

The small so-called "rosette caskets," usually in ivory (VII, PL. 330), are in a distinct and important category. These took their name from the decoration of their borders with long bands of rosettes (an ancient Mesopotamian motif extensively used by Palmyran artists) framing mythological scenes or scenes of cupids and animals (II, PL. 481).

Extant fragments of Byzantine textiles show a skillful re-elaboration of Sassanian motifs, with animals depicted within roundels or in heraldic position flanking the tree of life; the eagle, including the two-headed form, is a recurrent motif (II, PL. 490). The same eagle motifs, of Mesopotamian derivation, also appear in ceramics of the posticonoclastic period.

The Middle Ages in Europe. The advent of the Frankish dynasty marked a return to classical models, a consequent

CC-0. Agamnigam Digital Preservation Foundation

elimination of barbarian animal motifs, and a wide use of classical plant motifs (see CAROLINGIAN PERIOD). The renewed interest in human figural representations, moreover, relegated both plant and animal representations once again to a secondary level. With rare exceptions, these were no longer symbolic, as they had been during the first centuries of Christianity, but fulfilled purely decorative functions. The exceptions included the lamb symbol and the symbols of the Evangelists, and such representations of animals or landscapes as were necessary in illustrative contexts (cf. the numerous animal illustrations in the illuminations of the Psalter in Stuttgart; 9th cent.; Landesbib. Bib., fol. 23). The sources of these animal and plant representations were ancient codices and ivories. In the codices of the Court School (see III, col. 111), the Syrian influence is evident in the canon tables, executed with a decorative elegance that often attained very original solutions (e.g., the grouping of the bull, the lion, and the eagle in the Gospels of St. Médard of Soissons; Paris, Bib. Nat., Cod. Lat. 8850).

In the northern schools and also sometimes in the Court School (III, PL. 56), animal decoration of barbarian origin was restricted to the initials or to the framing of the pages. The interlacing had taken on a continuity and was devoid of interruptions. In many codices the initials were represented by stylized figures of lions, fish, and birds (e.g., the Carolingian Gospel; Essen, Cath. Treas.). In other codices, as in the Drogo Sacramentary (II, PL. 284), the initials are instead composed of plant elements (grapevine or acanthus) that frame figural illustrations. Only sporadically are animal representations found in German ivories and they are generally derived from the Paleo-Christian repertory. The ivories were generally framed by acanthus leaves, and sometimes by grapevine and laurel motifs. The acanthus tended increasingly to be used with leaves of five or more lobes; these leaves took the form of palmettes connected by the lobes of the base, which, at their junction, formed an eyelet that was sometimes perfectly circular (a decoration evidently derived from 6th-century Byzantine motifs and related to that of the bronze railings in the Palatine Chapel in Aachen). The Court School gave wide development to this motif and, by increasing the eyelets between one lobe and another of the acanthus, obtained elaborate lace effects. The motif was used by the Rheims School (cf. plaques with illustrations of Psalms 24 and 26; Zurich, Schweizerisches Landesmus.), while in that of Metz the spiny form of the acanthus was interpreted in a more compact and static manner that resulted in a refined elegance, as in the comb of St. Heribert (III, PL. 67).

With the decline of the Carolingian Empire and the rise of the Ottonian, the center of European culture was moved to Germany, and animal and plant representations underwent further developments toward more concise and abstract forms, undoubtedly favored by renewed contact with the Byzantine world. Animal interlacings disappeared almost completely and plant decoration was preferred. For the plant forms of the Carolingian period were substituted an interlacing of stalks of equal width that ended in a trefoil (Sacramentary of Peterhausen; Heidelberg, Universitätsbib.), an ivy leaf, or an animal head (initial in the Gero Codex; Darmstadt, Landesbib., Ms. 1948). In the more elaborate codices of the Reichenau School (Book of Pericopes of Henry II; VIII, PL. 97; XI, PL. 314), round berries similar to mistletoe dot the entire interlacing; there also were composite plant forms.

In ivories and stuccoes the grapevine leaf (used more frequently than in the Carolingian period) became more schematized and flattened, with lobes folded outward. Animal representations became increasingly important during the Romanesque period (see ROMANESQUE ART), both for their Christian symbolism and as decorative elements. Inhabited scrolls were widely used at this time and were interpreted with great vitality both in the flow of vine shoots, often rendered more vigorous by semicircular veining alternating with grooves [this element was strongly accentuated in the work of the Antelami (q.v.; XII, PL. 252)], and in the marked sculptural quality of animal forms.

Animal representations assumed an important role in illustrations of the lives of the saints (see SAINTS, ICONOGRAPHY OF), in which they were accessory figures or were transformed, in some cases, into the attribute of the saint himself.

In Gothic art (q.v.) monstrous animal representations appeared on the rainspouts of the great cathedrals, and images of flowers and leaves decorated the interiors. The new plant decorations, which originated in France, broke away from the traditional architectural forms that had previously determined their use. In capitals with crockets, for instance, four veined leaves were inserted on each side between the four curled leaves at the corners, and were multiplied on two or more sections, tending to open the crockets in flower shapes (cf. VI, PL. 311). In the Abbey of Maubuisson a realistic grapevine decoration twists around the capitals (13th cent.; Louvre), which seem to be holding up the plant. Often birds peep out between the leaves; large leaves with fringed lobes open out behind the figures of Apostles on the portal of the south transept of Amiens; the leaves on the capitals of the columns between the figures on the central portal of the Cathedral of Rheims form a continuous hedge (VI, PL. 350). Spires and pinnacles of cathedrals were strewn with flowers in a decoration that had naturalistic elements.

Animal representations had become rarer and usually appeared in a narrative or symbolic context. There was a sense of majesty in the kneeling horse in one of the panels of the tomb of St. Dominic in the Church of S. Domenico, Bologna; in the horse in the equestrian statue of Cangrande della Scala in Verona (VI, PL. 367); and in the horse of Guidoriccio da Fogliano, depicted by Simone Martini (IX, PL. 334). The interest in animal and plant representations was even more marked in the production of the International Gothic style, which interpreted it in a particularly poetic sense that had a touch of fable. Animals, plants, and flowers were studied by the artist in the manner of one who discovers a treasure: he copied them from nature, in colors that were sometimes vivid and sometimes extremely delicate, but always recognizable and classifiable. He grouped them in visions such as that of the *Hortus conclusus* (cf. VI, PL. 372), the cycles of the months [e.g., those in the *Très Riches Heures du Duc de Berry* (IX, PL. 140), or those in the fresco of the Torre dell'Aquila in the Castle of the Buonconsiglio in Trent (II, PL. 26), which were of a delicate and aristocratic beauty]. In religious narrative paintings, horses, dogs, monkeys, falcons, and rams appear amid trees and flowers (VI, PLS. 64, 315, 325, 371, 377). Pisanello drew animals and plants from life, collecting his studies in albums (PL. 470; XI, PL. 178).

Fernanda DE' MAFFEI

The modern era. The great masters of the Renaissance (q.v.) regarded the plant and animal worlds from two basic points of view: that of a return to the classical motifs of antiquity, such as the horse in the equestrian monument or the laurel and acanthus in decoration, and that of a study of proportion and anatomy.

The anatomy and proportions of the horse were studied by artists from Alberti to Leonardo da Vinci and Dürer. Donatello and Verrocchio in their respective statues of the Gattamelata and Colleoni modeled their works on Roman equestrian monuments and exalted the animal not only as an anatomical study, but also for the ideal beauty of its form. Images of horses, lions, and sphinxes were used especially in monumental sculpture. Animal motifs returned to fashion in the small Renaissance bronzes, in decoration in general, and in furniture in particular (lion paws on chests, tables, etc.).

Apart from their rediscovery of classical subjects, Renaissance artists (PLS. 470, 471) based their naturalistic vision on scientific studies, becoming investigators and illustrators of the plant and animal world both for their own interest and to illustrate scientific texts. Thus they also satisfied the curiosity of the aristocracy, which was increasingly interested in science. Still lifes, for example, had their origin in the widespread taste for the study of botany (XII, PL. 479). Illustrations of scientific texts, such as those of Giacomo Ligozzi (XII, PL. 480), sometimes rose to the level of works of art (see SCIENTIFIC AND MECHANICAL WORKS).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

The study of animal forms was related to the study of temperament; there was a search for the similarities between human physical expressions and those of various animal species (III, PL. 205; see CHARACTERIZATION: PSYCHOLOGICAL, PHYSIOGNOMICAL, AND ETHNIC). Thus the animal was decisively introduced into those artistic trends which aimed at depiction of character and which dominated in caricature (III, PL. 423) and in the illustration of narratives and fables. These trends persist in modern animated cartoons (III, PL. 336).

In the 17th and 18th centuries, with the development of genre subjects (see GENRE AND SECULAR SUBJECTS) fruit and flowers became simple pictorial motifs (PL. 475). Artists specialized in particular subjects: there were fruit painters (such as Pietro Paolo Bonzi, called "Il Gobbo dei Carracci"), flower painters (such as Mario Nuzzi, known as Mario de' Fiori), and animal painters (such as Frans Snyders). The production of the English sporting painters of the 19th century was noteworthy (PL. 472).

In modern Western art, it is only in ornamentation that plant and animal representations appear as autonomous elements with a precise function. They are found in the "grotesques" created by the school of Raphael (e.g., by Giovanni da Udine; PL. 464) and their use persisted up to the 19th century. The motif of garlands of fruit and flowers, widely used in the Renaissance, was extended to fresco decorations from the 16th century on (XI, PLS. 98, 100) and appears also in sculptural decorations. Sometimes animal heads or fruits have symbolic and heraldic values in Renaissance and baroque art (qq.v.), but in general they are used as more or less stylized, purely decorative motifs.

Plant motifs were favored in rococo (q.v.) architectural decoration (XII, PLS. 163–165, 180, 181). Neoclassic decoration took up such stylized motifs as the palmette, laurel, sphinx, lion, and eagle (V, PLS. 450, 451; XII, PL. 464).

Neo-Gothic art and Pre-Raphaelitism and related movements, up to that of Arts and Crafts, took plant motifs from late Gothic and classical antiquity.

With Art Nouveau (q.v.) the free forms of plant motifs inspired new forms in architecture (cf. the iron structures of V. Horta; I, PL. 424), as well as in decoration (PL. 473) and especially in graphic art. This was a last expression of nature in an art that has become increasingly abstract.

Among other modern trends, animal and plant representations often appear in the works of the neoprimitive painters as elements in an enchanted world (XI, PL. 330).

Plant and animal forms in architecture. The use of plant and animal forms in architecture often occasions the appearance of irrational, anticlassical tendencies. This is particularly evident when the plant forms become normative not only for the single parts (such as the capitals) but also for the entire structure.

Perhaps the two most anticlassical architectural styles, rococo and Gothic, appeared to their contemporaries to be intimately connected with the plant world and drew on this presumed connection for rich plant motifs. The theory of the origin of Gothic art in plant forms has been reiterated many times, in both a positive and a negative sense. The great northern cathedrals have been compared to majestic forests (Goethe, Chateaubriand, et al.; cf. J. Baltrušaitis, *Aberrations, légendes des formes*, Paris, 1957, pp. 52–96; P. Frankl, *The Gothic: Literary Sources and Interpretations through Eight Centuries*, Princeton, 1960, p. 481 f.). Curious experiments were also made to prove the naturalness and rationality of the Gothic style, detested by some because of its divergence from classical and Renaissance models. J. Hall (*On the Origin and Principles of Gothic Architecture*, Transactions of the Royal Society of Edinburgh, IV, 1798) tied equidistant stakes of ash with willow branches that interlaced above, forming a kind of ogival vault. Other shrubs were spires, windows, and portals, and when they flowered, the buds and leaves opened at approximately the same points as where the Gothic architects placed plant decorations.

During the Renaissance architectural elements came to have an even more direct relation to plant forms. Interest in ornamental motifs with festoons (used extensively by Mantegna; IX, PL. 322) and topiary work (whose simple and geometric form derived from Alberti) was followed by experiments aimed at achieving an even more intense relation, culminating in mannerism. Some of the sculptural decorations of Bomarzo (X, PL. 137) seem to have been designed to be surrounded by abundant and wild vegetation (for example, the steam, which gushes out of a gaping opening and flows past an enormous tortoise). In the Medici villa at Pratolino Buontalenti constructed a hanging pavilion for banquets, accessible by means of a staircase, around a gigantic oak, in an unusual anticipation of rococo. At the same time, a complex type of rustic decoration was used in architecture; together with facings of rough-hewn stone blocks or of plaster that imitated corroded stone, real or artificial plants and faithful reproductions of animals (sometimes copied from life) assumed primary importance. The sounds of the animals were reproduced by hydraulic instruments. Other unusual facing materials used at this time were shells and compositions of coral.

Although festoons of leaves and fruit and representations of birds and other animals were frequently used in baroque decoration it was not until the emergence of the rococo style that the wilder, more natural forms of vegetation were used again, especially in southern Germany and the castles on the Rhine. Rococo adopted the plant forms of Gothic, liberating them from the geometric scheme of the ogival arch and freeing vines, leafy branches, and flowery boughs to spread through space. This sculptural and chromatic transformation of rococo churches into ever-flowering gardens once more proposed the theme of Paradise. With the same type of decoration, architects sought to bring living nature into palace interiors (e.g., the long gallery of the little-known palace of Bayreuth, an undoubted prototype of Art Nouveau). This taste for plant forms influenced decorative schemes, in which a preference for interlacing structures became evident, even though more broad in their conception than earlier work of this type. The splendid banisters of the great staircase of the Castle of Augustusburg, Brühl, near Bonn, is almost an uninterrupted flowering vine; there was no comparable decoration until that of Art Nouveau (cf. I, PLS. 468, 469), which, however, served a more rigorous architectural function and was therefore based on geometric rather than organic schemes.

Eugenio BATTISTI

BIBLIOG. *Antiquity*: *a. Prehistoric*: P. Graziosi, L'arte della antica età della pietra, Florence, 1956. *b. Steppe cultures*: EAA, s.v. *Animalistico stile arte*; M. Krasceninnicowa, Gli Sciti, Rome, 1942; T. Talbot Rice, The Scythians, New York, 1957. *c. Egypt*: A Springer and C. Ricci, Manuale de storia dell'arte, I, Bergamo, 1927; G. Posener, Dictionnaire de la civilisation égyptienne, en collaboration avec S. Sauneron et J. Yoyotte, Paris, 1959. *d. Mesopotamia, the Hittites, Phoenicians, Persians*: V. Sarzec and L. Heuzey, Découvertes en Chaldée, Paris, 1884–1912, I, p. 266, II, pl. XLVI, 3; F. Cumont, Les religions orientales . . ., Paris, 1929, pp. 45, 221; G. Desrouches-Noblecourt, Interprétation et datation d'une scène gravée sur deux fragments d'un ricipient d'albâtre . . . d'Ugarit, in C. F. A. Schaeffer, Ugaritica, III, Paris, 1956, p. 179 f.; G. Picard, Le monde de Carthage, Paris, 1956; H. Frankfort, The Art and Architecture of the Ancient Orient, Harmondsworth, 1958; E. Akurgal and M. Hirmer, Die Kunst der Hethiter, Munich, 1961; D. Harden, The Phoenicians, London, 1962; G. Pesce, Archaeologia e preistoria, Sardegna, I, (ed. F. M. Stevani), Milan, 1963. *e. Crete and Mycenae*: M. Hirmer and S. Marinatos, Kreta und das Mykenische Hellas, Munich, 1959 (Eng. trans., New York, 1960); E. G. Kenna, Cretan Seals, Oxford 1960. *f. Greece*: F. Imhoof-Blumer and O. Keller, Tier und Pflanzenbilder auf Münzen und Gemmen des klassischen Altertums, Leipzig, 1889; G. M. A. Richter, Animals in Greek Sculpture, Oxford, London, 1930; G. E. Rizzo, La base di Augusto, Naples, 1933; S. D. Markman, The Horse in Greek Art, Baltimore, 1943; R. Hauglid, The Greek Akanthus, Acta Archaeologica, Copenhagen, XVIII, 1947; J. D. Beazley, Attic Black-figure Vase-painters, Oxford, 1956; E. Langlotz and M. Hirmer, Die Kunst der Westgriechen, Munich, 1963; J. F. Crome, Die goldenen Pferde von San Marco, BCH, LXXXVII, 1963, pp. 209–28. *g. Etruria:* G. Q. Giglioli, Arte Etrusca, Milan, 1935; M. Pallottino, La peinture étrusque, Geneva, 1952; M. Pallottino, Etruskische Kunst, Zurich, 1956; W. L. Brown, The Etruscan Lion, Oxford, 1960. *h. Early Sardinia*: G. Lilliu, Sculture della Sardegna nuragica, Cagliari, 1956. *i. Rome*: E. Strong, Roman Sculpture from Augustus to Constantine, London 1907; E. Strong, Art in Ancient Rome, New York, 1924; M. Squarciapino, La scuola di Afrodisia, Rome, 1943; A. Maiuri, La peinture romaine, Geneva, 1952; J. Heurgon, Trésor de Ténès, Paris, 1958.

Pre-Columbian America: S. G. Morley, The Ancient Maya, Oxford, 1946; W. Krickeberg, Altmexicanische Kulturen, Berlin, 1956; A. R. Sawyer,

CC-0. Anand Jaiswal. Digital Preservation Foundation, Chandigarh

Collezione Nathan Cummings d'arte antica del Peru, Rome, 1956; E. S. Thompson, The Rise and Fall of the Maya Civilization, London, 1956; E. della Santa, Les vases péruviens de la Collection de LL. MM. le Roi Albert et la Reine Elizabeth de Belgique, Brussels, 1962; A. Emmerich, Art before Columbus, New York, 1963; P. Westheim, The Sculpture of Ancient Mexico, New York, 1963.

Byzantine and medieval: K. Lamprecht, Initiale Ornamentik des VIII bis XIII Jahrhunderts, Leipzig, 1882; E. Lambin, La flore sculpturale du Moyen-Age, GBA, XXI, 1889, pp. 291–431; R. Graul, Die Pflanze in ihre dekorativen Verwertung, Leipzig, 1904; E. Underhill, The Fountain of Life, BM, XVII, 1910, pp. 99–119; A. Schmarsow, Entwicklungsphasen der germanischen Tierornamentik, JhbPreussKSamml, XXXII, 1911, pp. 143–80; O. M. Dalton, Byzantine Art and Archaeology, XIII, Oxford, 1911; C. Druce, Animals in English Woodcarvings, London, 1914; A. Haupt, Entstehung der Romanischen Ornamentik, Mnh. f. Kw. Leipzig, VIII, 1915, pp. 309–28; G. Battelli, La simbologia della piante e dei fiori nell'arte cristiana del Medio Evo. Studia Picena, 1924, pp. 149–52; J. Strzygowski, Das Tier in Schmuck des Osebergschiffes, ZfbK, LIX, 1925–26, pp. 57–65; F. Neugass, Teufel, Tiere und Dämonen in mittelalterlichen Chorgesthühl, Kunst und Künstler, XXV, 1926–27, pp. 415–25; J. Baltrušaitis, La stylistique ornamentale dans la sculpture romaine, Paris, 1931; G. Duthuit, La sculpture copte, Paris, 1931; R. Bernheimer, Romanische Tierplastik, Munich, 1931; W. Born, Das Tiergefecht in der nordrussischen Buchmalerei, Sbornik statej izd. Seminarijen imeni N. P. Kondakova, 5, 1932, pp. 63–95, 6, 1933, pp. 89–108, 7, 1935, pp. 61–80; E. Guillot, Ornamentation des manuscrits au Moyen-âge, Paris, 1935; B. Selin, Die Altgermanische Thier Ornamentik, Stockholm, 1935; K. Weitzmann, Die byzantinische Buchmalerei des 9 und 10 Jahrhunderts, Berlin, 1935; R. Wittkower, Miraculous Birds, Warburg, 1, 1937–38, pp. 253–57; J. F. Carmondy, De Bestiis et aliis rebus and the Latin Physiologus, Speculum, XIII, 1938, pp. 153–59; C. McDermott, The Ape in Antiquity, Baltimore, 1938; R. Wittkower, Eagle and Serpent, A Study in the Migration of Symbols, Warburg, 2, 1938–39, pp. 293–325; Z. Ameisonova, The Tree of Life in Jewish iconography, Warburg, 2, 1938–39, pp. 326–45; J. Lassus, Sanctuaires chrétiens de Syrie, Paris, 1947; P. A. Underwood, The Fountain of Life, Dumbarton Oaks Papers, 41, 1950, pp. 43–130; J. Baltrušaitis, Le Moyen-âge fantastique, Paris, 1955; L. Behling, Die Pflanze in der mittelalterlichen Tafelmalerei, Bohlan, 1957; A. Grabar, L'iconoclasme byzantin, Paris, 1957; L. I. Ringbom, Paradisus terrestris, Helsingsforsiae, 1958; G. Vann, Der Lebensbaum, Studien zur christlichen Symbolik, Zurich, Cologne, 1959; L. Budde, Mosaiken von Misis-Mopsuhestia in Kiliken, Pantheon, n.s. XVIII, 1960, pp. 118 f.; G. Danielou, Les symboles chrétiens primitifs, Paris, 1961; M. W. Robinson, Fictitious Beasts, London, 1961; V. H. Debidour, Le bestiaire sculpté du Moyen-âge en France, Paris, 1961; J. Theodorides, Remarques sur l'iconographie zoologique dans certains manuscrits médicaux byzantins et un étude des miniatures zoologiques du Codex Vaticanus Graecus, 284, Jhb. d. Ö. Byz. Gesellschaft, X, 1961, pp. 21–29; E. Coche de la Ferté, Palma et laurus, Un monogramme et un objet d'art paléochrétiens en relation avec les courses de l'hippodrome, Jhb. der Berliner Museen, 3, 1961, p. 134–47; F. Wield, Drachen in Beowulf und andere Drachen, Vienna, 1962; L. L. Moller, Bestiarium, Tiere in der Kunst der letzen fünf Jahrtausende, Hamburg, 1962; J. Mahn, Der Elefant als Träger von Bauwerken, Erbe und Gegenwart, J. Jahn zum 70 Geburstag, 1963, pp. 479–83; G. de Francovich, L'Egitto, la Siria e Costantinopoli, problemi di metodo, RIASA, n.s. XI–XII, 1963, pp. 83–229; L. Behling, Die Pflanzenwelt der Mittelalterlichen Kathedralen, Cologne, 1964; D. M. David, Anglo-Saxon Ornamental Metalworks, 700–1100, in the British Museum, London, 1964; W. von dem Steinem, Altchristliche-mittelalterliche Tiersymbolik, Symbolon, IV, 1964, pp. 218–43; G. de Francovich, Il concetto della regalita nell'arte sasanide e la interpretazione di due opere d'arte bizantina del periodo della dinastia macedone: la cassetta eburnea di Troyes e la corona di Costantino Monomaco di Budapest, Arte Lombarda, IX, 1964, pp. 1–48.

Modern: see bibliogs. of ART NOUVEAU; ORNAMENTATION; SCIENTIFIC AND MECHANICAL WORKS.

• •

Illustrations: PLS. 454–475.

ZOROASTRIANISM. Zoroastrianism was the religion of Iran previous to the spread of Islam (q.v.) and takes its name from its founder Zoroaster, about whose personality and dates little is known. Modern exegesis tends to place his activity between the 8th and 6th centuries B.C. He undertook to reform and unify the religious thought of the ancient Iranian peoples — which, being fundamentally pantheistic and animistic, was close to that of Vedic India (see HINDUISM). The religion he taught was essentially monotheistic, even though it included figures of secondary divinities, subordinate to Ahura Mazda (Per., Ormazd), and it more or less accentuated elements of dualism in the division between the forces of good and evil, which mankind follows of its own free will. In choosing good, man is aided by the Zoroastrian message, the instrument of salvation given him by Ahura Mazda through the mouth of Zoroaster. The thoughts of Zoroaster are expressed in the Gathas, a collection of verse sermons, which constitute the oldest part of the Avesta, the canonical book of Zoroastrianism.

This religion did not, however, remain static in every part of Iran and at all times, but underwent variations and swings, sometimes even a reversion to attitudes preceding the Zoroastrian reform, especially in the Achaemenid period (see DIVINITIES). Under the Sassanid dynasty (see SASSANIAN ART) Zoroastrianism become the state religion, losing its original character of a universal message and becoming more decidedly dualistic. It survived in Iran through Islamic times up to the Mongol invasions, when a sort of Diaspora took place, especially toward India, where a community, that of the Parsis, still exists.

• •

In its most remote period Iranian religion, as far as it is possible to analyze its development, shared a characteristic trait with other Indo-European religions: it was aniconic, that is, it did not use images as representations of the godhead. This fact is known from Herodotus, with regard both to the Iranian tribes in the West (Medes and Persians; I, 131) and those in the North (Scythians; VI, 69). Herodotus's statements are confirmed by Clement of Alexandria (*Protreptikos*, V, 65, 1) for the Medes and Persians. At the same time, also in accordance with other Indo-European religions, symbols were freely used to represent the gods (see SYMBOLISM AND ALLEGORY). Not only the rite of sacrificing to the god of the warrior function at the foot of a huge heap of branches and logs, on top of which a short sword (*akinakes*) was placed, but also the legend of the origins of the Scythian tribes attests to the use of symbols for the deities of the three social functions (ruler, warrior, nourisher). In this legend the cup represents the god of the ruler function, the sword or spear or arrow the warrior function, and the plough and the yoke the nourishing function (cf. Herodotus, IV, 5; idem, IV, 62; Ammianus Marcellinus, XXXI, 2, 23; Curtius Rufus, VII, 8). However, as time went on and contacts became more frequent with Mediterranean and Near Eastern cultures possessing rich iconic traditions in religious art, the situation changed completely and from the reign of Artaxerxes II (404–359 B.C.) images were used as representations of Iranian deities. When Zoroastrianism reached the West, probably the old aniconic tradition was being supplanted by new tendencies.

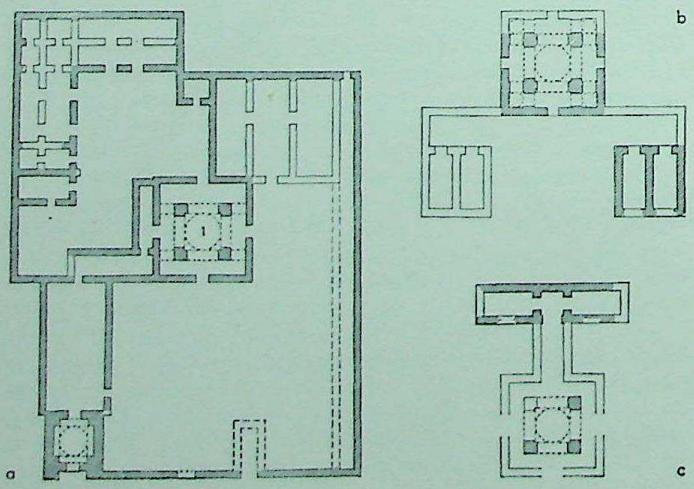
In other fields of sacral art Iran was possessed of much older traditions. The first known specimen of religious art to be classified with certainty as Iranian — for it has not yet been ascertained whether the art of Zawiyeh with its obviously mythological scenes can in fact be so classified — dates from the mid-6th century B.C. and is Median. It shows a ritual scene of great significance — a priest officiating at an altar (Herzfeld, 1941, fig. 313) — and is a relief over the entrance door to the tomb of Qyzqapan (Kizkapan) in Shahrzur (Kurdistan), dating between 600 and 550 B.C. Two men are shown worshiping the fire on the altar between them. The fire itself is pictured in a crude and rudimentary way. However, except for this detail, this is a fully developed art, the tradition of which passed on into Old Persian art. The two men are dressed in the Median coat and trousers, over which one of them wears the usual fur-lined cloak with hanging empty sleeves. On their heads they have the Medo-Persian cap with its mouth cover (*paitidāna*). Each holds a bow in his left hand, a detail that is a characteristic heritage from Assyrian art and recalls the hunting reliefs of Ashurbanipal with sacrificial scenes. The absence of the ritual requisite, the barsom (sheaf of twigs; Avestan, *baresman*), might indicate that the two men are not to be regarded as professional priests, though this seems rather improbable. The small gold plaques of the Oxus Treasure (Br. Mus.) show similar representations of officiating Median priests, but they carry the barsom in their left or right hand (Herzfeld, 1941, fig. 314, no. 4). In some cases the priest, also dressed in the Median fashion, is holding a vessel that it would be tempting to classify as a libation vessel. These priests are Magi, belonging to the famous priestly caste of the Median tribes. It is known from the tablets of the Persepolis treasury that the Magi served not only as fire attendants but also as libation priests. The Dukkān-i-Dāūd tomb, on the Ecbatana-Babylon road, shows an officiating priest wearing the traditional

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

cap with its mouth cover and holding the sacred twigs, but dressed in Elamite fashion (Herzfeld, 1941, fig. 315). In a relief over a small tomb at Sakavand (south of Kermanshah) the same scene is depicted as at Qyzqapan; at Sakavand, however, the single priest is shown wearing the Old Persian undulating dress and in a position of adoration before two altars, flanked by another very small human figure, both being represented with uplifted hands and without the barsom (Herzfeld, 1941, fig. 316).

The motif of a Magian priest, dressed in Median costume, worshiping in front of a fire altar obviously was a favorite theme in Iranian religious art, for it spread with the Iranian political and cultural expansion. Such a representation, dating from Achaemenid times, is shown on a Cappadocian fire altar from Asia Minor (Widengren, 1956, fig. 6). The Median Magi had adopted Zoroastrianism as their own religion at a rather early period, but they had integrated it into their own Zervanite system (for Zurvan, the divinity of Infinite Time, see VIII, col. 258). The outcome was a highly syncretistic product, and it was in this form that Zoroastrianism was propagated in the West by the Magi. The remains of Iranian sacral art found in the West are thus colored by the syncretistic beliefs and customs of the Magi; they are not expressions of the original Zoroastrianism. An illustration is furnished by the relief from the neighborhood of Dascylium in Asia Minor, where two Magi with their barsoms are shown together with the cattle to be sacrificed (PL. 476; see VIII, col. 275–276). In fact, it is well known that the Magi also acted as sacrificial priests; bloody sacrifices, however, were forbidden by Zoroastrianism.

It was presumably shortly before or during the Achaemenid period (550–331 B.C.) that a real sacral architecture was introduced, for in earlier times the Iranians knew no other places of worship than those provided by nature itself. According to Herodotus (I, 131), they worshiped their gods on the peaks of the mountains. Temples were probably constructed rather early, as is shown by the excavations in and around Pasargadae, Susa, and Persepolis (PL. 476). Altars were used during the Median hegemony, but whether the Median tribes also had temples at that time is not known. At a later date the simplest form of fire temple was a square-built structure of modest dimensions (33×33 ft.) with a roof carried by four columns (see SASSANIAN ART); presumably the holy fire was kept in an inner room (FIG. 967). Fire altars, however, were also erected in the open air, for at Behistun and Persepolis there are reliefs showing Darius I as a high priest officiating before a fire altar. He holds a bow in his left hand (a Median heritage) and raises his right hand in a gesture of prayer toward the winged sun disk, the symbol of Ahura Mazda (cf. IV, PL. 216; XII, PL. 525) — a symbol that it would also seem the Medes had inherited from their Assyrian neighbors (see DIVINITIES; SYMBOLISM AND ALLEGORY).



Sassanian fire temples (surviving walls are indicated by hatching). (*a*) Kunar Siah, monumental complex: (1) fire temple (*chaḥār ṭāq*). (*b*) and (*c*) Temples of Farrashband: (*b*) Tall-i-Jangi; (*c*) Khurmā Yak (*from Iranica Antiqua, I, Leiden, 1961*).

Representations of religious scenes other than the fire ritual are difficult to classify as Zoroastrian and, as to the religion of the Achaemenid kings themselves, it is more than probable that they were not Zoroastrians in the strict sense of the word. In Parthian times (ca. 250 B.C.–A.D. 226) it is conceivable that other types of Iranian religion inspired the sacral art and architecture; during this period, however, Zoroastrianism was still the dominant religious factor in the province of Persis (Fars), once the home of the Achaemenid dynasty, after whose fall it was ruled by some petty princes, chiefly known from their coins. They styled themselves *frātadāra*, "fire keeper," and their coins show them as officiating fire priests in keeping with Achaemenid traditions (Sarre, 1925, pl. 51, no. 14). The ruler, who claimed descent from the Achaemenid Great Kings, is pictured in the same position as Darius I, holding his bow in his left hand and raising his right hand in a gesture of adoration toward the symbol of Ahura Mazda, the winged sun disk. This divine figure is seen above a building, the roof of which has a curious appearance, probably to be interpreted as a representation of three fire altars. The temple building itself has much the same structure as what is known today as the Ka'ba-i-Zardusht (VIII, PL. 137). At the right is seen another cultic instrument, the ensign (*drafsh*), which played a considerable role in non-Zoroastrian cultic-social organizations; to judge from its appearance here, it was used in Zoroastrian circles at a fairly early date. The dynast officiating as the fire priest was most probably also the figure pictured in the relief on one of the stone jambs of a window of the temple excavated at Persepolis (Herzfeld, 1941, pl. LXXXVI). The relief shows him in the same position as on the coins, but holding in his left hand the barsom rather than the bow, and thus in perfect priestly attire.

The traditions of the *frātadāra* dynasts were inherited by the Sassanid rulers of Persis, who were themselves fire priests in the temple of Anāhitā in Istakhr. The religious art of the Sassanian period (226–641) does not seem, however, to carry on the traditions of the provincial art of Persis but to take up and develop those inherited from Parthian imperial art — as more suited to the claims of the new Great Kings. This Parthian art too shows the ruler and other prominent personalities in scenes of worship, for example, a Parthian prince before a goddess placed in an aedicula (Sarre, 1925, pl. 65). More important than this representation (whose precise meaning is obscure) are sacrificial scenes from both the western and eastern parts of the Parthian empire, showing a prince or nobleman officiating before an altar — for example, the relief from Hadda in Afghanistan (Rostovtzeff, 1935, fig. 52). The coinage of the Sassanid kings showing the ruler worshiping at the fire altar would seem to exhibit more agreement with these Parthian representations than with the *frātadāra* scenes. This is evidently in keeping with the general trend in early Sassanian art, which carried on even purely stylistic details of Parthian art — a trend much neglected up to now in the literature, where Sassanian art is spoken of as introducing a complete break with the preceding Parthian period. The coins, though of various types, do not show the Great King in the typical prayer position before the symbol of Ahura Mazda but represent him (normally together with another male figure, but sometimes with a female) as officiating before the fire altar, holding his long scepter (PL. 477; III, PL. 399); in the coins of Bahrām I the female figure is his queen. The fire burning on the altar is represented in a much more realistic manner than it was in Achaemenid times. It is remarkable that the coins of Ardashīr I (ca. 226–41) show the altar without any attendants (Sarre, 1925, pl. 143, no. 3). The scenes of investiture, where the deity hands the king the symbols of power, have a very old Iranian, probably northern-nomadic, tradition behind them. The first Sassanian representations show both god and king as horsemen, whereas the later reliefs picture them as standing figures: here, perhaps, is a link between the nomadic Parthian traditions and the ideology of the Zoroastrian church.

BIBLIOG. J. Darmestetter, Le Zend-Avesta, 3 vols., Paris, 1892–93; E. Herzfeld, Iranische Felsreliefs, Berlin, 1910; F. Wollf, Avesta, die heiligen Bücher der Persen, Strasbourg, 1910; F. Sarre, Die Kunst des alten Persien,

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Berlin, 1925; H. Lommel, Die Religion Zarathrustras, Tübingen, 1930; E. Herzfeld, Archaeological History of Iran, Oxford, 1935; M. Rostovtzeff, Dura and the Problem of Parthian Art, Yale Classical Studies, V, New Haven, 1935, pp. 157–304; A. Godard, Les monuments du feu, Āthār-e Irān, III, 1938, pp. 7–79; H. S. Nyberg, Die Religionen des alten Iran, Leipzig, 1938; O. Reuther, Sassanian Architecture, SPA, I, pp. 579–84, Oxford, 1938; G. Widengren, Hochgottglaube im alten Iran, Uppsala, 1938; E. Herzfeld, Iran in the Ancient East, London, 1941; H. W. Bailey, Zoroastrian Problems in the Ninth-Century Books, Oxford, 1943; K. Erdmann, Die Kunst Irans zur Zeit der Sasaniden, Berlin, 1943; A. Christensen, L'Iran sous les Sassanides, Copenhagen, 1944 (2d ed.); J. Duchesne-Guillemin, Zoroastre, étude critique avec une traduction commentée des Gathas, Paris, 1948; J. Duchesne-Guillemin, Ormazd et Ahriman, Paris, 1952; R. Ghirshman, Iran, from the Earliest Times to the Islamic Conquest, Harmondsworth, 1954; G. Widengren, Stand und Aufgaben der Iranischer Religionsgeschichte, Leiden, 1955; H. H. von der Osten, Die Welt der Perser, Stuttgart, 1956; J. Duchesne-Guillemin, La religion iranienne, Paris, 1957; A. Bausani, Persia religiosa, Milan, 1959, pp. 1–132; R. C. Zaehner, The Dawn and Twilight of Zoroastrianism, London, 1961; J. Duchesne-Guillemin, La religion de l'Iran ancien, Paris, 1962; M. Molé, Culte, mythe et cosmogonie dans l'Iran ancien, Paris, 1963.

Geo Widengren

Illustrations: pls. 476–477; 1 fig. in text.

ZURBARÁN. Francisco de. Spanish painter (b. Fuentes de Cantos, Badajoz province, Nov. 7, 1598; d. Madrid, Aug. 7, 1664). At the beginning of 1614 Zurbarán was in Seville as an apprentice in the studio of Pedro Díaz de Villanueva, a painter of religious images, formerly a pupil of Juan de las Roelas. A signed picture depicting the Virgin as a young girl being worshiped by a group of angels (Bilbao, Coll. Felix Valdés), dated 1616, reveals all the fundamental elements of the technique and pictorial concept that characterize Zurbarán's works. This painting, in fact, does not seem to be the work of a youth of eighteen; the eminently baroque treatment of the cloud landscape, into which almost monochrome heads of angels are integrated, reappears at a much later period of Zurbarán's career and calls for a certain caution in appraising this work. It is hoped that an adequate cleaning of this canvas will clarify a date that is dimly seen under an old restoration.

In 1617 Zurbarán established himself as a painter in Llerena, where he married María Paez, a mature woman with an inheritance; they had three children. In 1623, after the death of his wife, he married Beatriz de Morales, a widow. Many of the works from this period, mentioned in contracts, have been lost, although those which have survived reveal Zurbarán's artistic personality in these youthful years; these include the *Virgin Healing St. Reginald of Orléans* and the *Apparition of the Virgin in Soriano* (1626–27; Seville, S. Magdalena, formerly S. Pablo); the imposing *Crucifixion* (1627; pl. 480), executed for the sacristy of the Church of S. Pablo; the *St. Serapion* (1628; pl. 480); and the St. Bonaventura cycle, four paintings executed in 1629 (one in Dresden, Gemäldegal.; two in the Louvre, pl. 478; the fourth one, formerly in Berlin, Staat. Mus., was destroyed in 1945). These works belong to the realistic school dominant in Spanish painting at the beginning of the 17th century, although to its more conservative and traditional aspect; all of them reveal a tendency toward abstraction and constant forms. The details are always sober, and the figures, which stand out from a neutral background, appear to be self-contained. The colors are bright and lustrous, and the chiaroscuro is somewhat harsh. The light, concentrated on the folds of the clothes and mantles, comes from a single source, with almost horizontal rays that give off tenuous reflections. The atmospheric depth disappears or is reduced to a minimum, a result of the painter's obsession with an ideal of perfection combined with a need for constant, although restrained, search and experimentation. The drawing, in spite of its schematic tendency, is always adapted to the required pictorial qualities, revealing the influence of the Sevillian 16th-century mannerists, particularly of Pedro de Campaña (Kempener).

Certain incongruities in the execution of the works from this early period must be the result of a beginner's lack of experience, but at the same time they are indicative of the ingenuousness and primitivism from which Zurbarán would never totally free himself. Zurbarán must certainly have had collaborators, for it is difficult to imagine that a single person produced the quantity of work for which he was contracted during his years in Llerena. One of the best paintings of this first period is the above-mentioned *Crucifixion*, which seems to have opened the doors to fame in Seville for the painter.

Zurbarán's innate realism is evident above all in the cycle dedicated to St. Bonaventura. His skillful manner of composing by means of the symmetrical distribution of space but not of the elements within it was evident in the *Visit to St. Thomas*, a canvas lost in the bombing of Berlin. The gestures of the figures also constitute a notable element in Zurbarán's paintings. Frequently the slow and quiet gestures contrast vigorously with the orthogonal outline of the axis and give a sense of relative movement to the work. In spite of a certain archaism, the two scenes of the same cycle in the Louvre (pl. 478) are also very impressive. The composition runs parallel to the surface of the painting; there is a diagonal movement in the foreground, but not toward the back. Even the corporeal abstraction lacks equilibrium in these early works.

The undated works of this first period include the picture depicting the Holy Family with SS. Anne, Joachim, and John (Madrid, Marquise of Campo Real Coll.) and a Crucifixion (Seville, Mus. Provincial de Bellas Artes), which is notable for its sculptural quality. About 1629 Zurbarán drew the magnificent head of a monk (Br. Mus.), which demonstrates the solid drawing technique that underlies the heads of his saints and monks in the large pictures.

In 1629 the Seville town council wrote to Zurbarán, begging him to move his studio and residence there, declaring that the presence of the Estremaduran painter in the Andalusian capital would be a great honor and saying at the same time that "the art of painting is one of the greatest glories of the State." The invitation was accepted, and the painter moved to Seville with his family and eight servants, some of whom were undoubtedly assistants in the studio. His first work as *maestro pintor* of Seville, commissioned on Sept. 26, 1629, was the altarpiece of St. Joseph for the Church of the Trinidad Calzada; of this altarpiece the central part (Paris, Church of St-Médard), the *Flight into Egypt* (Besançon, Mus. B. A.), and the *Epihany* (London, private coll.) are extant. The quality of these three canvases reveals the painter's effort to justify his fame.

In May, 1630, the painters' guild in Seville, headed by Alonso Cano, ordered Zurbarán to submit himself to an examination. The town council supported Zurbarán's refusal, considering such an examination to be an affront to his standing as an artist, and as a vote of confidence, the council commissioned an Immaculate Conception for the town hall. At this time Zurbarán was working on the cycle of the Doctors of the Church, which was to decorate the Mercedarian library, and on the large scenes of the life of St. Peter Nolasco, founder of the Mercedarian order (II, pl. 188). The central work of this group is the *Recovery of the Image of the Virgin of El Puig* (pl. 481), which is harmonious in form and chromatic values and also marks the height of the master's maturity in pictorial synthesism. The saint on the right gave Zurbarán an opportunity to employ his talent for creating texture in white clothing that appears to be made of a soft, warm material.

Another noteworthy canvas, executed in 1630, is the *Vision of Blessed Alonso Rodríguez* (XII, pl. 377), in which Zurbarán employed the horizontally divided composition that El Greco used with such efficacy. Among the figures, which reveal careful study and great interpretative vigor, that of the angel playing the lute, one of the most beautiful figures in Spanish painting, is outstanding. The same split composition reappears in the *Apotheosis of St. Thomas Aquinas* (Seville, Mus. Provincial de Bellas Artes), painted in 1631 for the Colegio Mayor Universitario of Seville. For this canvas Zurbarán obviously followed the tradition in this genre, that of Francisco Pacheco and Juan de las Roelas, and studied the figures of the realist school; but he added to both these factors the powerful imprint of his own personality. The detail of the dialogue between SS. Ambrose and Gregory recalls Michelangelo in the tragic grandeur of the historical personages, who are profiled against a turbulent sky. Also magnificent are the studies of the heads of the kneeling figures in the lower section of the painting;

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

the subtlety of the architectural background is notable for being resolved with a *sfumatura*, rarely used by Zurbaran.

To the highest point of Zurbarán's career, between 1630 and 1632, belongs the *Vision of St. Francis in the Porziuncola*, which is admirable for the very human representation of the saint in ecstasy; in contrast, the upper section, with Jesus and Mary and the open sky with angels and clouds, appears remote and pallid. In the *St. Margaret* (PL. 482), from the same period, the monster in the lower background contrasts with the gentle figure of the saint, attired in the fashion of the first third of the 17th century. Also of this period is the *Vision of John the Baptist* (Barcelona, Coll. José Molas), which is undoubtedly Zurbarán's most felicitous representation of the imaginative, to which he himself was not particularly attracted; in in this canvas, however, the background landscape to the right, with the unreal light that falls from the sky, acquires an intense quality. Also from about 1632 is the canvas depicting the young Virgin praying (New York, Met. Mus.).

In the *Virgin as Protectress of the Carthusians* (also known as *La Virgen de las Cuevas*), *St. Hugo of Grenoble Visiting the Refectory*, and *Urban II with His Confessor, St. Bruno*, painted about 1633 for the Charterhouse of Seville (now Seville, Mus. Provincial de Bellas Artes), there is an evident lowering in quality — not in the composition and the balance of the chromatic tones, but in the execution of the figures, which lack the vigor, the sense of synthesis, and the material quality typical of Zurbarán, which suggests a probable collaboration. These paintings were followed by *Still Life with Oranges*, in the Contini Collection in Florence, one of the greatest still-life paintings in world art. Zurbarán's abstraction of volume, together with the intense tactile quality of each object represented, is here shown at its peak. The portraits of monks (ca. 1633; Madrid, Accademia de S. Fernando) show a slight departure from the idealizing and synthesizing manner and an approach toward realistic naturalism, with emphasis on the anecdotal, on the momentary expression, and on movement, which gradually replaced the serenity that had characterized his first period.

Zurbarán's realism is not expressed, as is that of Velázquez, by an extraordinary economy of means, nor does it evoke a world by the prodigious effect of light and shade; rather, it is realized in a manner that is faithful not in detail but in over-all effect. Thus Zurbarán abandoned the synthesizing manner of his previous period, at the same trying to destroy all vestiges of mannerism.

In 1634 Zurbarán was in Madrid, collaborating in the decoration of the new Buen Retiro Palace, which was being executed under the direction of Velázquez, and on November 13, he received 332 ducats for 12 canvases depicting the labors of Hercules (10 of which are now in the Prado). He also painted two historical pictures for the Hall of Realms, of which only one, the *Defense of Cádiz*, has been preserved (Prado). In these works Zurbarán accentuated the realism while maintaining the old technique, and each element, whether in the foreground or the background of the composition, is abundantly delineated and painted, showing that his contact with Velázquez did not alter Zurbarán's pictorial concept. He did not value the imaginative — not in the sense of the power of imagination but in terms of the ability to fulfill what it suggests by the smallest formal elements. Zurbarán, infatuated by the truth, relied on exact normal perception. As he was incapable of conveying space and atmosphere, he renounced them and searched for those neutral backgrounds which allowed an almost obsessive synthesis of the subject, always with an excessive simplification, with abundant contrasts obtained by sequences that limit the contours or by gradations of brilliance in order to arrive at a perfect balance between the chromatic scale and the tonal values.

Zurbarán's return to Seville, with the honorary title of *pintor del rey*, marks the beginning of one of his most productive periods. He integrated the style of his previous periods, that is, he recast the naturalistic realism of 1633–34 into a more abstract formula.

From 1636 on, Zurbarán executed the large cycle of canvases (representing saints, bishops, and friars) for the Charterhouse of Jerez de la Frontera, many of which are in the Museo Provincial de Bellas Artes, Cádiz. Compared to works of similar subjects from previous periods, these figures, although they have perhaps lost some of the grandeur of the earlier ones, offer a richer variety of rhythms; the attitudes are more varied and less conventional. The figures are often shown in profile, with hoods, capes, or mantles creating a play of undulating lines from the collar to the lowest folds; the heads have contained, intense expressions, with a mystical rigidity that reveals the inwardness of spiritual vision. In these works Zurbarán once more achieves a synthesis of form, eliminating the accessory details and accentuating the roundness of the volume.

The *Battle of El Sotillo* (1638; New York, Met. Mus.) also belongs to the cycle for the Charterhouse of Jerez de la Frontera. In this work two compositional schemes are integrated: one counterposes some figures in the foreground to the narrative background, as in the *Defense of Cádiz*, and the other has a horizontal subdivision. The upper section is reduced and evokes a feeling of upward flight, with a certain unreality that foreshadows the visionary subjects in the last paintings of Murillo (q.v.), who liked to counterpose the celestial and the terrestrial by technical means. Also part of the cycle for the Charterhouse of Jerez de la Frontera are the *John the Baptist in the Desert* (PL. 484) and the *St. Lawrence* (both dated 1638; Cádiz, Mus. Provincial de Bellas Artes). Both picture are executed with a simple flowing technique. It is remarkable that the almost undefinable impressions generated by Zurbarán's works never stem from a contrived *sfumatura*. Although his figures have almost ecstatic attitudes, they are nonetheless forceful and depicted with a solid technique.

The famous compositions in Grenoble (Mus. de Peinture et de Sculpture), *The Annunciation*, *The Adoration of the Shepherds*, *The Adoration of the Magi*, and *The Circumcision*, dated between 1638 and 1639, belonged to an altarpiece planned by Alonso Cano for the Charterhouse of Jerez de la Frontera. Of resplendent color, but maintaining the essential serenity that characterizes Spanish painting, these pictures demonstrate that Zurbarán had another period of great creativity. The most interesting work in this group is the *Adoration of the Shepherds* (PL. 479), of an idealizing naturalism, but imbued with the zest of the common people of 17th-century Spain and reflecting the preference for simple and direct themes rather than pompous ones. The Holy Family, angels, and secular persons intermingle in a pyramidal composition, which is repeated in the clouds by a group of angels preparing to sing, next to the one playing a harp. The diagonal axis is firmly established by the chromatic harmony that ties the red of the tunic of the harp-playing angel in the upper-right-hand corner of the composition and the skirt of the woman kneeling in the lower-left-hand corner. Here, as in the *Apotheosis of St. Thomas Aquinas*, the finest traditions of the Andalusian school are assimilated; the art of Roelas, Herrera, Velázquez, and Murillo coincides in the representation of these direct and very human types — for example, in the kneeling countrywoman or in the shepherd kneeling behind the proffered lamb. One of the great esthetic achievements of the *Adoration of the Shepherds* stems from the chromatic contrast, a double contrast of perspective and emotion based on the cold tonalities of the angels that appear behind the group formed by the shepherds and the Virgin.

Among the works of the cycle executed for the church (S. Jerónimo) of the monastery of Guadalupe in 1638–39, there are again certain irregularities that must be attributed to collaborators and helpers. The purely Zurbaránesque appears in the portrait of Gonzalo de Illescas, Bishop of Córdoba, and in the *Mass of Father Pedro de Cabañuelas*, in both of which the figures have a strong pictorial and intensely human quality. Outstanding in the former is the admirable still-life arrangement on the bishop's table, composed of an inkstand, a candlestick, books, a death's head, and a hourglass, along with an accent of life provided by the apple resting on a book on the base of the column that separates the room from the outside. Two other compositions in the Guadalupe cycle contain the contrast, evident in the earlier works, between the firmness of the volume of the bodies and the absence of atmosphere in an abstract space, even when there are clouds and landscape ele-

CC-0. Agamnigam Digital Research Foundation, Chandigarh

ments in the background. In the *Flagellation of St. Jerome* the action lacks drama and appears unreal, dominated as it is by the beauty and concern expressed in each individual figure, particularly the angel on the left side, who by the position of the arms appears to be offering the saint's suffering to the Saviour seated on a throne in the clouds. In the *Temptation of St. Jerome* (PL. 483) it is evident that for the artist the subject is a pretext for the realization of forms and colors, in this instance evidenced in the intense contrast between old age and youth. In these two pictures the realistic intention and the free brush strokes have been abandoned, and Zurbarán returns to his synthesizing formula, to the idealizing naturalism that is his most distinguishing mark.

This brilliant period is completed by several dated canvases. Of particular excellence is the one representing Christ the Redeemer (1638; Barcelona, Coll. Felix Millet), in which synthesism and realism are blended to produce a bright, solid image, lighted from within. Two admirable paintings depicting St. Francis, both from 1639 and now in London (Nat. Gall.), possess a dramatic quality, particularly the one showing the saint with his mouth half open, looking skyward, against a neutral background suggesting darkness. In the other (PL. 484), the landscape in the background and the movement of the left hand imply a concession, although exceedingly slight, to the outward narrative and to circumstance. This theme of the saint or the monk kneeling in darkness was so assiduously explored by Zurbarán that he completely mastered it, as is evident in the cycle of small pictures in the monastery of Guadalupe.

There are few dated works by Zurbarán from the long period between 1640 and 1658, an interval in which he was producing works for South America, which obliged him to organize his workshop to produce quantity rather than quality and to use collaborators extensively. The fact that documentation exists for much of the Zurbaránesque work produced for South America and that there exist many pictures from the master's workshop (some unquestionably by his own hand) which do not correspond to those listed in the documents testifies to the quantity of work the painter must have exported. An additional proof is the unquestionable influence his style had in South America during the late 17th and the early 18th century, principally in Peru. The most important commissions were those from Lima, including one for 34 pictures (now lost) for the Convent of Our Lady of the Incarnation and another for a cycle of 12 Roman emperors on horseback (also lost). Commissions also came from Buenos Aires.

In any case, Zurbarán continued to produce works for Spain; in 1643 or 1644 he painted several pictures for the parish church at Zafra, near Llerena; in 1644 he undertook a commission for two pictures for Carmona, and documents exist for other similar commissions. The canvases depicting the Blessed Henry Suso and St. Louis Bertram (Seville, Mus. Provincial de Bellas Artes), notable for their wide spatial conception, were painted during this period for the Monastery of Porta Coeli, as was the *Viaticum of St. Bonaventura* (Genoa, Pal. Bianco), one of Zurbarán's best studies in perspective.

At this time, widowed for the second time, his children married, he contracted a third marriage, from which four children were born. His expenditures rose while his prestige as a painter sank. The brilliant career of Bartolomé Esteban Murillo had begun, and within a few years he was the idol of the Sevillians. Zurbarán tried to adapt his own style to the Murillo pictorial concept, and as a result the master's last works evince a superficiality stemming from his concession to the suave lyricism of the young painter. The effort that this concession entailed, together with an evident crisis in morale and in material circumstances, brought Zurbarán to an existence of near misery, aggravated by the general decline in work because of the outbreak of the plague that hit Seville in 1649. Juan de Zurbarán, the only one of his sons who dedicated himself to painting, died in this epidemic. From this period of ill luck there is only one dated work, the *Christ Carrying the Cross* (PL. 484).

At some unknown date Zurbarán left Seville to try his fortune in Madrid. In a testimony of 1659 Zurbarán declared that he had lived at court for seven months. His removal to Madrid was another failure, because his works were now little appreciated; but he remained in the capital until he died on Aug. 7, 1664, in total destitution. He was survived only by Micaela, a daughter of his third marriage.

Among the works of this final period are the *Virgin and Child with St. John* (San Diego, Calif., Fine Arts Gall.) and the *Annunciation* (Philadelphia, Mus. of Art), both dated 1558; these two paintings mark Zurbarán's closest approach to Murillo's art in technique, in the use of clouds as a dynamic element, and in other aspects of pictorial concept. The *Holy Family* (Budapest, Mus. of Fine Arts) and the *St. Francis Kneeling* (Bilbao, Coll. Felix Valdés), dated 1659, express old themes with less drama than is evident in the paintings of 1639, but they are more intensively narrative. Among the better undated works from his last period, mention must be made of the *Christ at the Pillar*, in the church of Jadraque, in which the strained position does not lessen the beauty and expressiveness of the work. The technique of earlier works is reflected in the *Doctor of Law* (Boston, Isabella Stewart Gardner Mus.) and in the *St. Luke Before the Crucified* (Prado), in which Zurbarán attained the quality of his earlier greatest achievements.

The *Immaculate Conception* (Budapest, Mus. of Fine Arts), dated 1661, confirms Zurbarán's strong desire to return to his former style. The figure of the Virgin has a compelling sweetness in its beautiful, youthful aspect; the tonal contrast is excellent, as is the rhythmic quality. His last picture, *The Virgin and Child with St. John* (Bilbao, Mus. de Bellas Artes), from 1662, also has masterful touches, such as the still life of pears and apples, the soft undulating rhythm of the parallel figures of the Virgin and the Child, and the rigorously pyramidal and mystic composition. This canvas and another with the same theme, in the Grathvohl Collection, Zurich, close the cycle of Zurbarán's work.

BIBLIOG. J. Cascales y Muñoz, Francisco de Zurbarán, His Epoch, His Life and His Works, trans. by N. S. Evans, New York, 1918; H. Kehrer, Francisco de Zurbarán, Munich, 1918; M. S. Soria, Francisco de Zurbarán, A Study of His Style, GBA, XXV, 1944, pp. 33–48, 153–74; M. S. Soria, Zurbarán, Right and Wrong, Art in America, XXXII, 1944, pp. 126–41; P. Guinard, Los conjuntos dispersos o desaparecidos de Zurbarán: anotaciones a Cean Bermúdez, AEArte, LXXVI, 1046, pp. 249–73; ThB, s.v., 1947; M. L. Caturla, Bodas y obras juveniles de Zurbarán, Granada, 1948 (Anejos del Boletín de la Universidad de Granada, Conferencias, VI); J. A. Gaya Nuño, Zurbarán, Barcelona, 1948; F. Pompey Salgueiro, Zurbarán, su vida y sus obras, Madrid, 1948; M. S. Soria, Painting of Zurbarán, 2d ed., London, 1955; P. Guinard, Zurbarán et les peintres espagnols de la vie monastique, Paris, 1960; AEArte, XXXVII, April, 1964.

José GUDIOL

Illustrations: PLS. 478–484.

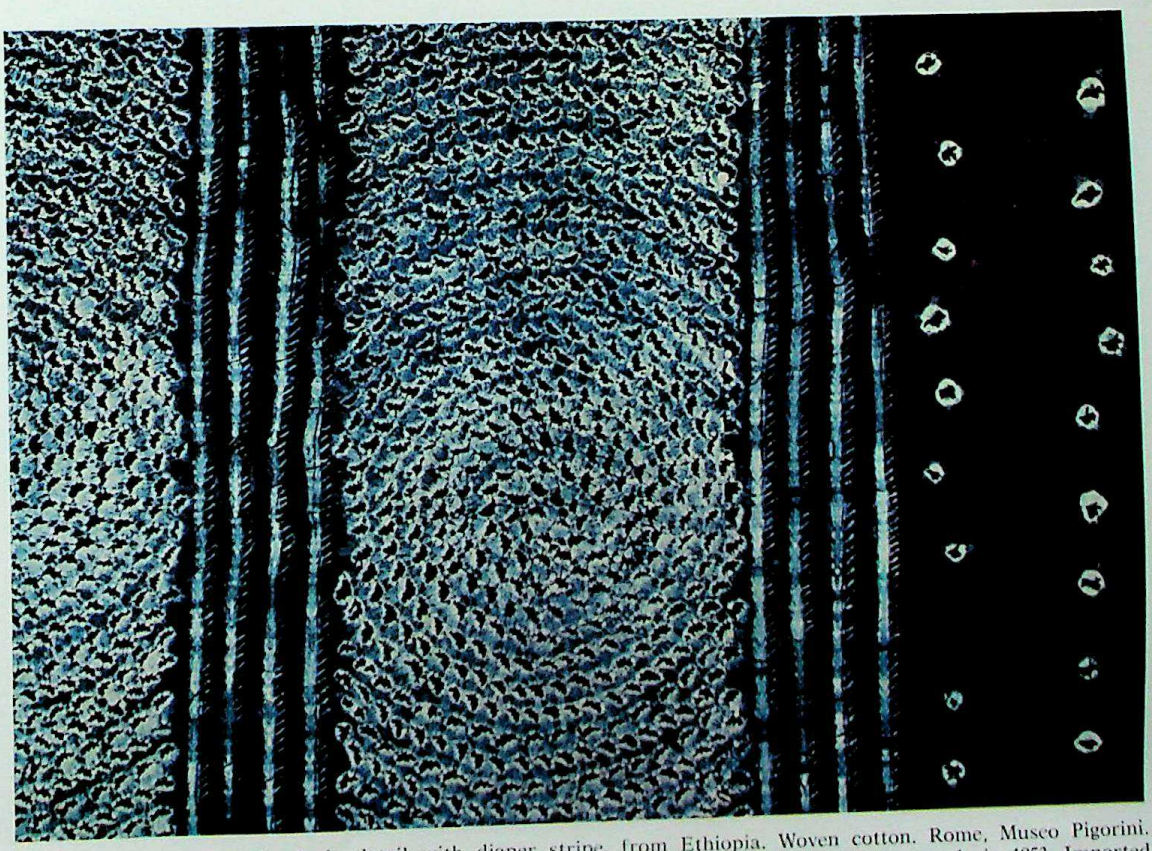
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

PLATES

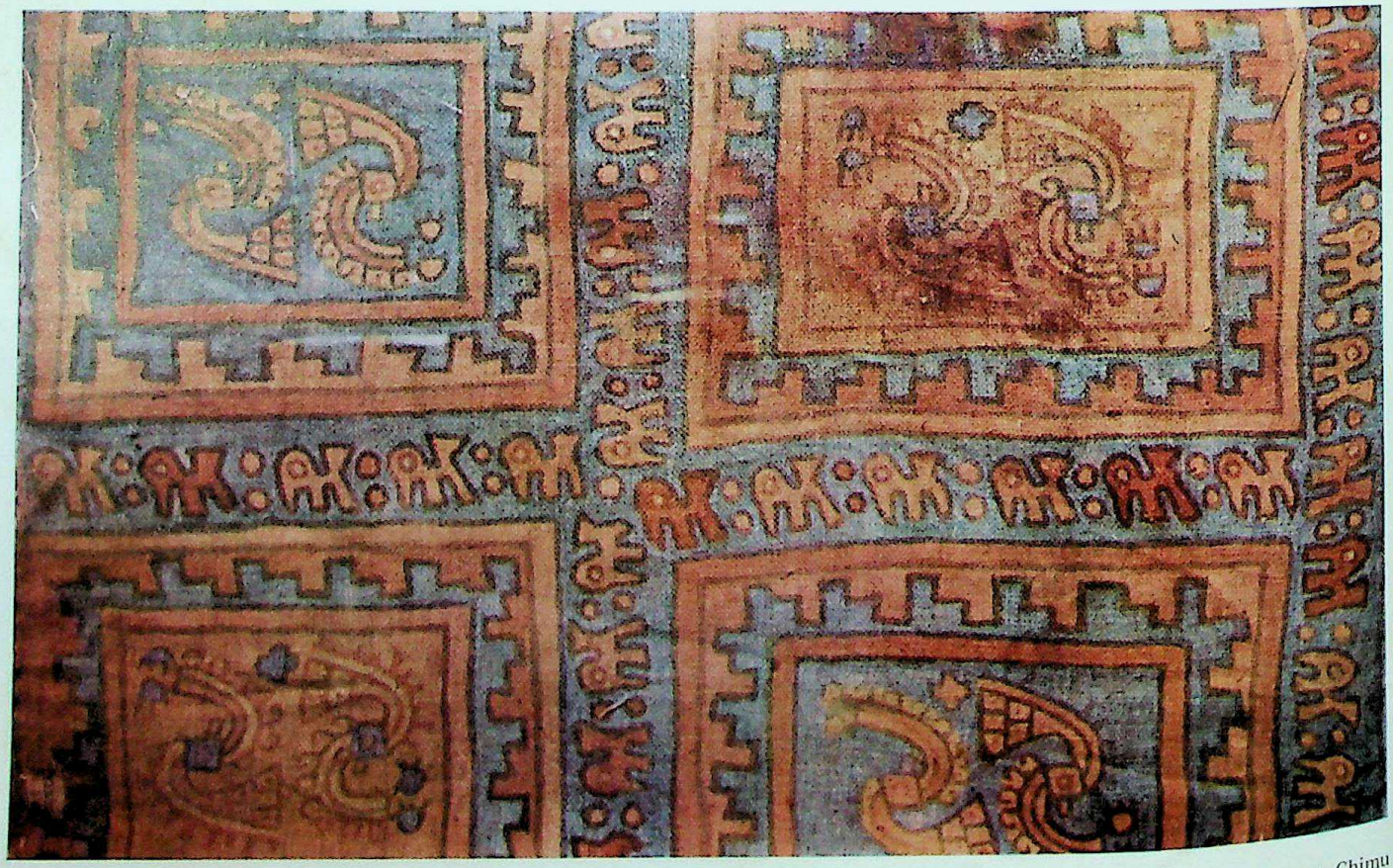
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 1. *Above*: Galla men's cloak, detail with diaper stripe, from Ethiopia. Woven cotton. Rome, Museo Pigorini. *Below*: Yoruba clump-dyed cloth (*plangi* process), from Abeokuta, western Nigeria, made in 1953. Imported cotton. London, British Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 2. Pre-Columbian. *Above*: Embroidered mantle, detail, from the Necropolis of Paracas, Peru. Wool and cotton. *Below*: Chimu painted cloth, northern Peru. Cotton. Both, Lima, Peru, Museo Nacional de Antropología y Arqueología.

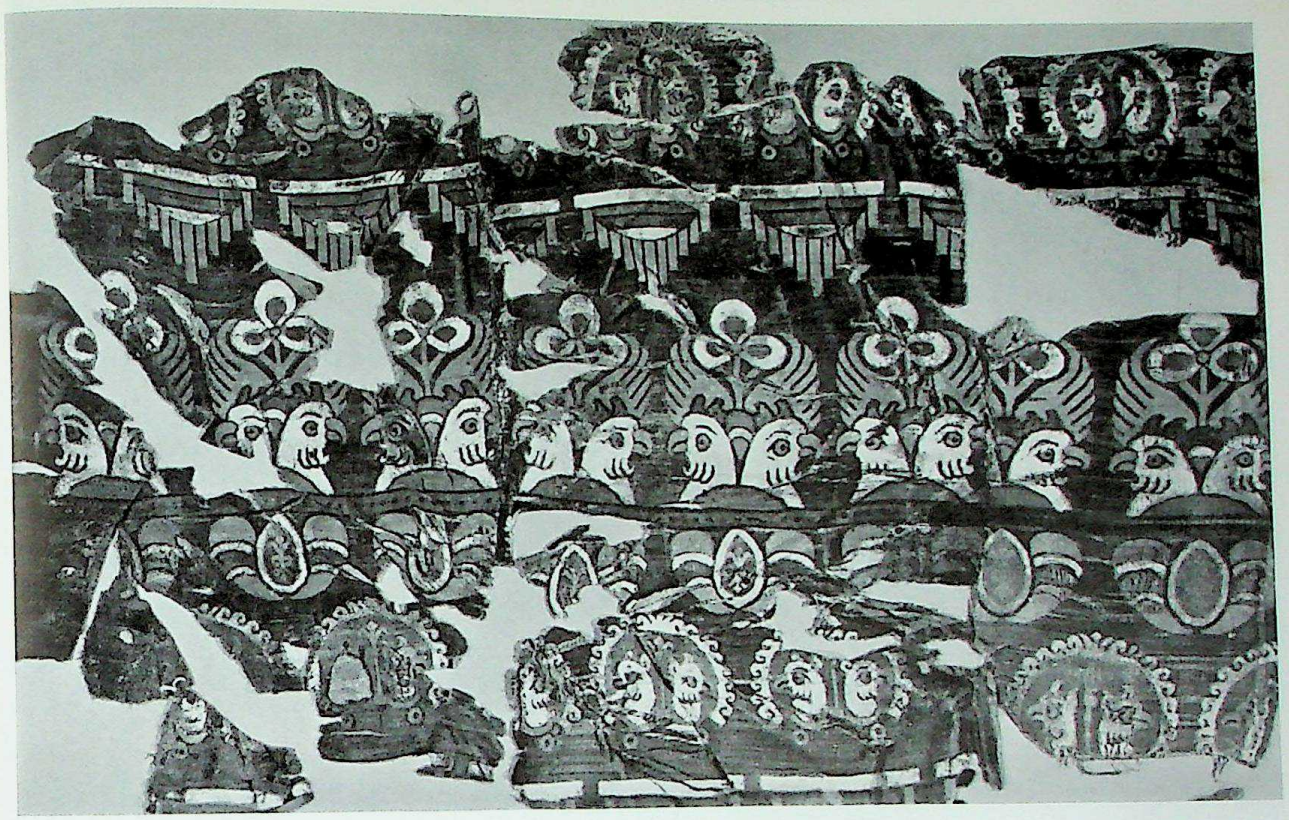
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 3. Tapestry-woven rug with lotus pattern, from the tomb of Kha, Thebes, 18th dynasty. Linen, 25⅝×19¾ in. Turin, Museo Egizio.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

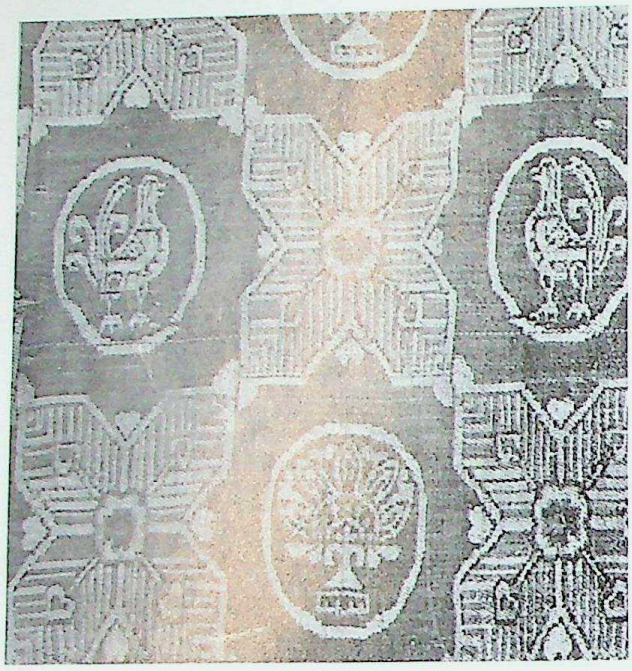
Pl. 4. Coptic embroidery, fragment with centaur and tree, from a necropolis at Akhmim (?), Egypt, 3d–4th cent. Wool and linen, $13^3/_8 \times 7^7/_8$ in. Lyons, Musée Historique des Tissus.

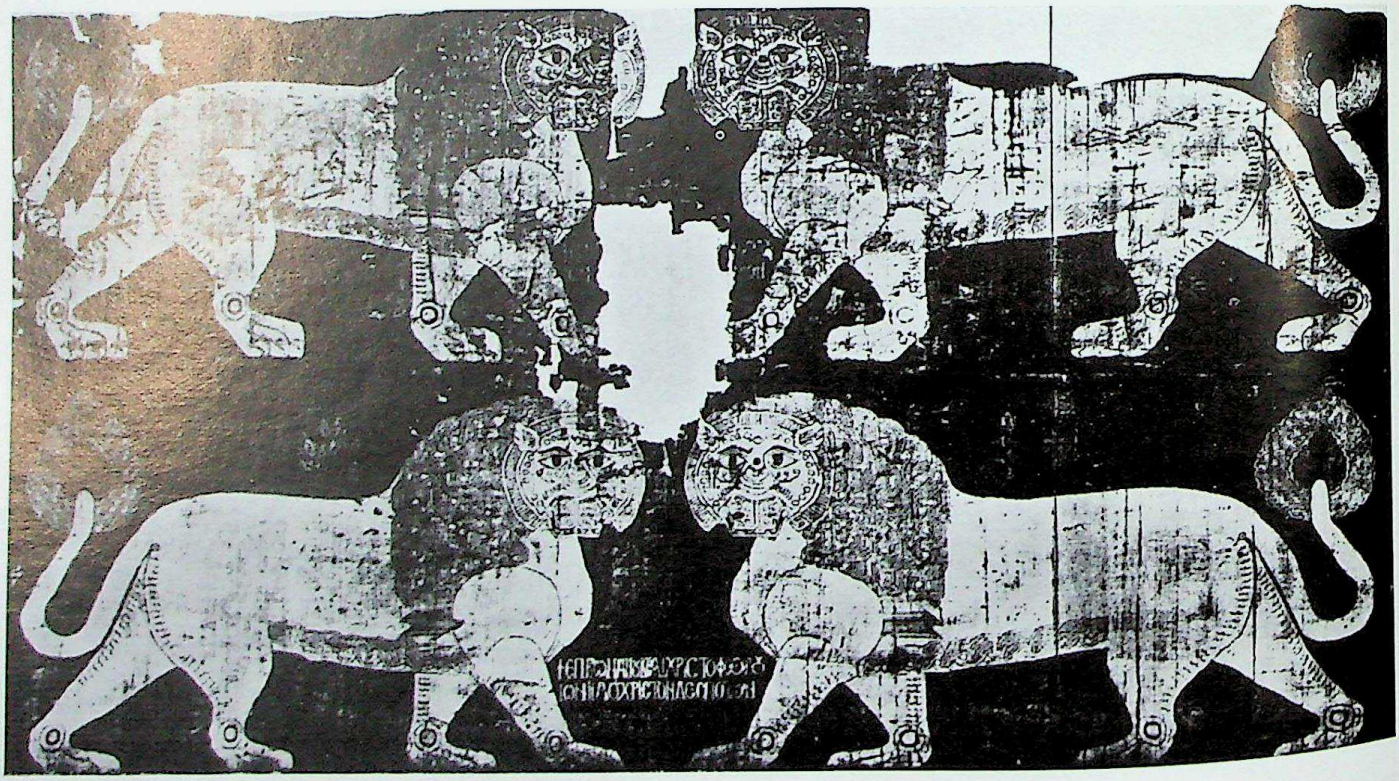
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 5. *Above*: Coptic textile in Sassanian style, from Antinoë, Egypt, late 5th cent. Woven silk. Paris, Louvre. *Below, left*: Hellenistic trimming band from a tunic, detail with tritons and nereids, 5th cent. (?). Silk, wool, and tapestry; w., 6¹/₄ in. Boston, Museum of Fine Arts. *Right*: Coptic roundel with the earth goddess Ge, ca. 4th cent. Linen and wool tapestry. Leningrad, The Hermitage.

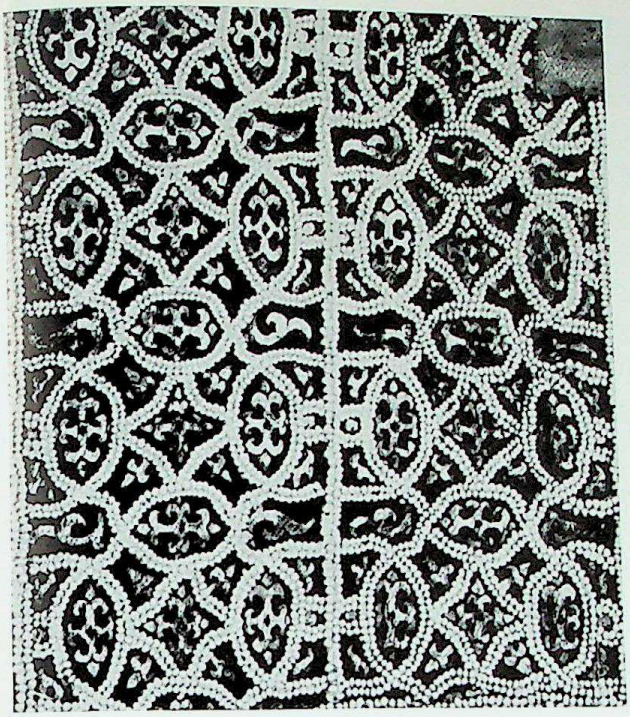
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

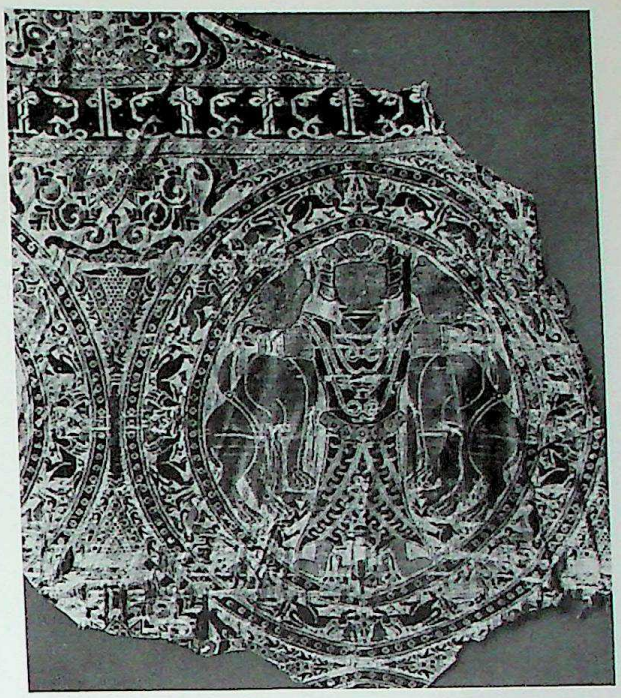




Pl. 6. *Above, left*: Silk twill with Sassanian motifs (Byzantine workmanship?), 7th–8th cent. Ht. of star, $4^{3}/_{4}$ in. Leningrad, The Hermitage. *Right*: Roundel in Sassanian style, with archers, excavated at Fayum, Egypt, 5th–6th cent. Wool and linen, $7^{1}/_{8} \times 7^{7}/_{8}$ in. Lyons, Musée Historique des Tissus. *Below*: Cloth with confronted lions, formerly at Siegburg Abbey, Germany, woven in Constantinople, 921–31. Silk; l. of lion on left, $26^{5}/_{8}$ in. (Destroyed.)

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



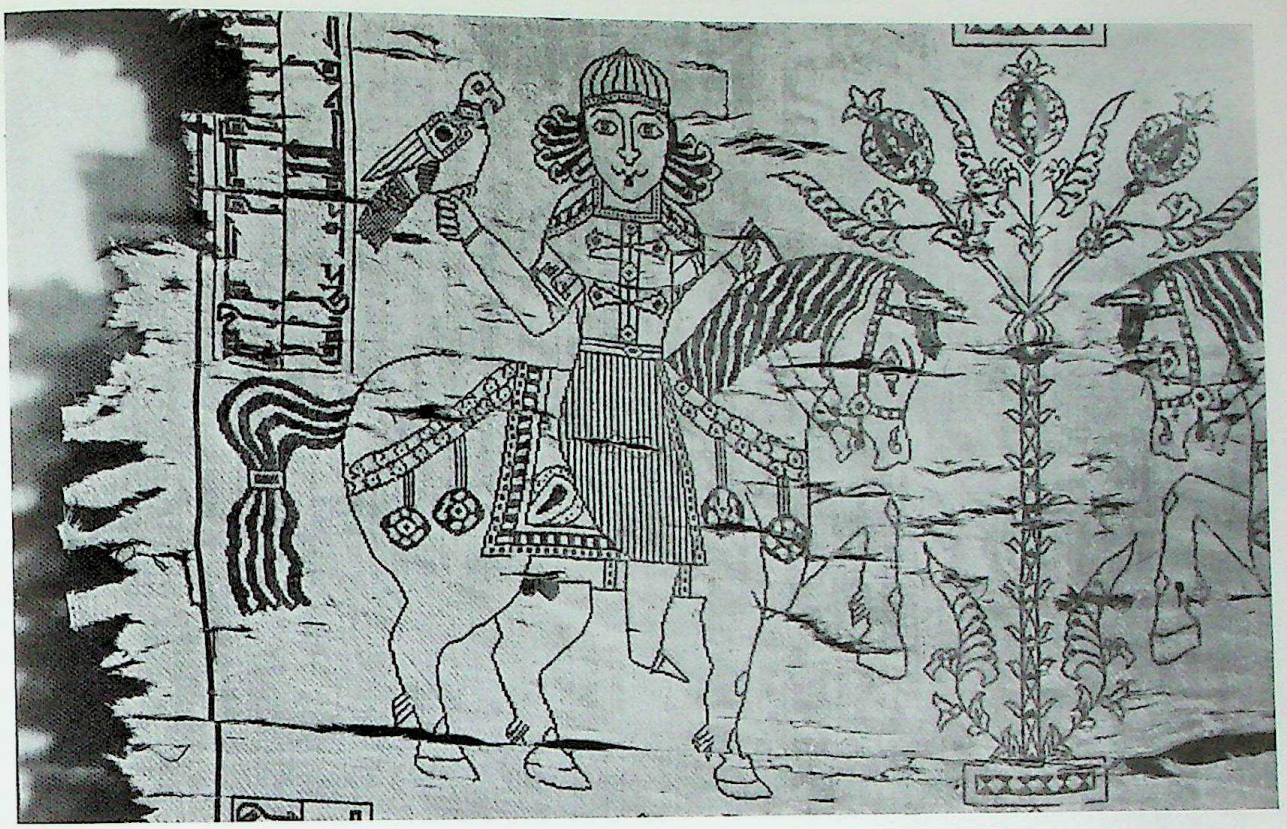


Pl. 7. *Above, left*: Imperial alb made for King William II of Sicily, detail, Islamic workmanship, made in Palermo, 1181. Silk embroidered in gold and pearls. Vienna, Schatzkammer der Wiener Hofburg. *Right*: Hispano-Moresque brocade, fragment supposedly of a vestment from the tomb of St. Bernard Calvó, Bishop of Vich, ca. 12th cent. Silk and gold; diam. of circle, 14 in. Vich, Spain, Museo Episcopal. *Below*: Italian silks with gold. *Left*: Addorsed lion motif, 13th cent. Paris, Musée de Cluny. *Right*: Fantastic animals and birds, from Lucca, 14th cent. London, Victoria and Albert Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

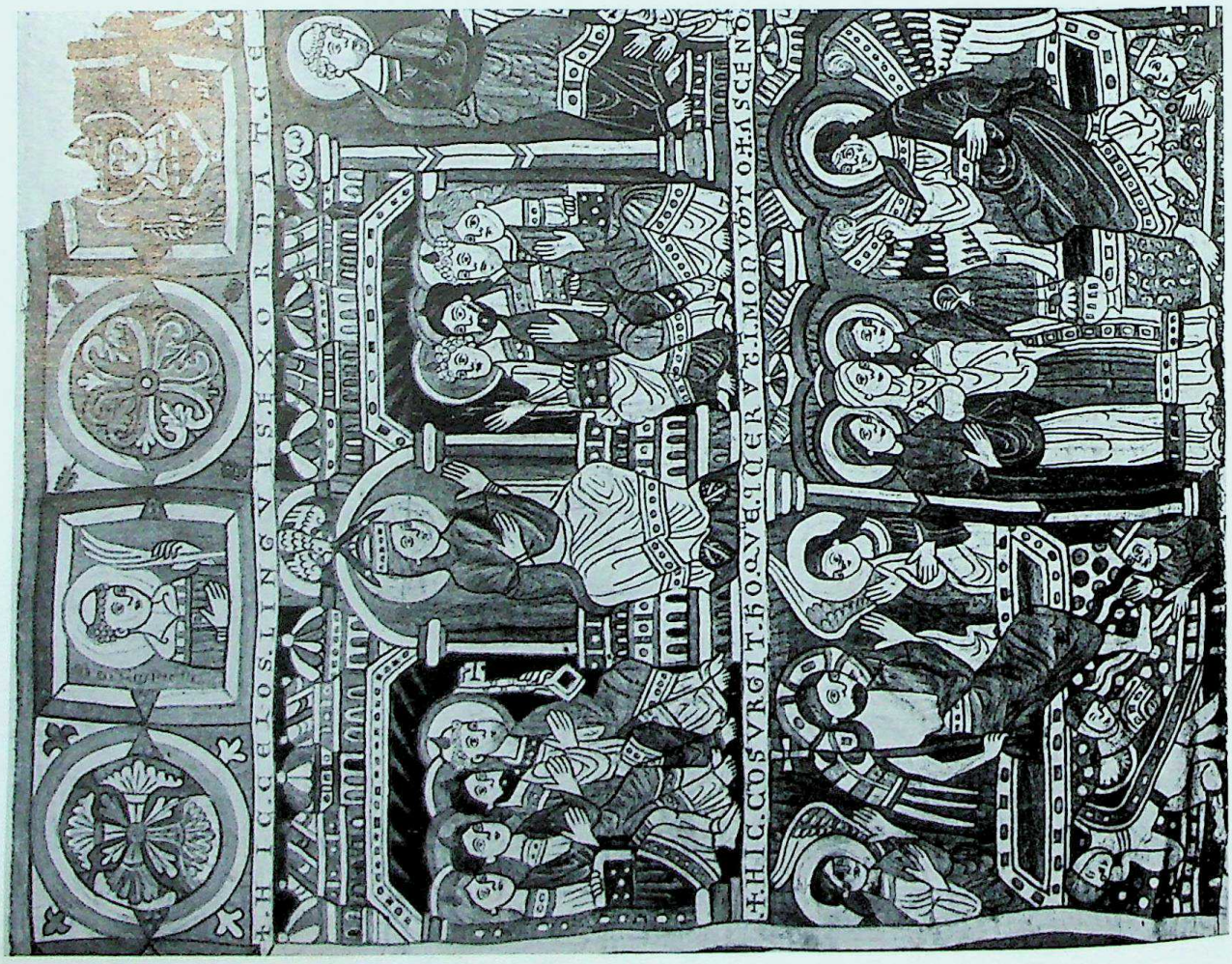
Pl. 8. Italian dalmatic showing Chinese influence, detail, with bulls, pelicans, and floral motifs, 14th cent. Silk and gilded-membrane damask; ht. of repeat, 10½ in. London, Victoria and Albert Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 9. *Above*: Silk twill with falconers reminiscent of Sassanian style, inscribed with a verse found on a silk from Bibi-Shahr-Bānū near Rayy, Iran, 12th cent. (?). New York, D. Selikowitz Coll. *Below, left*: Fatimid sash, from Egypt, 12th cent. Linen and silk, w., 11 in. Cairo, Museum of Islamic Art. *Right*: Hispano-Moresque brocade with tile pattern and band of birds and trees, from Granada, Spain, 14th cent. Silk and gold. Madrid, Instituto de Valencia de Don Juan.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

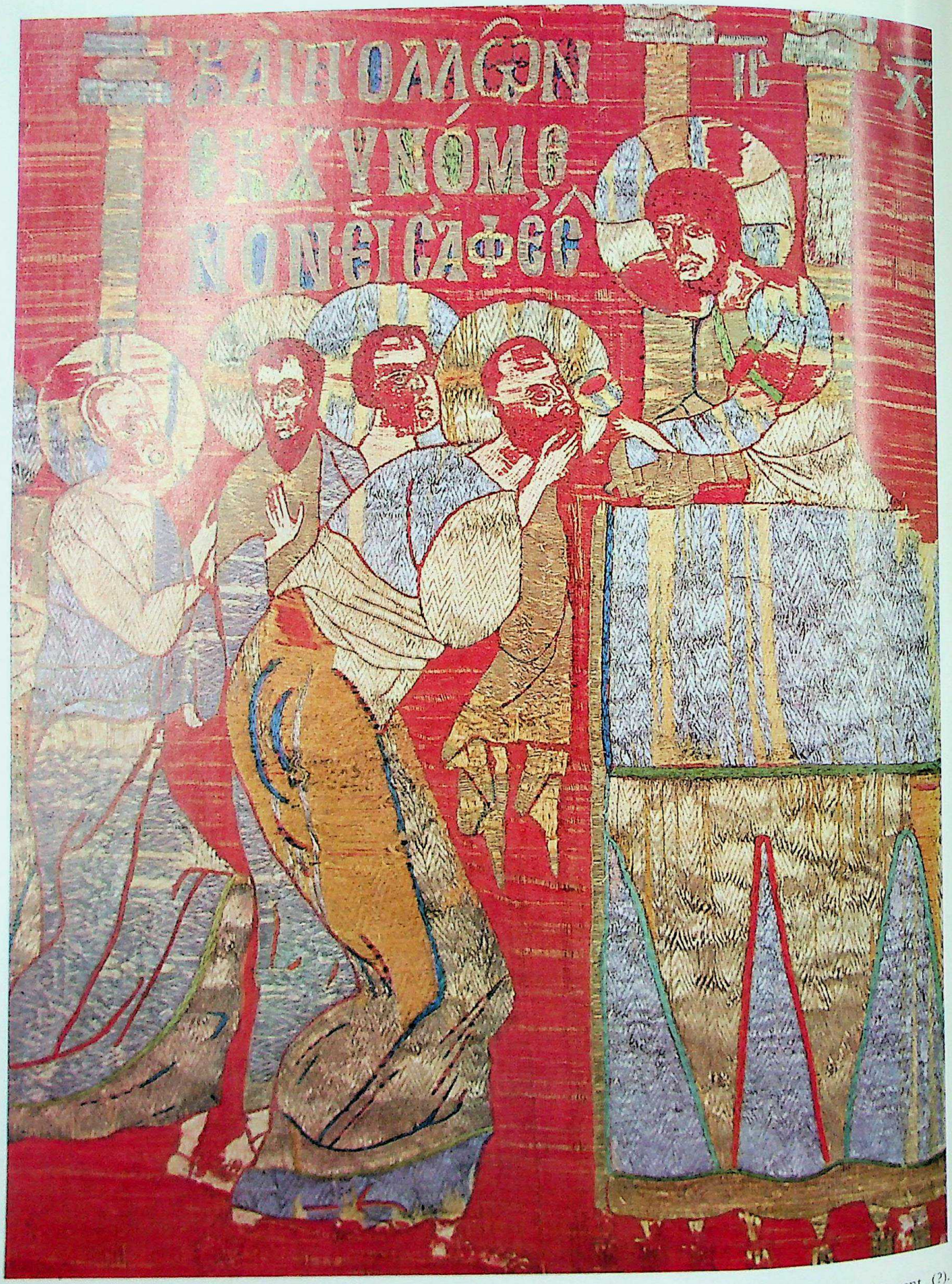


Pl. 10. Ecclesiastical embroideries. Silk on linen. *Left*: The Descent of the Holy Spirit, the Resurrection, and the Holy Women at the Sepulcher, lower Saxony (*Halberstadt?*), ca. 1170. Ht., ca. 47 in. Berlin, Kunstgewerbemuseum. *Right*: One of the Three Kings, detail of an antependium from Bamberg Cathedral, Bavaria, ca. 1300. Linen with silk embroidery. Munich, Bayerisches Nationalmuseum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

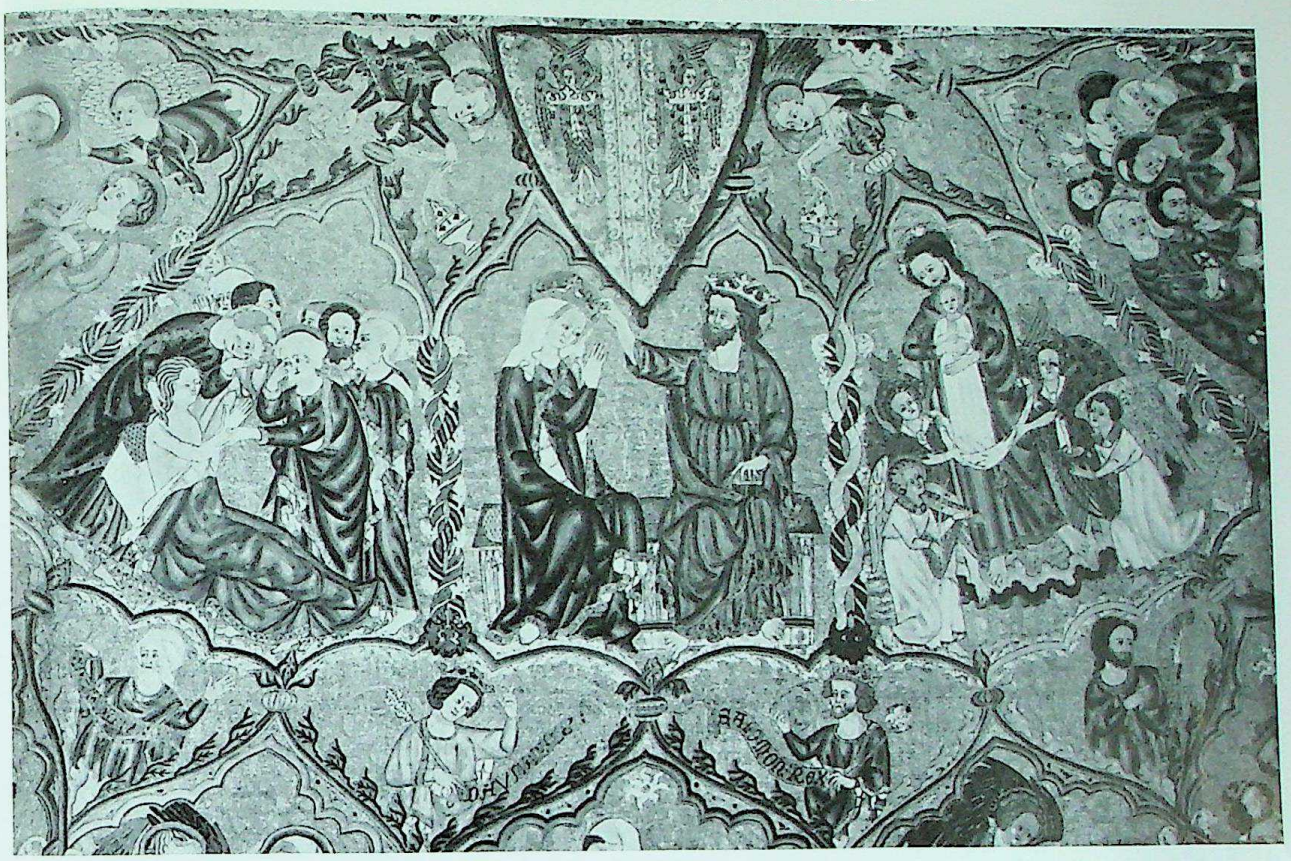
Pl. 11. Silk with the Annunciation and the Nativity depicted in medallions, detail, East Christian (from Alexandria or Constantinople?), 7th–8th cent. Diam. of medallion, 12 3/8 in. Rome, Vatican Museums.

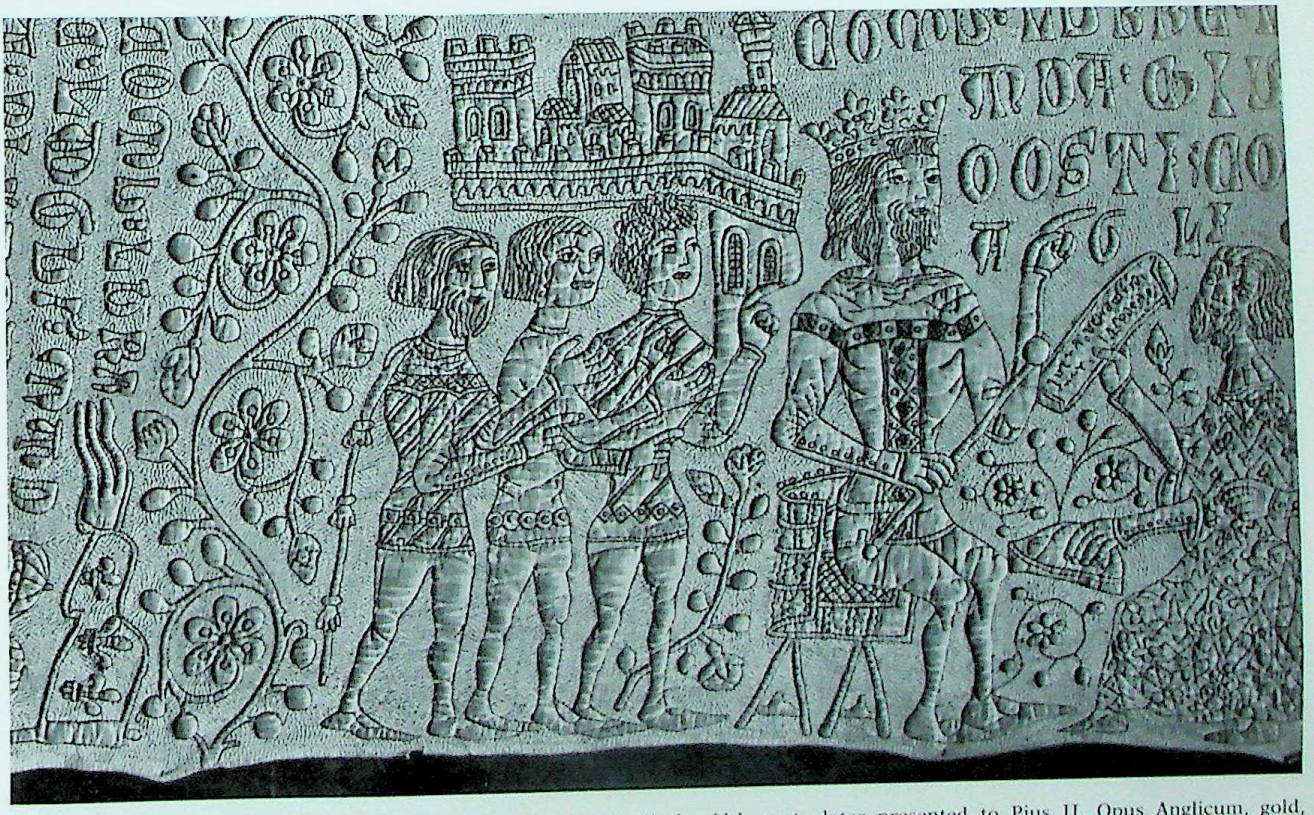
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 12. Eucharistic cloth depicting the first Communion, detail, 11th cent. (from a Byzantine workshop) or early 14th cent. (?). Silk with embroidery in gold, silver, and colored thread. Castell'Arquato, near Piacenza, Italy, Collegiata.

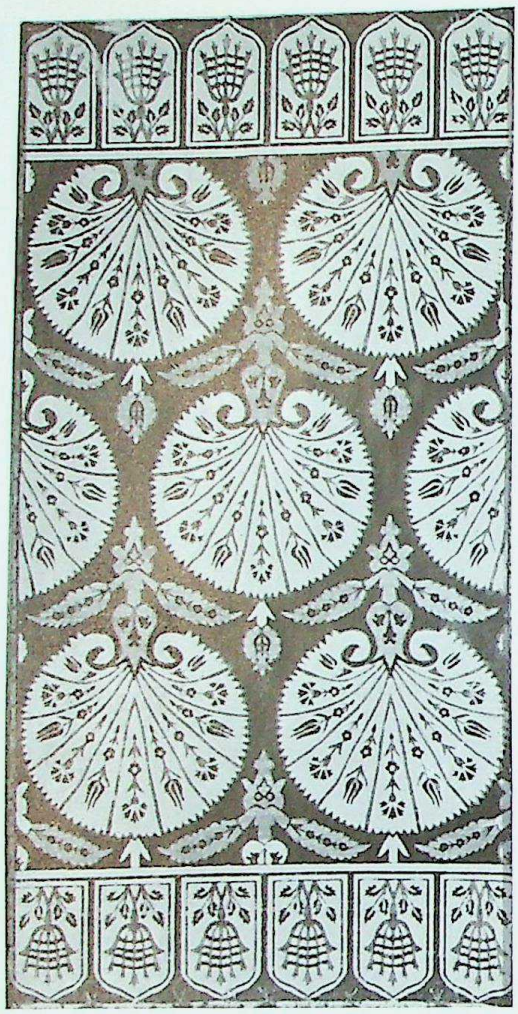
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

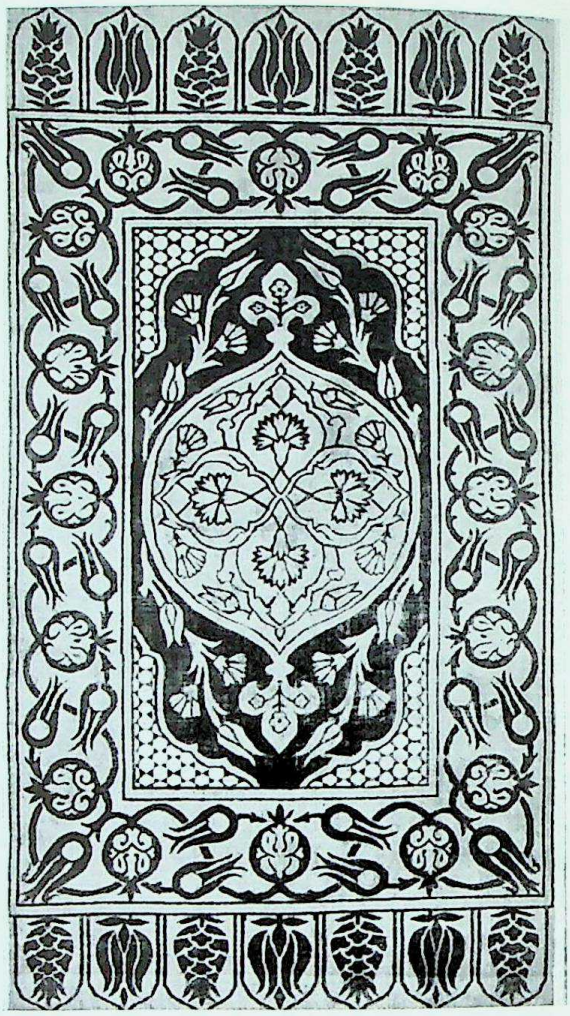


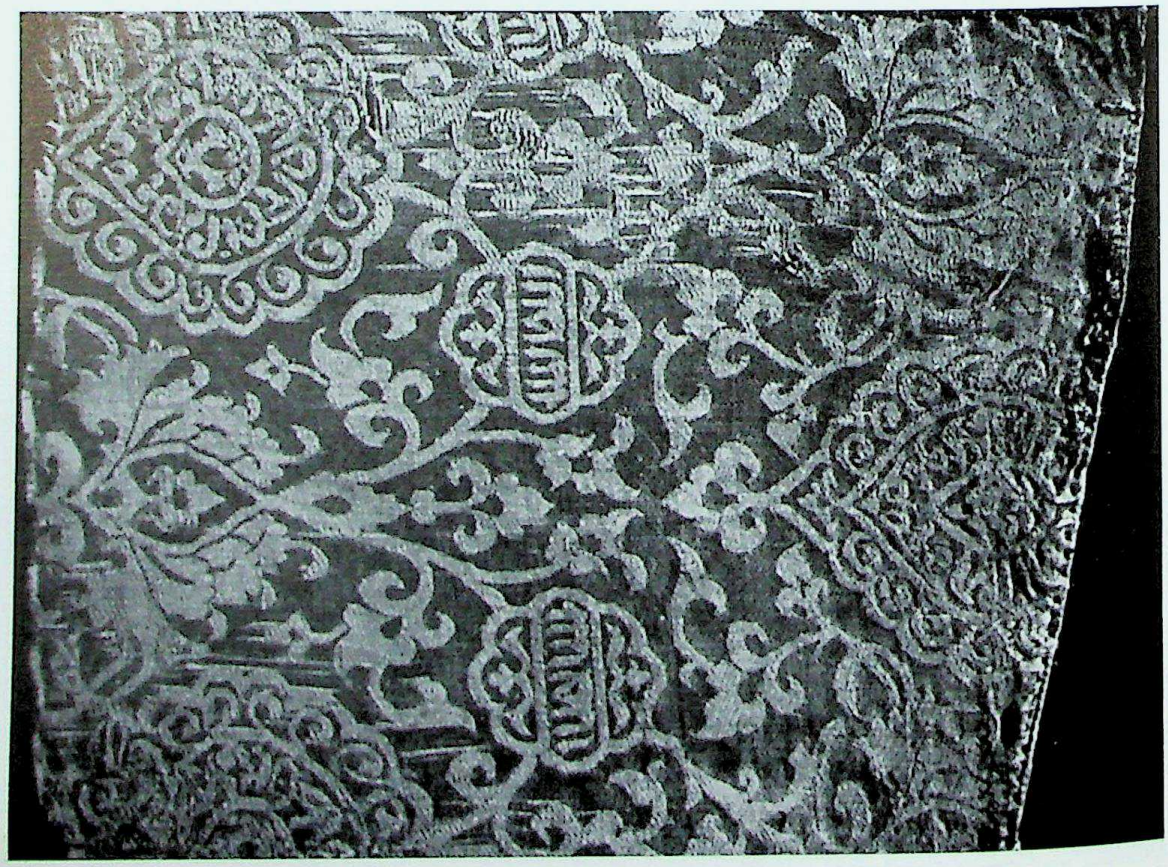


Pl. 13. *Above*: Cope, detail with scenes from the life of the Virgin, 14th cent., later presented to Pius II. Opus Anglicum, gold, silver, and silk embroidery on twofold linen, originally with pearls. Pienza, Italy, Museo Diocesano di Arte Sacra. *Below*: Coverlet with the story of Tristram, detail, Sicily, ca. 1400. Linen quilted with linen thread underneath and darning stitch. London, Victoria and Albert Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





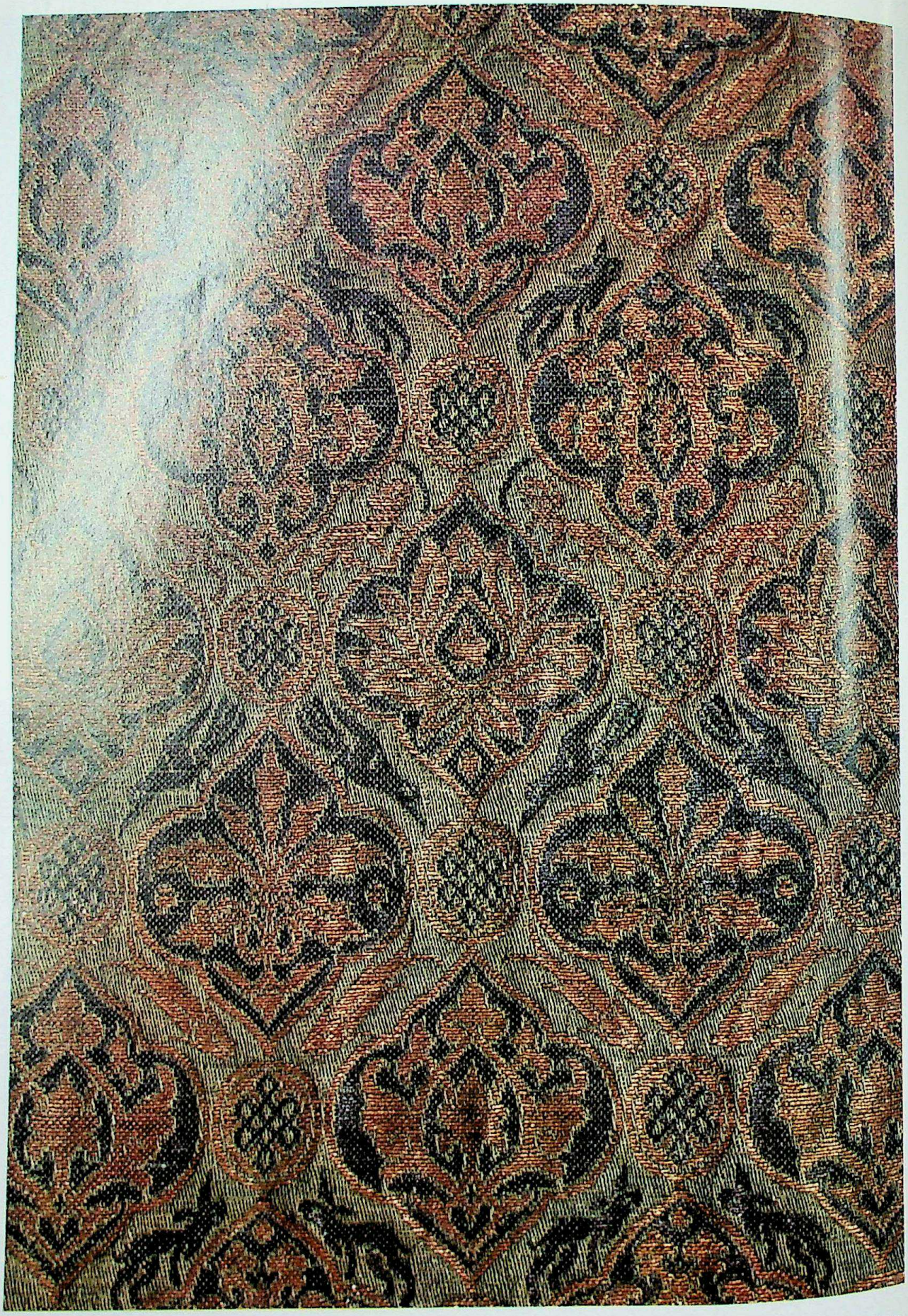


Pl. 14. *Left*: Silk damask, from Egypt or Syria, 14th cent. London, Victoria and Albert Museum. *Right*: Velvets from Brusa (now Bursa, Turkey). *Above*: Stylized carnation motif, 16th cent. *Below*: Plant motifs, on a cushion cover, 17th cent. Both, Athens, Benaki Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

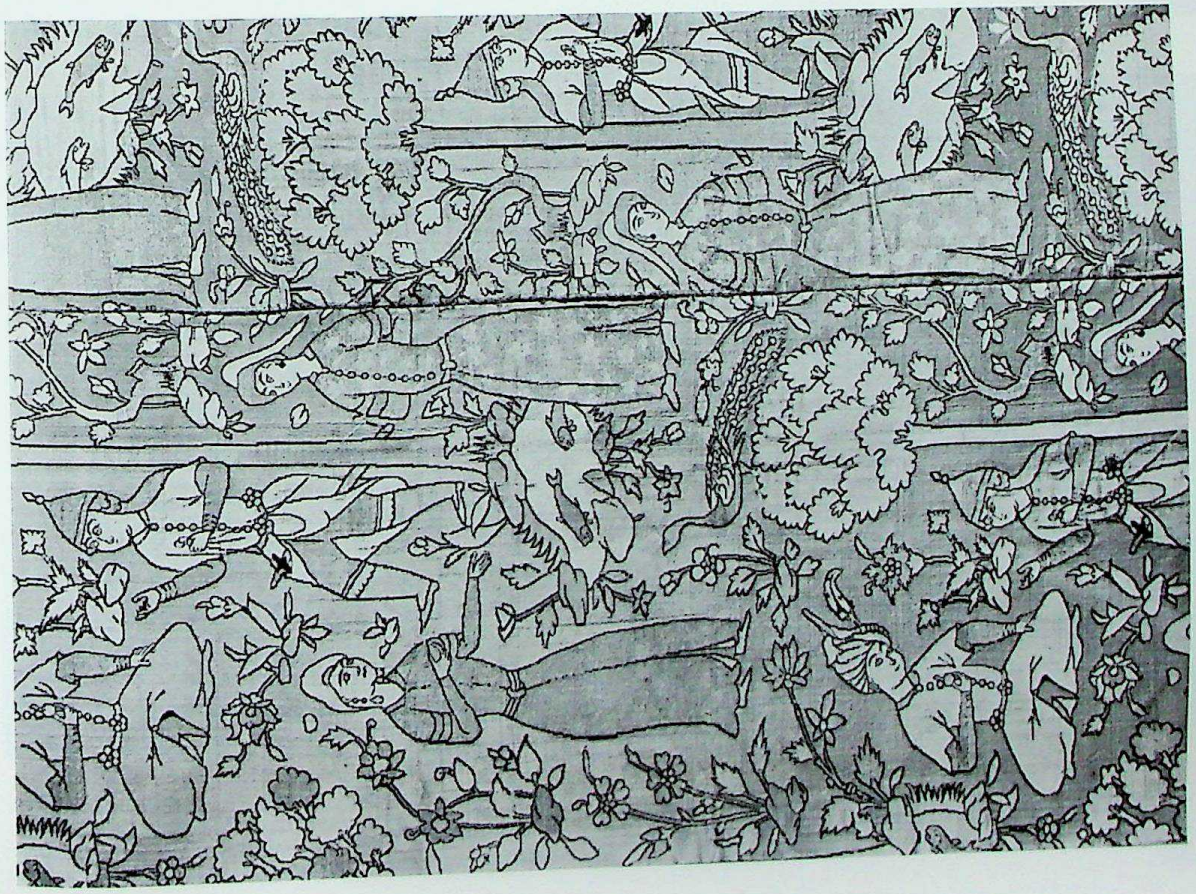
Pl. 15. Dalmatic said to be from the tomb of Benedict XI (d. 1304), detail. Silk and gold brocade. Perugia, Italy, S. Domenico.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



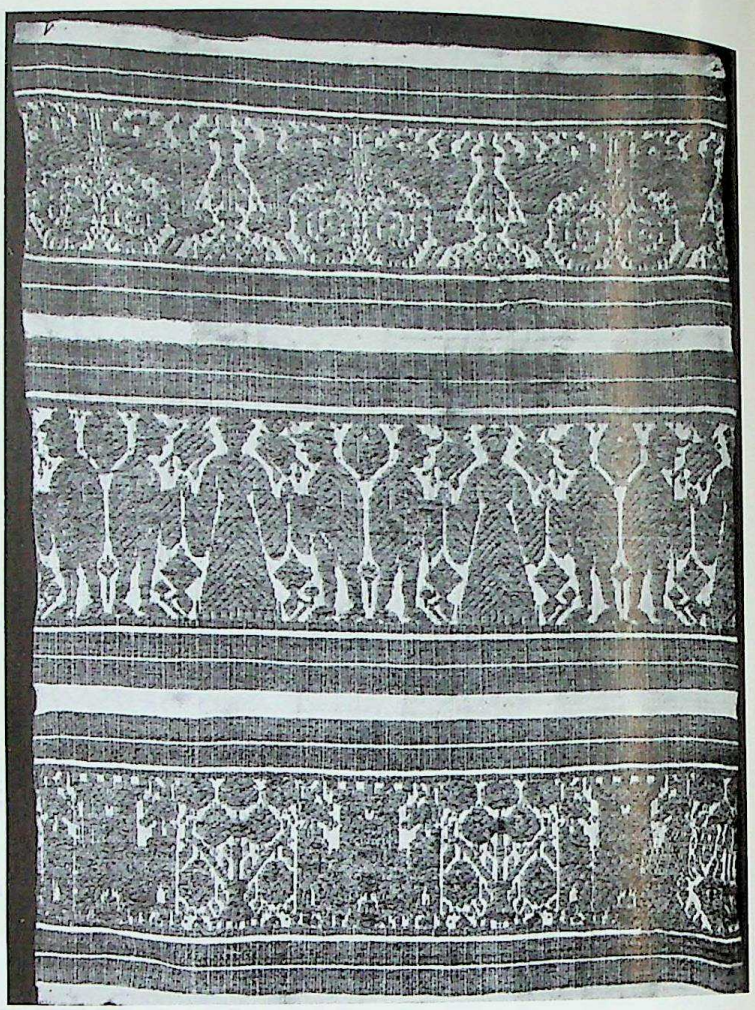
Pl. 16. Grave cloth from the tomb of Cangrande I della Scala (d. 1329), Verona, Italy. Silk brocade with gold and silver. Verona, Museo di Castelvecchio.

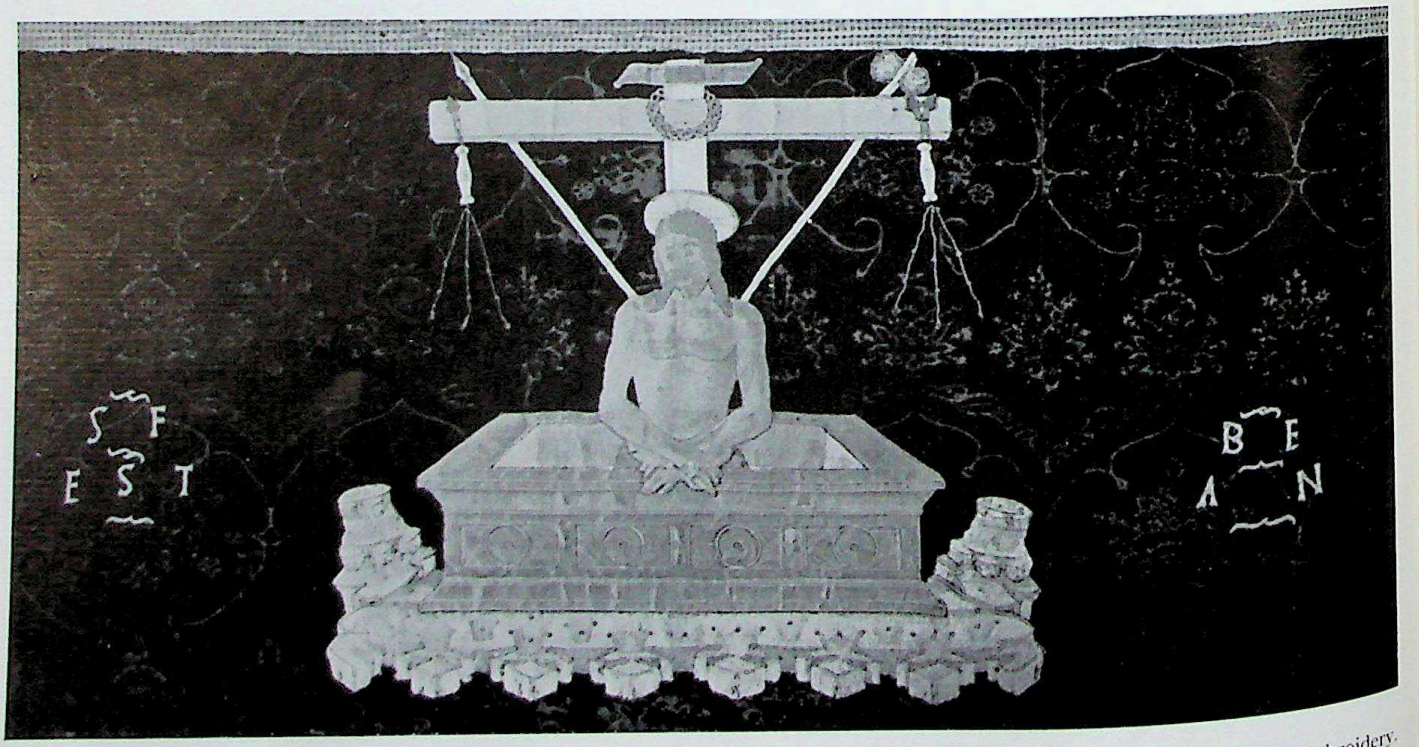
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 17. Persian silks, fragments, ca. late 16th cent. *Left:* Scenes of courtly life. Twill weave on greenish-yellow ground. Schleswig, Germany, Schleswig-Holsteinisches Landesmuseum. *Right:* Motif with bird on flowering tree stump and doe. Brocaded twill on gold metal cloth. Seattle, Art Museum (gift of Mrs. Donald E. Frederick).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



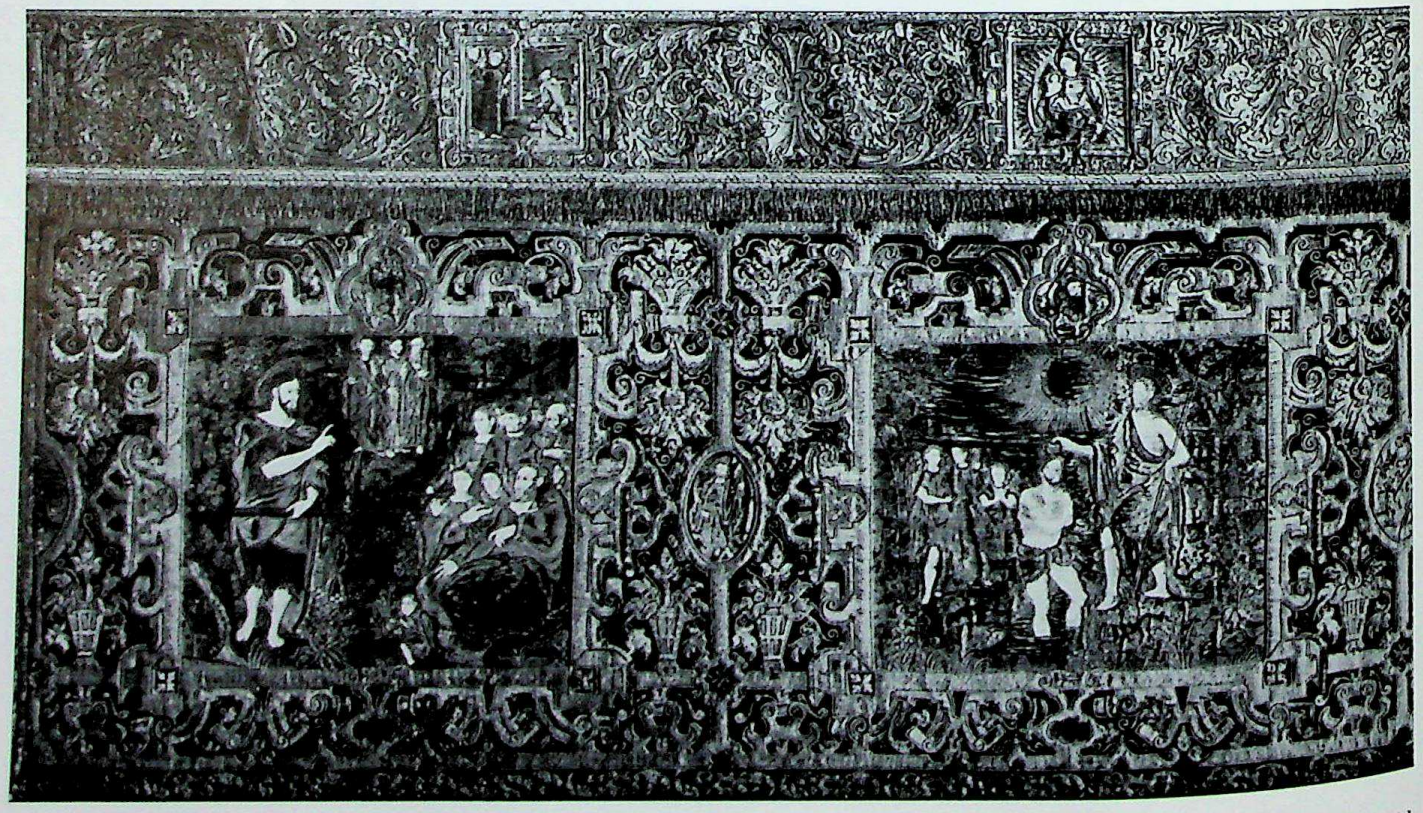


Pl. 18. *Above, left*: Altar frontal with the Coronation of the Virgin and saints, detail, signed by J. Cambi, Italy, 1336. Embroidery. Florence, Pitti. *Right*: Small cloth with cavaliers and ladies, Perugia, Italy, 15th cent. White linen and blue cotton with motifs in twill weave. Perugia, Galleria Nazionale dell'Umbria. *Below*: Altar frontal with the Resurrection and the initials of Beatrice d'Este and Anna Sforza, Milan, ca. 1491–97. Gold, silver, and silk embroidery on morello cut velvet. Milan, Museo Poldi Pezzoli.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 19. St. John the Evangelist, after a design by Perugino, perhaps from a cope, ca. 1515. Silk, gold, and silver embroidery, $12^{3}/_{4} \times 5^{7}/_{8}$ in. Settignano, Italy, Berenson Foundation.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 20. *Above, left*: Altar frontal, detail with pomegranate motif, Florence, second half of 15th cent. Red voided velvet with gold bouclé brocading. Milan, Museo Poldi Pezzoli. *Right*: Brocatel with plant and animal motifs, Florence, 16th cent. Silk and linen. Florence, Pitti. *Below*: Altar frontal with events in the life of John the Baptist, detail, Flemish, 16th cent. Green velvet with gold and colored silk embroidery. Lyons, Musée Historique des Tissus.

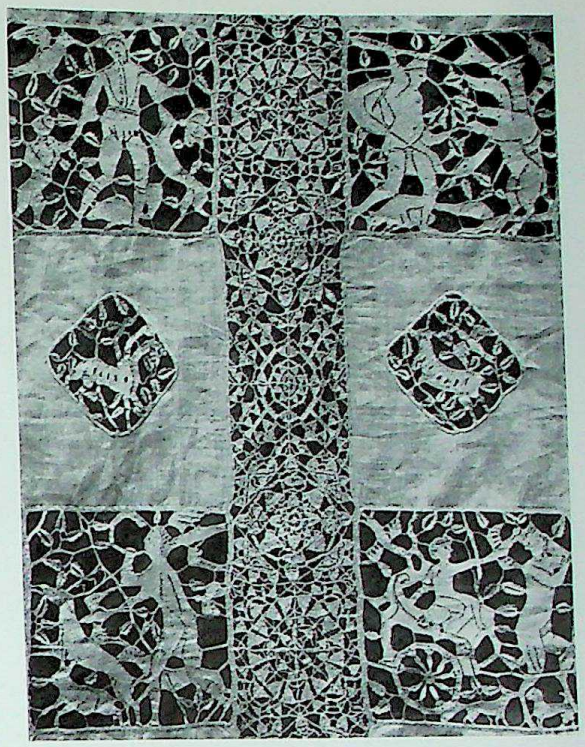
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

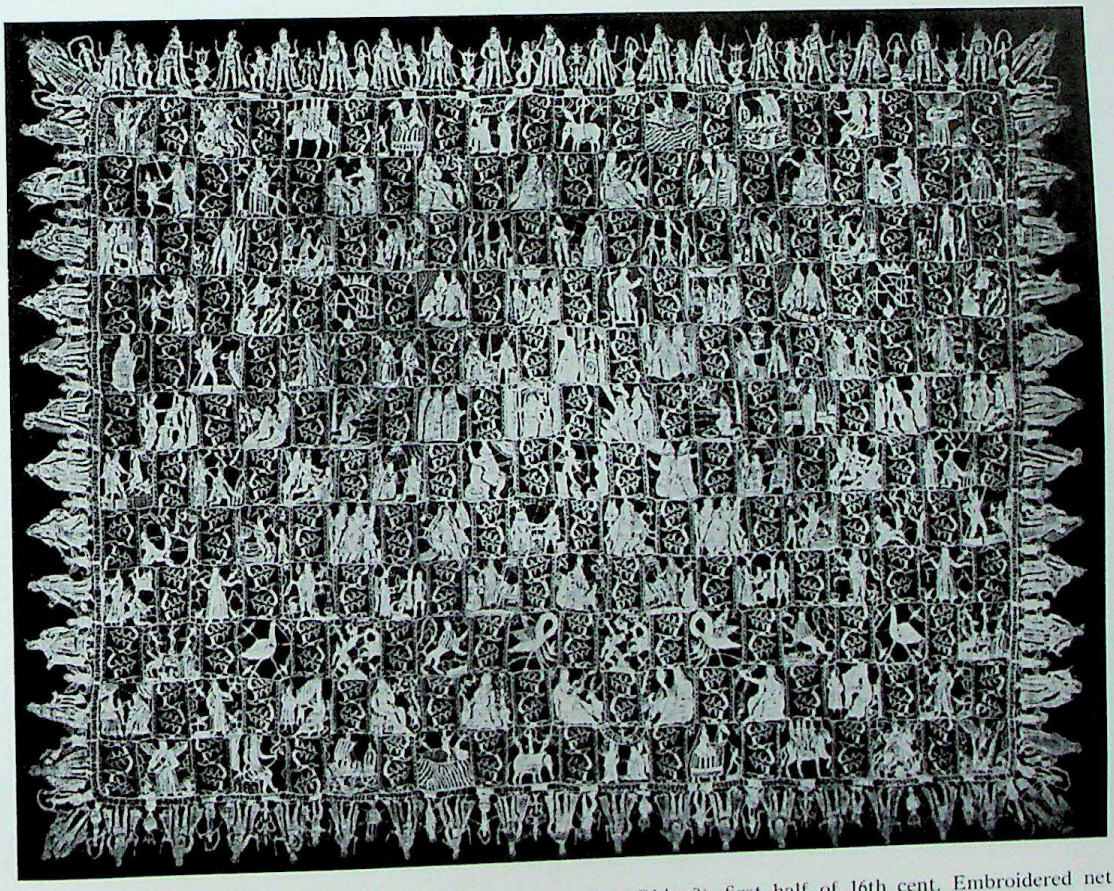
Pl. 21. Hood of a cope, with the Coronation of the Virgin, from a cartoon attributed to S. Botticelli, 15th cent. Embroidery in silk and gold. Milan, Museo Poldi Pezzoli.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 22. Cut voided velvet with gold and silver bouclé brocading, Genoa, mid-16th cent. Turin, Museo Civico.

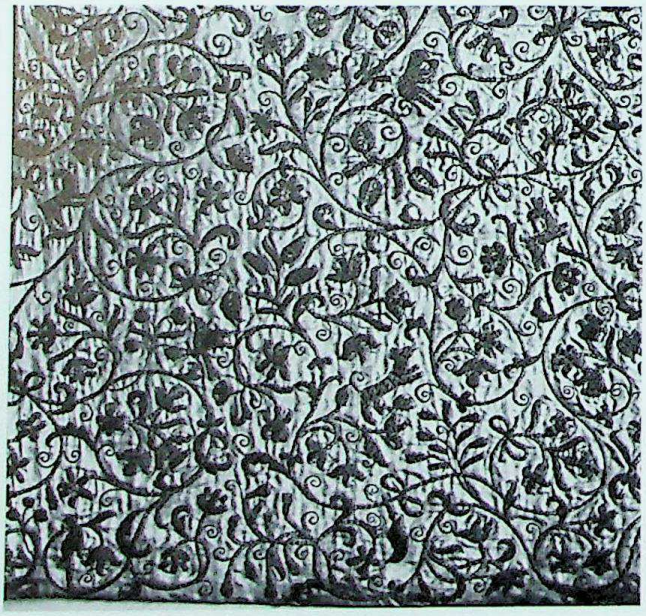
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 23. *Above, left*: The Blessed Hildegard, Germany (middle Rhine?), first half of 16th cent. Embroidered net with lace points. Berlin, Kunstgewerbemuseum. *Right*: Cloth with mythological scenes, Venice, 16th cent. Needle-point lace. Paris, Musée des Arts Décoratifs. *Below*: Throw with scenes and animal motifs, bordered with figures of emperors and sibyls, Brabant, Belgium, 1599. Bobbin lace, 4 ft., 3½ in. × 5 ft., 7½ in. Brussels, Musées Royaux d'Art et d'Histoire.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 24. *Above*: Hanging with the loves of Neptune, detail, Venice (?), mid-16th cent. Silk, gold, and silver embroidery on linen; full size, 35 3/8 × 24 in. Vienna, Österreichisches Museum für Angewandte Kunst. *Below, left*: Fragment of a dress of Margaret of Valois (1553–1615), France. Embroidered silk. Paris, Musée der Arts Décoratifs. *Right*: Lace square, Spain, 16th–17th cent. *Punto de España*, 33 7/8 × 33 1/2 in. Vienna, Österreichisches Museum für Angewandte Kunst.

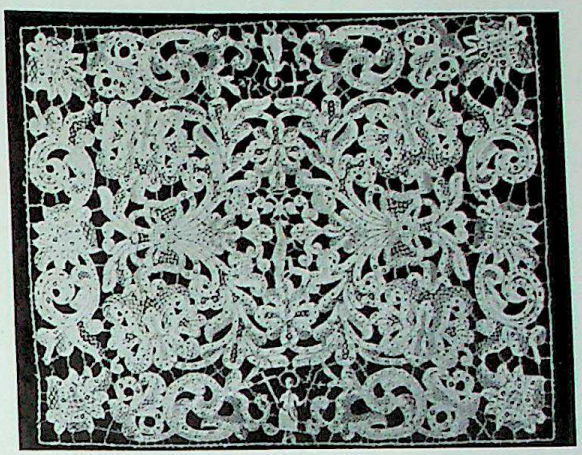
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

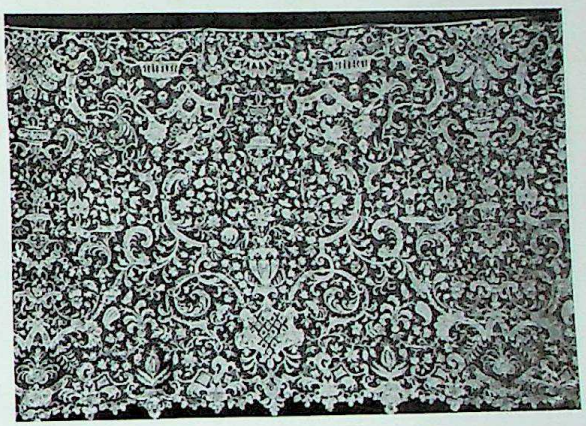
Pl. 25. Ciselé voided velvet panels. *Left*: Genoese, with floral and crown motifs, 16th cent. Turin, Museo Civico. *Right*: French, with floral motifs, 17th cent. Lyons, Musée Historique des Tissus.

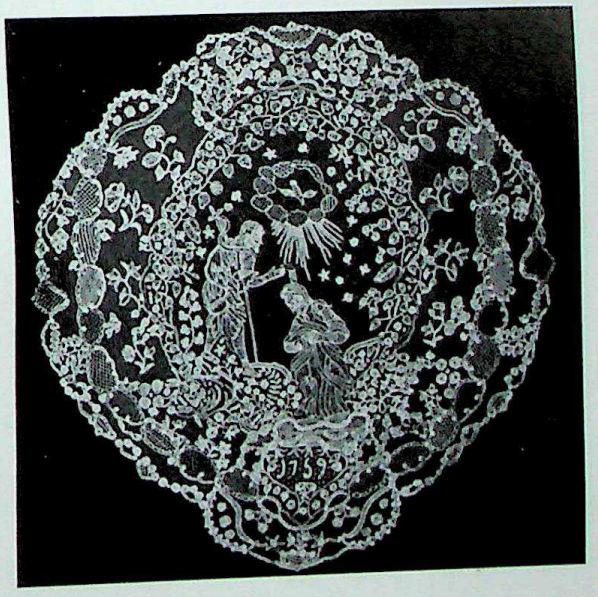
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 26. Wall panels with bird and floral motifs, designed by Philippe de Lasalle, Louis XVI period. Silk lampas. Lyons, Musée Historique des Tissus.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

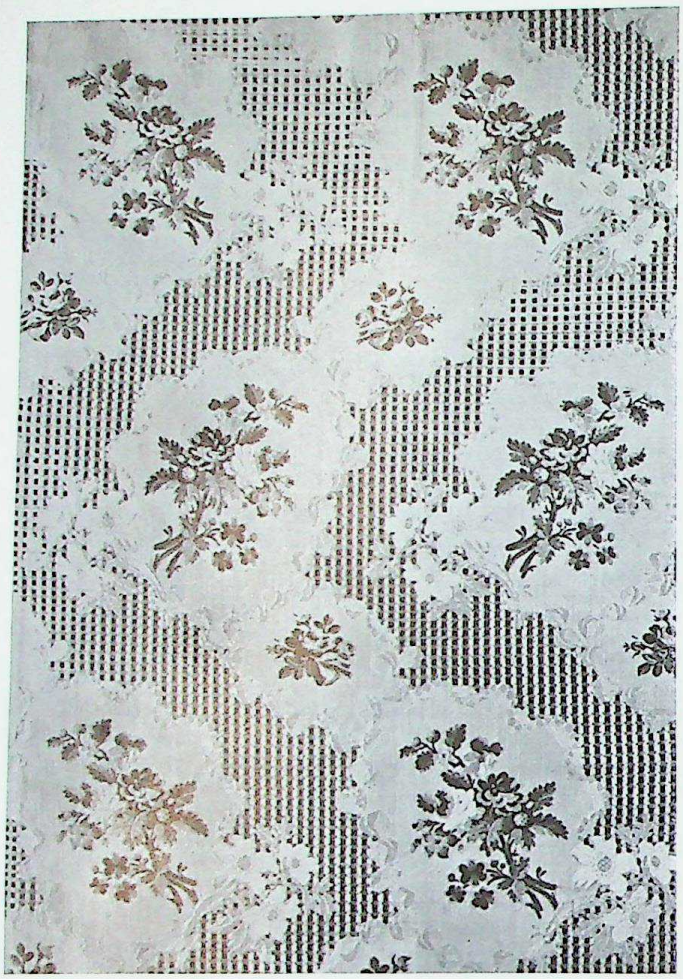


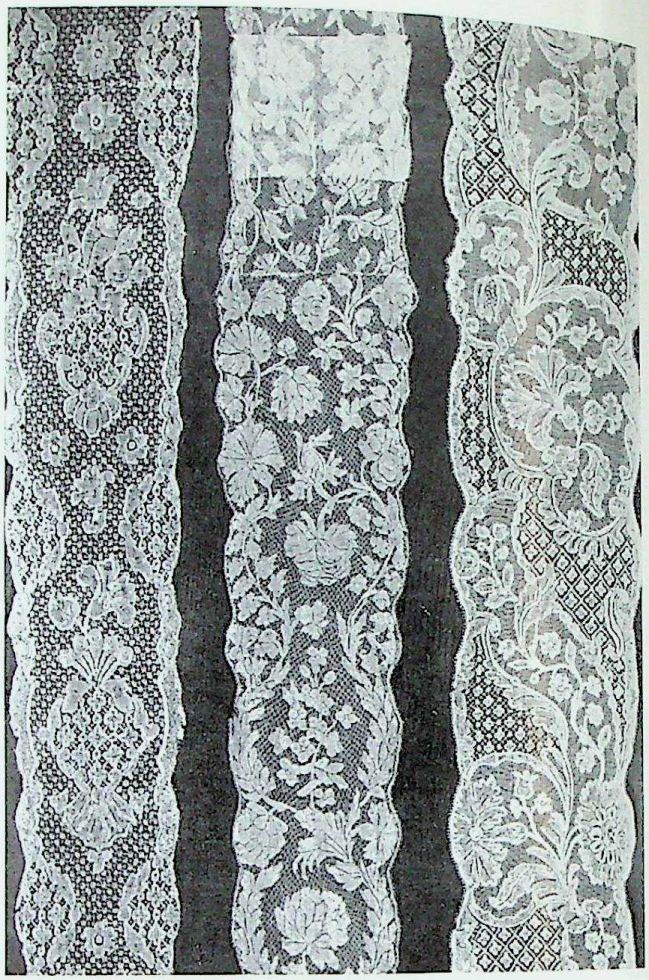




Pl. 27. *Left*: Silk brocatel with grotesques, Italy, 17th cent. Turin, Museo Civico. *Right, above*: Chalice veil, Holland, second half of 17th cent. Bobbin lace, 19 3/4 × 24 3/4 in. Vienna, Österreichisches Museum für Angewandte Kunst. *Center*: Lace flounce, France, early 18th cent. *Point de France*. Paris, Musée des Arts Décoratifs. *Below*: Veil with the Baptism of Christ, Brussels, 1759. Bobbin lace, 28 3/8 × 27 1/2 in. Brussels, Musées Royaux d'Art et d'Histoire.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



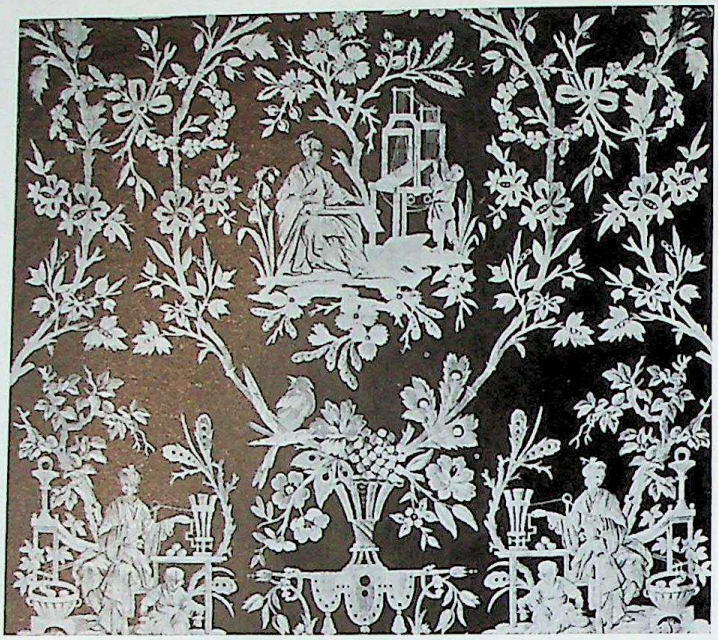


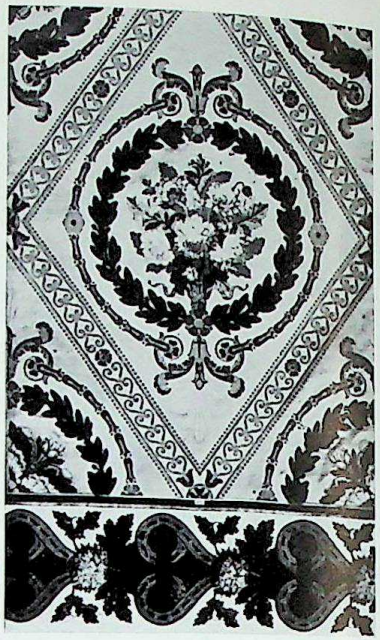
Pl. 28 *Above, left*: Floral brocade, France, third quarter of 18th cent. Vienna, Österreichisches Museum für Angewandte Kunst. *Right*: Lace garnitures, France, 18th cent. Valenciennes. Paris, Musée des Arts Décoratifs. *Below, left*: Hanging with bird and plant motifs, detail, Spain, 17th cent. Linen embroidered in satin, stem, feather, herringbone, and chain stitches with scrolls raised on a fold of the cloth; full size, 51×22 in. London, Victoria and Albert Museum. *Right*: Chalice veil, Italy, 18th cent. Silk embroidery. Formerly, Florence, Pitti. (Destroyed?)

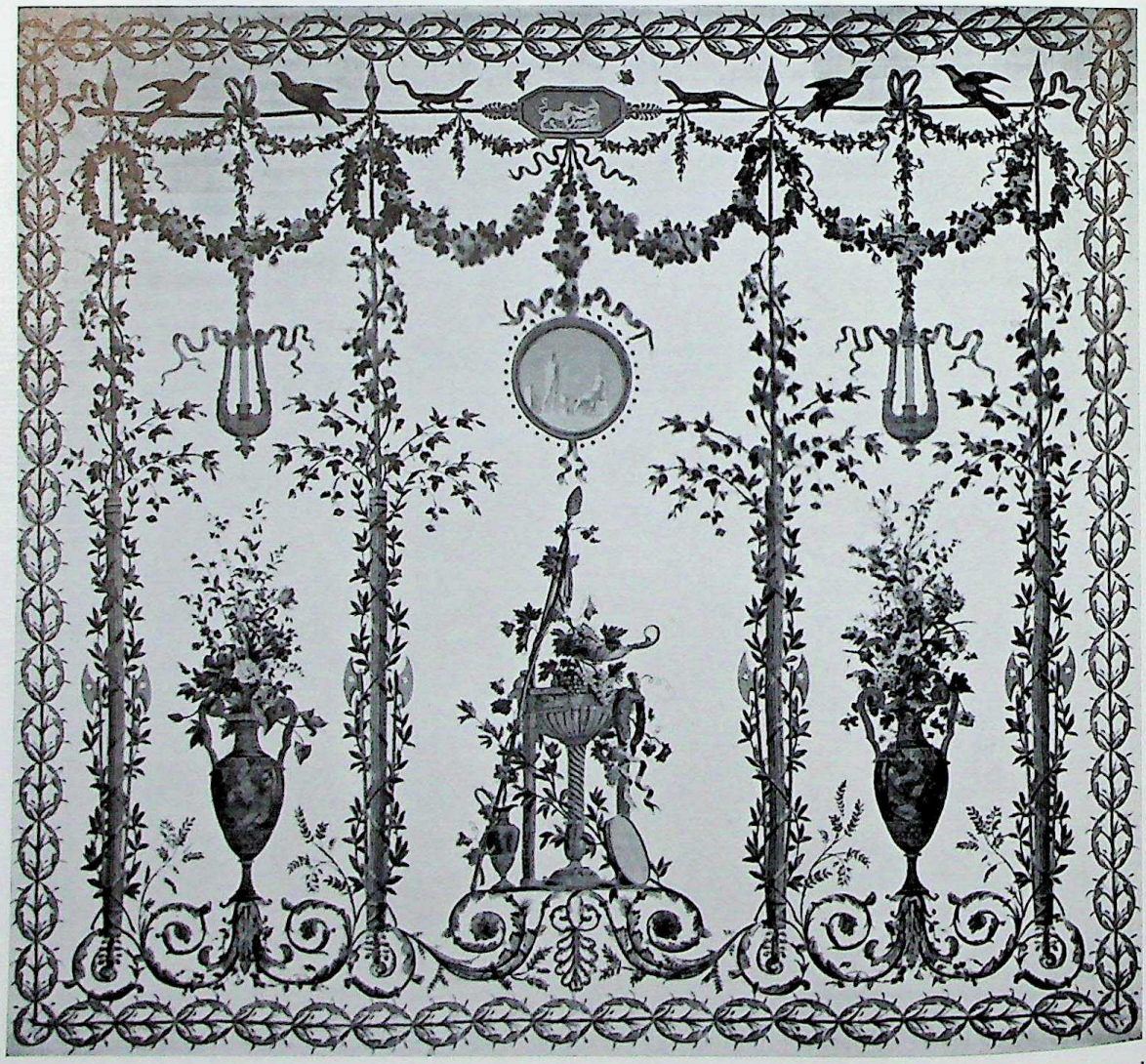
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 29. Benediction veil with St. Helen discovering the Cross, Flanders, 1720. Bobbin lace. Brussels, Musées Royaux d'Art et d'Histoire.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





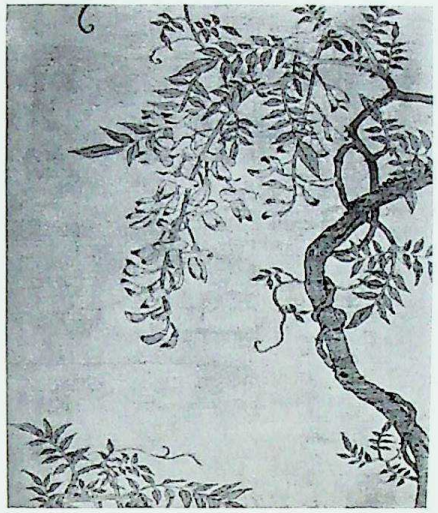


Pl. 30. *Above, left*: Wall panel with scenes of silk manufacture in *chinoiserie* style, detail, France, second half of 18th cent. Silk brocade, white on red satin ground; full size, 4 ft., 11 in. × 2 ft., 6¼ in. *Right*: Wall panel made for Napoleon's bedroom in Versailles, detail, 1811–13. Silk and gold brocade on satin ground, with wreaths in silk chenille. Both, Lyons, Musée Historique des Tissus. *Below*: Wall panel, France, early 19th cent. Chenille embroidery on silk, 12 ft., 11 in. × 7 ft., 2½ in. Vienna, Österreichisches Museum für Angewandte Kunst.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

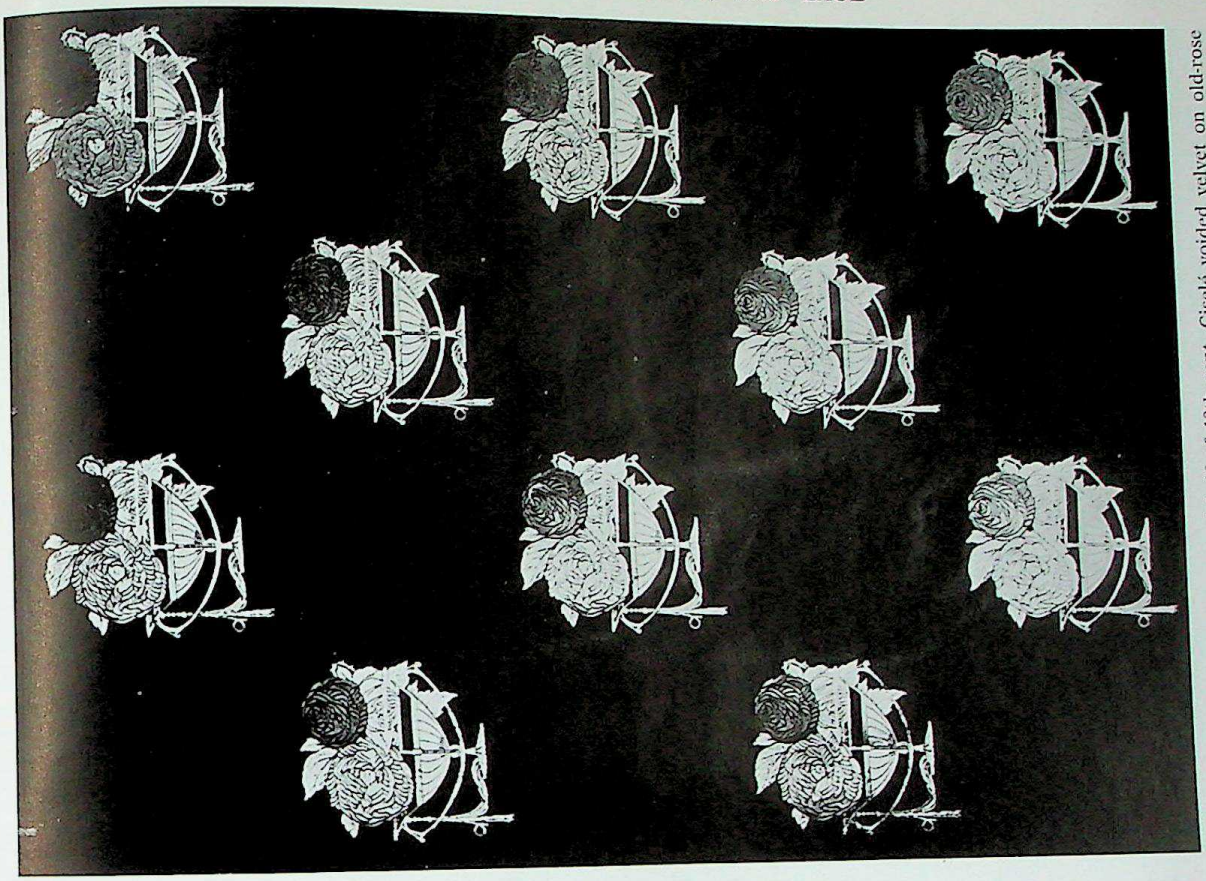
Pl. 31. Screen panel painted in *rōkechi* technique, probably from China, ca. 8th cent. Silk, ht., ca. 45 in. Nara, Japan, Shōsōin.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



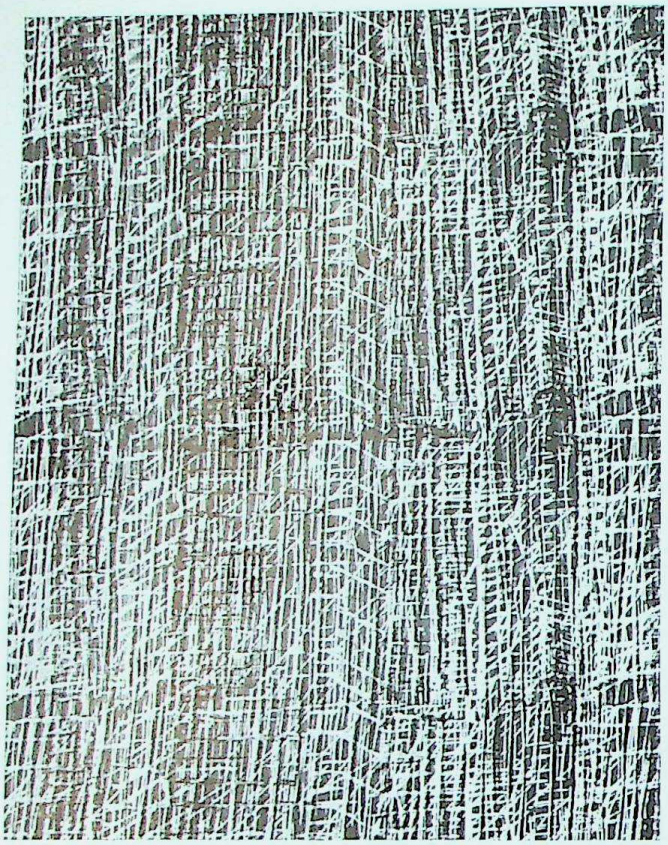
Pl. 32. *Left*: Japanese silk embroidery with the Buddha preaching, detail, Nara period. Tokyo, National Commission for the Protection of Cultural Properties. *Right*: Chinese silks. *Above*: Immortals in a mountain palace, Sung dynasty. *K'o-ssŭ*, $10^1/_8 \times 13^1/_4$ in. Taichung, Formosa, National Palace Museum. *Below, center*: Acacia branch, 13th–15th cent. *K'o-ssŭ* with touches of brushwork, $11^3/_4 \times 8^7/_8$ in. *Below, right*: Imperial dragon and phoenix, 17th cent. Multicolored brocade with gold thread, $7^1/_8 \times 8^5/_8$ in. Last two, Prague, W. Forman Coll.

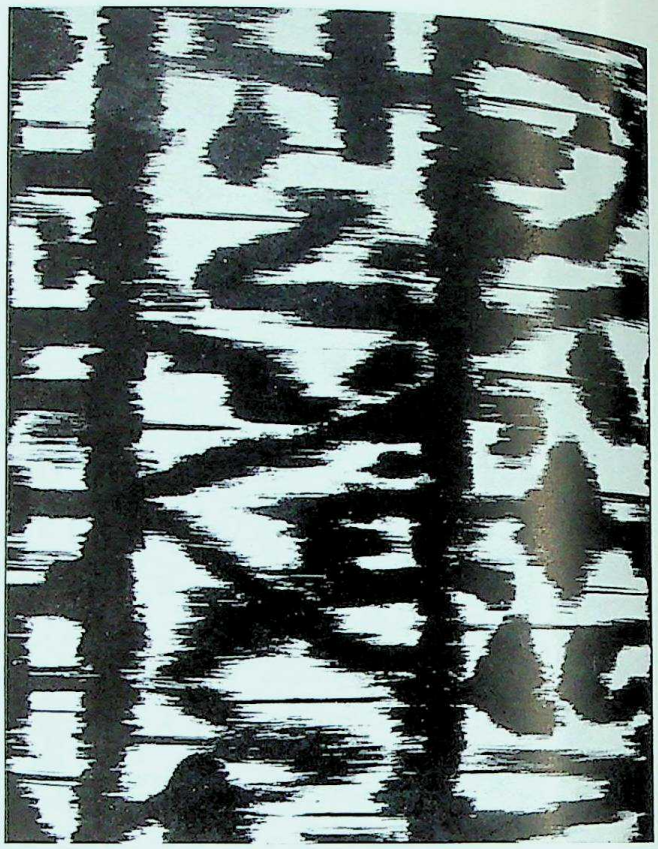
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

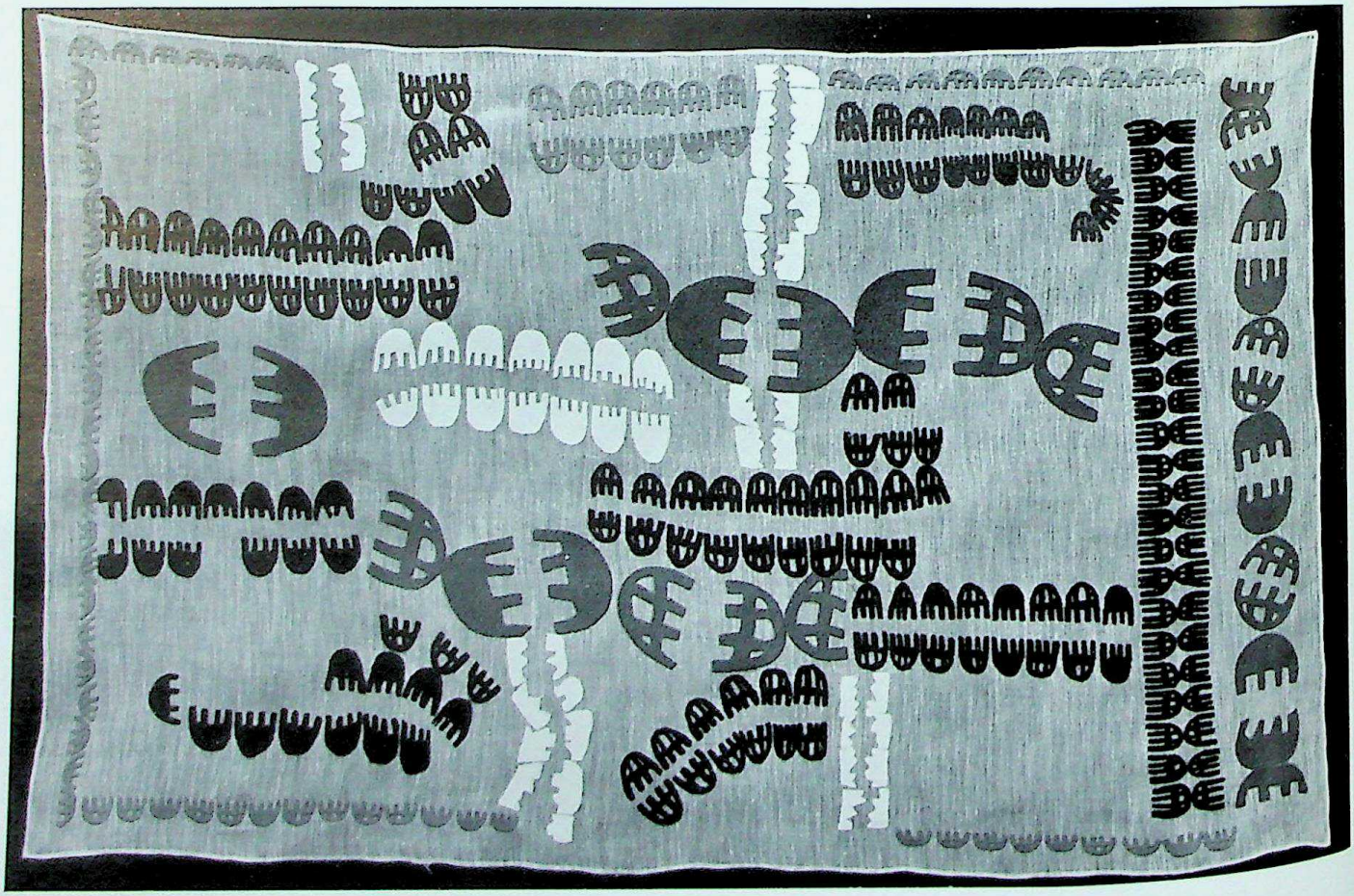


Pl. 33. *Left*: Wall panel with laurel branches and initials of the Republic of France, detail, designed by A. P. Giraldon, second half of 19th cent. Ciselé voided velvet on old-rose satin ground; full size, 11 ft., 10 in. × 3 ft., 11 in. *Right*: Fabric designed by P. Iribe for Bianchini et Férier, France, 1914. Red silk and gold brocade on black ground. Both, Lyons, Musée Historique des Tissus.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh







Pl. 34. Fabrics with abstract design, mid-20th cent. *Above*: Manufactured prints, designed by G. Pomodoro, Italy (*left*) and Shigeru Aoki, Japan (*right*). *Below*: Embroidery on sheer linen, designed by G. Capogrossi, Italy.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 35. The goddess gTsug gtor rnam par rgyal ma (Skr., Uṣṇīṣavijayā), tanka, 17th–18th cent. Without borders, $23^{7}/_{8} \times 15^{7}/_{8}$ in. Rome, Museo Nazionale d'Arte Orientale.

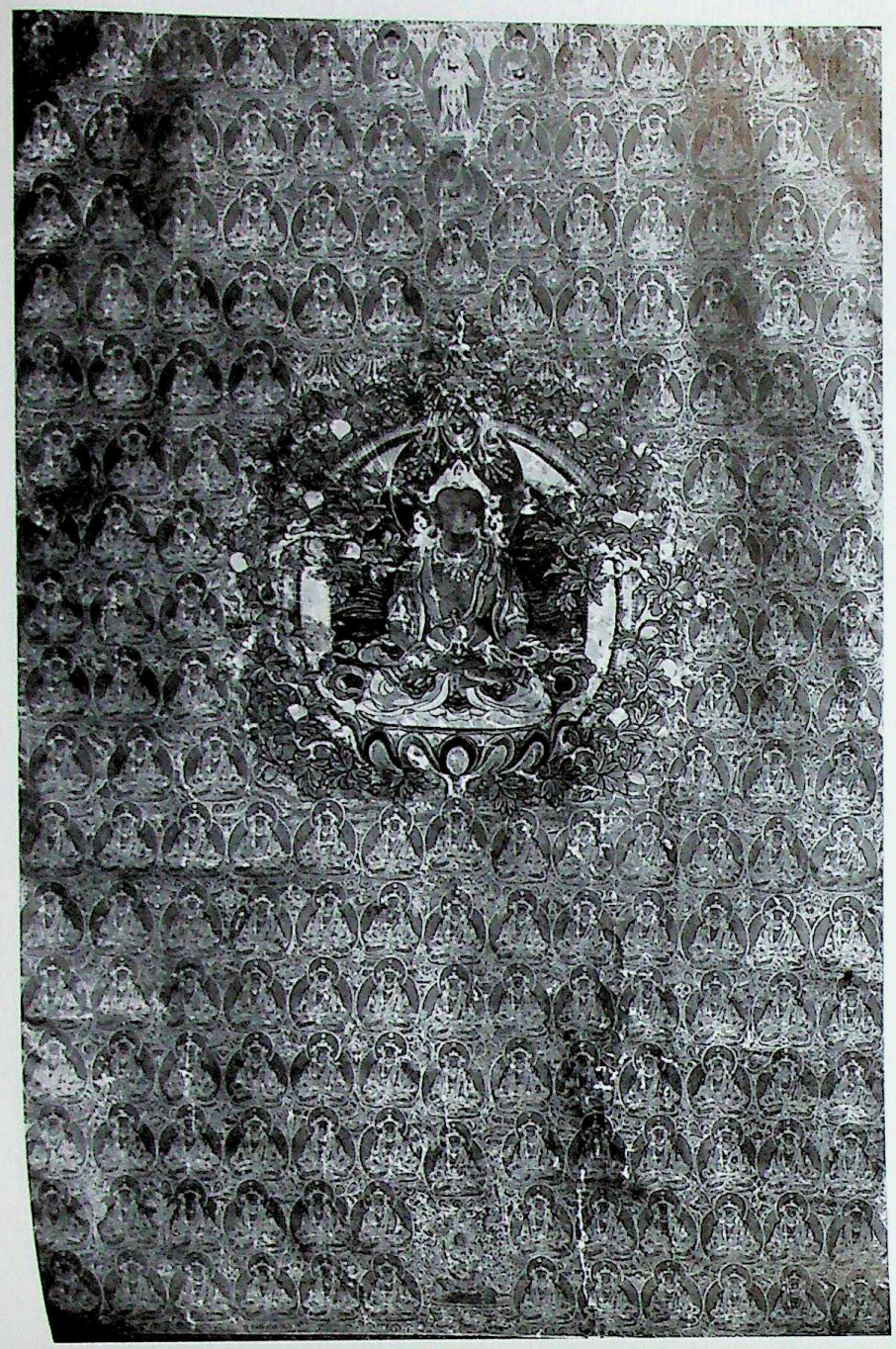
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 36. An unidentified master of the rÑin ma pa school surrounded by other personages, tanka, 17th–18th cent. Without borders, 35 7/8 × 25 in. Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 37. C'e mc'og Heruka (Skr., Mahāśrīheruka), surrounded by six emanations and the 48 Na rag (infernal deities), tanka, 17th–18th cent. Rome, Museo Nazionale d'Arte Orientale.

TIBETAN ART
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 38. Tankas, 17th–18th cent. *Left*: Ts'e dpag med (Skr., Amitāyus). Rome, Museo Nazionale d'Arte Orientale. *Right*: The goddess mT'iṅ gi žal bzaṅ ma, one of the five Riṅ mc'ed lṅa. Private coll.

Pl. 39. Tankas, 17th–18th cent. *Left*: The goddess dPal ldan lha mo (Skr., Śrīdevī). Without borders, $19^{1}/_{4} \times 12^{5}/_{8}$ in. *Right*: C'os rgyal p'yi sgrub (a form of Yama, the king of death). Both, Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

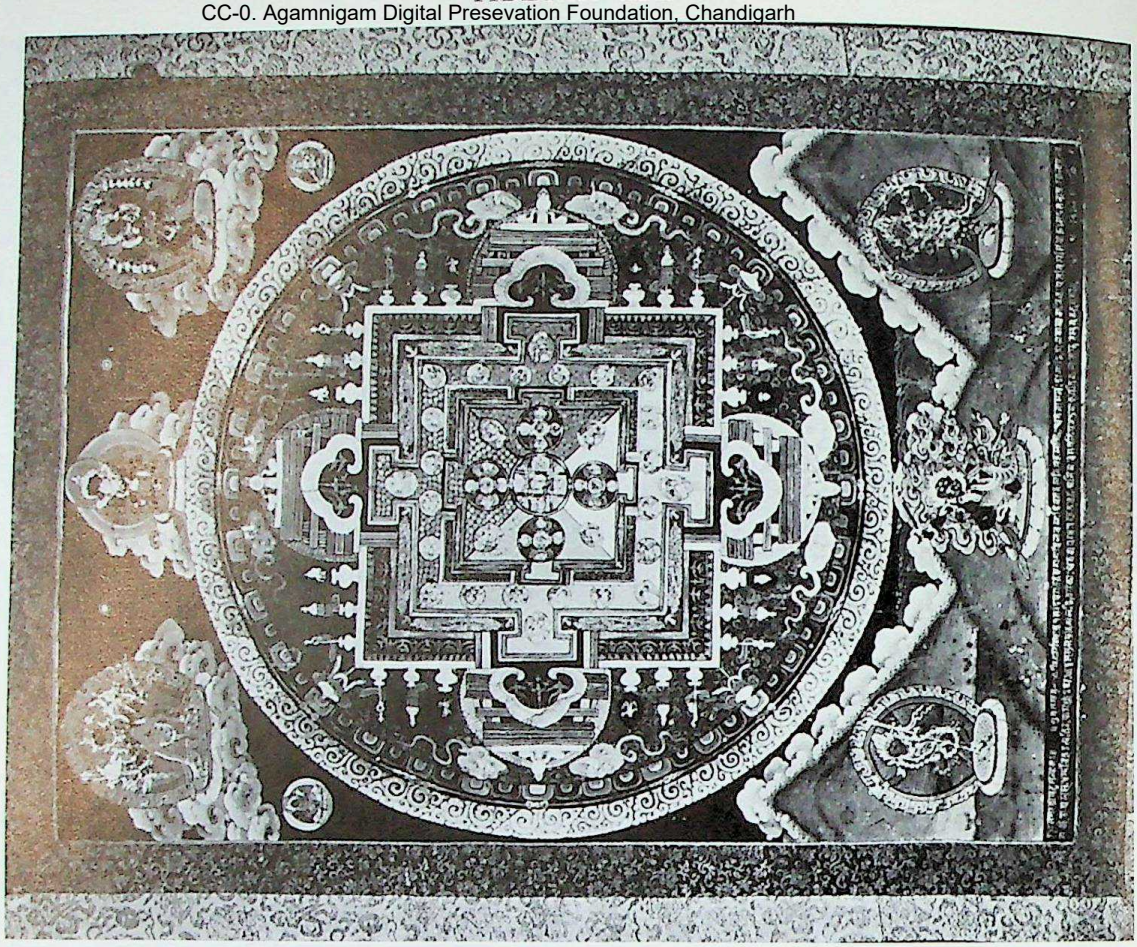
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

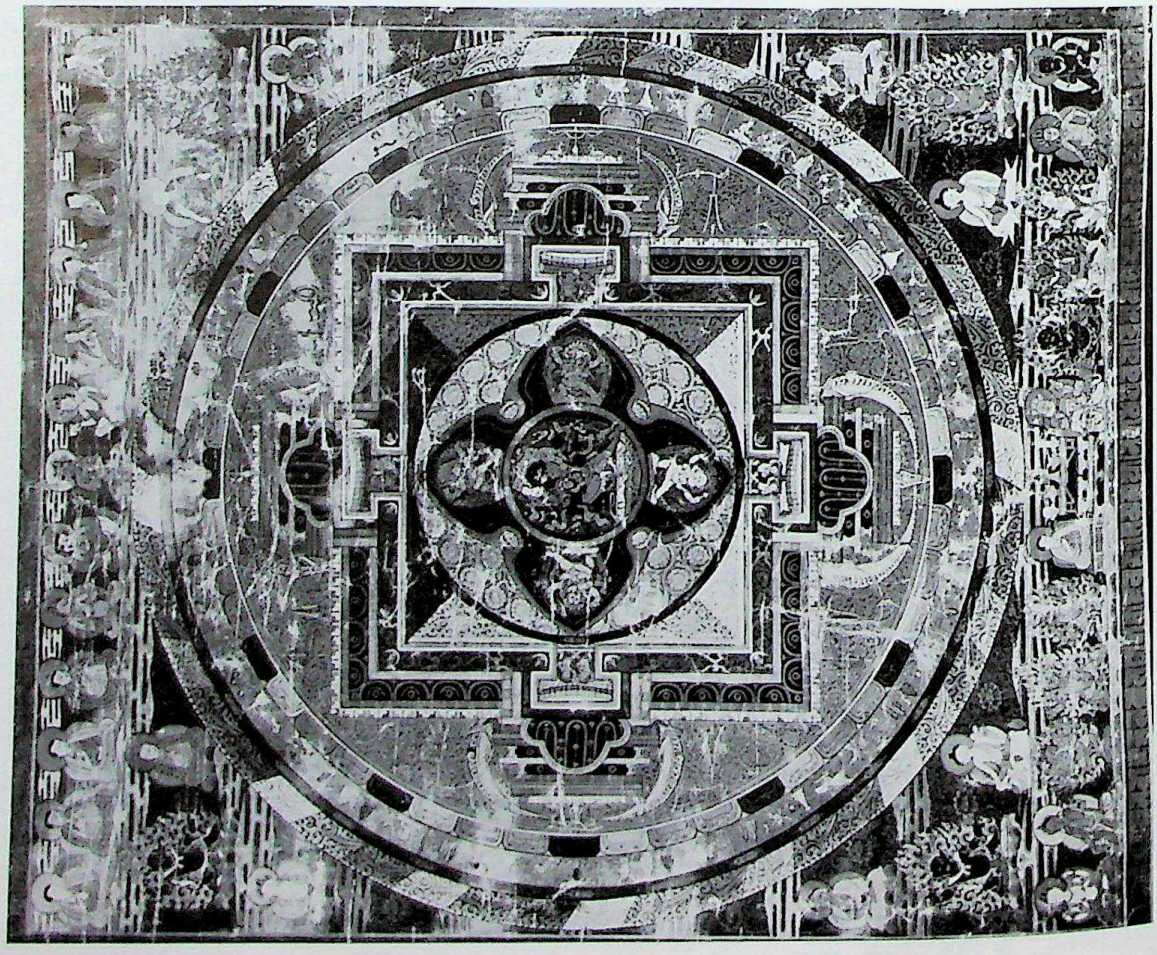
Pl. 40. sGrol ljaṅ (Skr., Śyāmā Tārā, or the Green Tārā), tanka, 17th-18th cent. Without borders, 33¹/₄×27¹/₈ in. Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 41. The king of the gods, Lhai rgyal po, as a previous incarnation of the Dalai Lama, surrounded by various personages and episodes, tanka, 18th cent. Private coll.

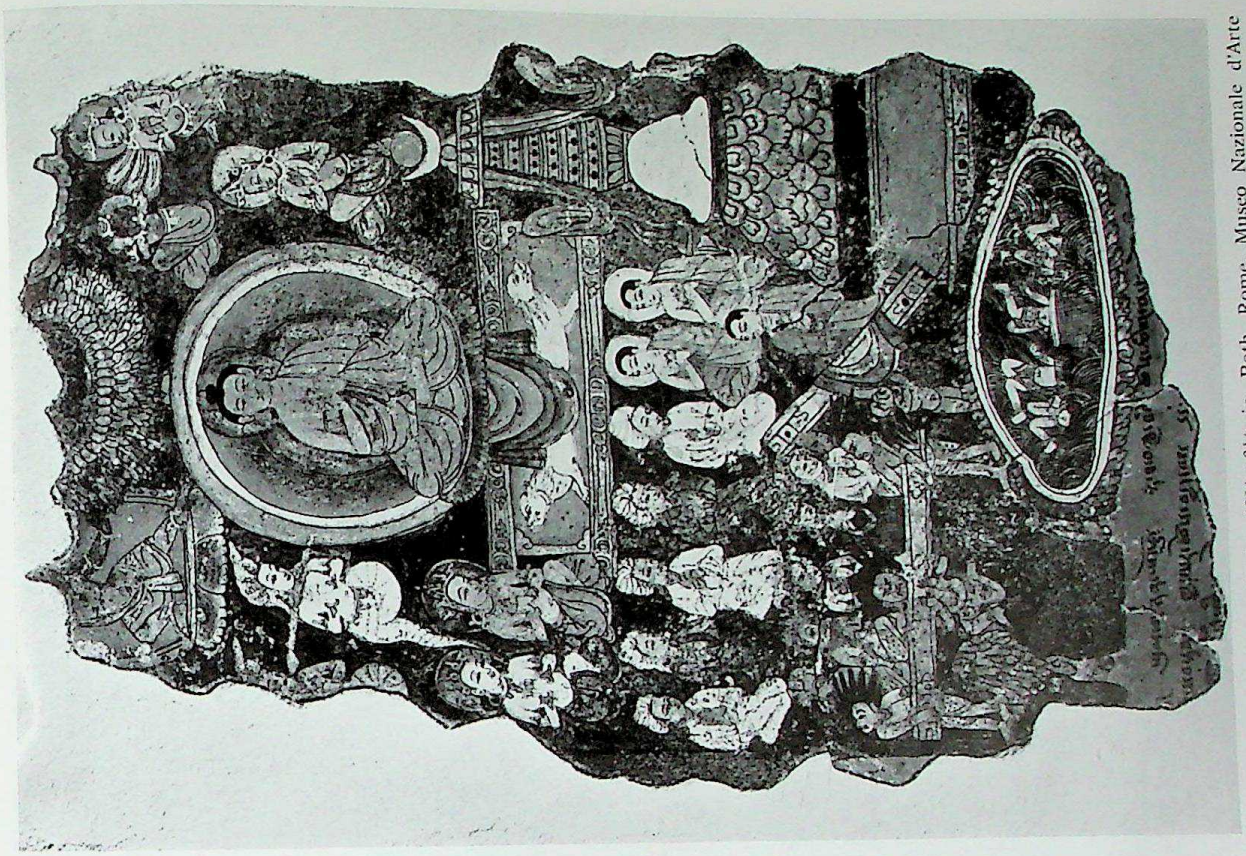
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

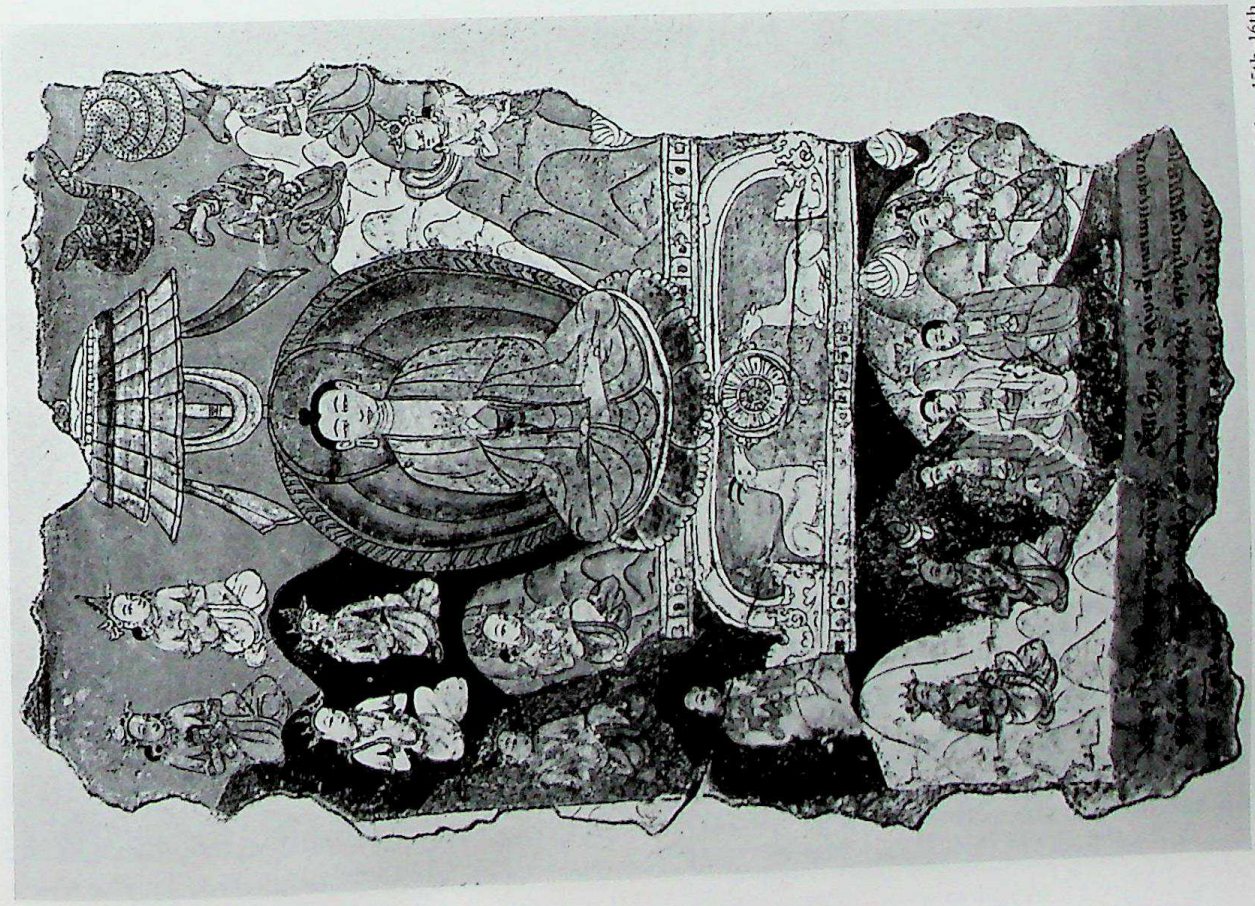




Pl. 42. Tankas, 17th-18th cent. *Left*: Vajrapāṇi-maṇḍala. Without borders, 25½×22 in. *Right*: Vajradhātu-maṇḍala. Without borders, 24¼×16½ in. Both, Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 43. Fragments of wall paintings with scenes from the life of the Buddha, 15th–16th cent. (?). *Left*: 15 3/8 × 9 1/8 in. *Right*: 13 7/8 × 8 1/8 in. Both, Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 44. rDo rje ajigs byed, terrifying manifestation of Mañjuśrī, tanka, 17th–18th cent. Without borders, 24 1/4 × 16 7/8 in. Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 45. rDo rje ạc'aṅ (Skr., Vajradhara), embroidered tanka, 17th–18th cent. Without borders, 24×18¾ in. Rome, Museo Nazionale d'Arte Orientale.

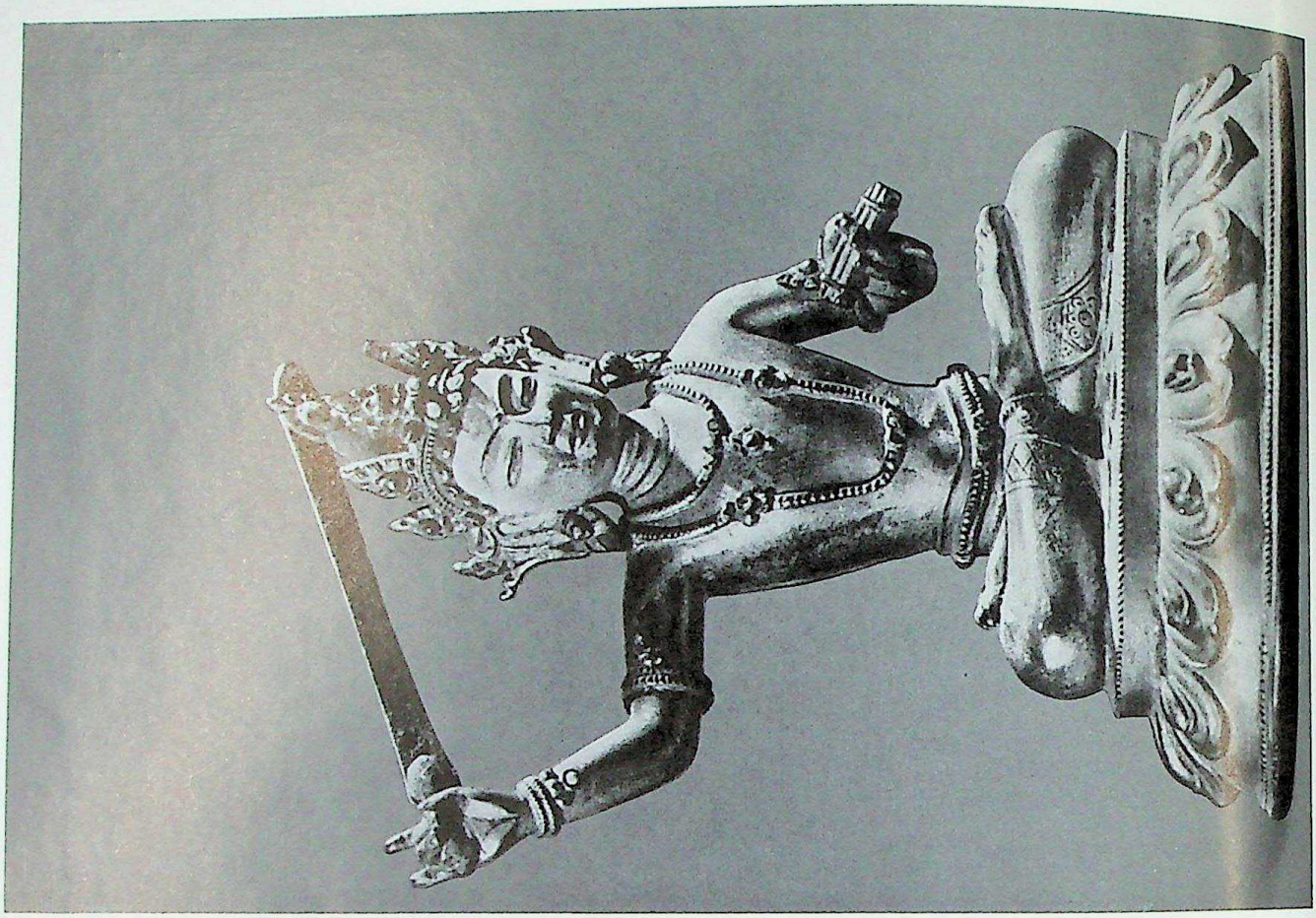
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

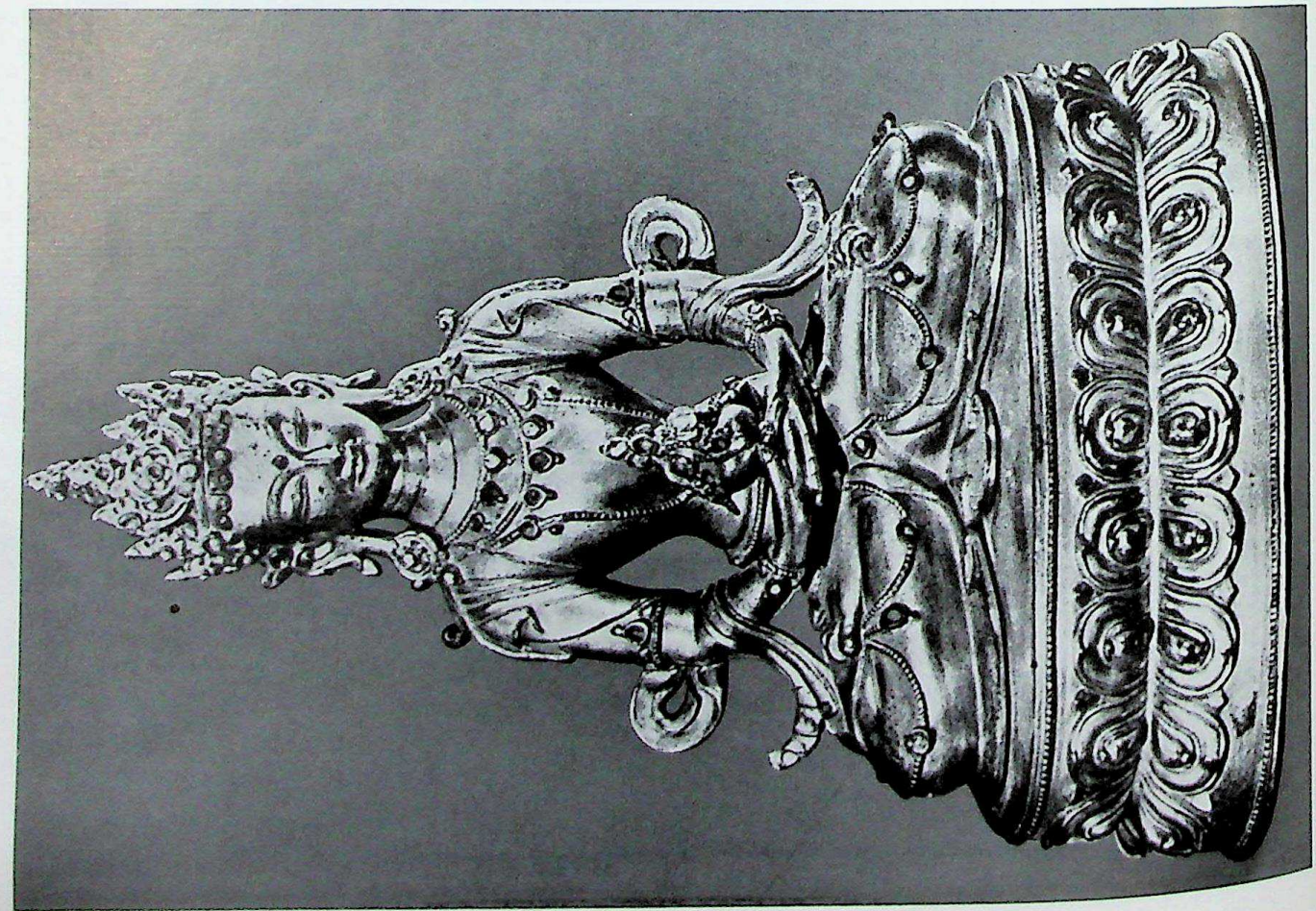
Pl. 46. Nags na gnas (Skr., Vanavāsin, one of the 16 arhats), tanka, 18th cent. Without borders, $29^{7}/_{8} \times 19^{3}/_{4}$ in. Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 47. Klui sde (Skr., Nāgasena, one of the 16 arhats), tanka, 18th cent. Without borders, 29 7/8 × 19 3/4 in. Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 48. *Left:* Ts'e dpag med (Skr., Amitāyus), 17th cent. Gilded bronze, ht., 4¼ in. *Right:* Arapacana-Mañjuśrī, with sword and book, *17th-18th cent. Gilded bronze with inlaid turquoise and lapis lazuli, iron sword;* ht., 6¼ in. Both, Prague, Náprestek Museum.

Pl. 49. *Left*: Statuette of a monk, 16th cent. Wood, ht., 7¹/₄ in. *Right*: Statuette of a lama, 17th cent. Brass, ht., 6¹/₄ in. Both, Rome, Museo Nazionale d'Arte Orientale.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

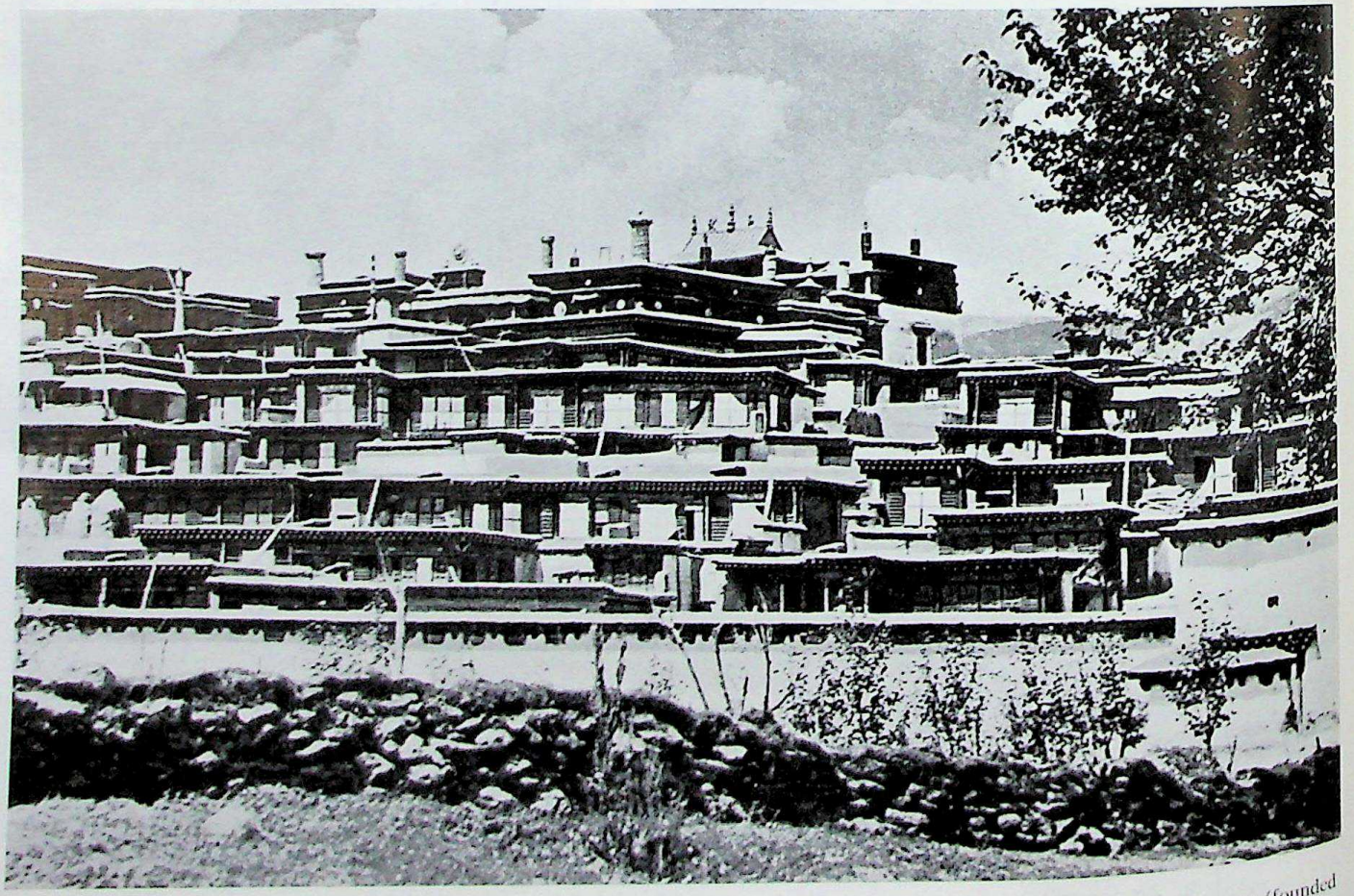
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 50. *Left, above*: Seven buddhas on a branched lotus, surrounding the central figure of T'ub pa rnam snań gańs can mts'o, 18th cent. Gilded bronze, ht., 13 3/8 in. Prague, Náprestek Museum. *Below*: Knob of a three-edged ritual dagger (*p'ur bu*, the sacred nail), 18th cent. Bronze, inlaid with turquoise. Prague, National Gallery. *Right, above*: Ritual vessel, 19th cent. (?). Wood ornamented with pierced wrought metal, ht., 16 3/4 in. *Below*: Teapot, 19th cent. Beaten brass with silver medallions, ht., 15 1/2 in. Last two, Prague, Náprestek Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

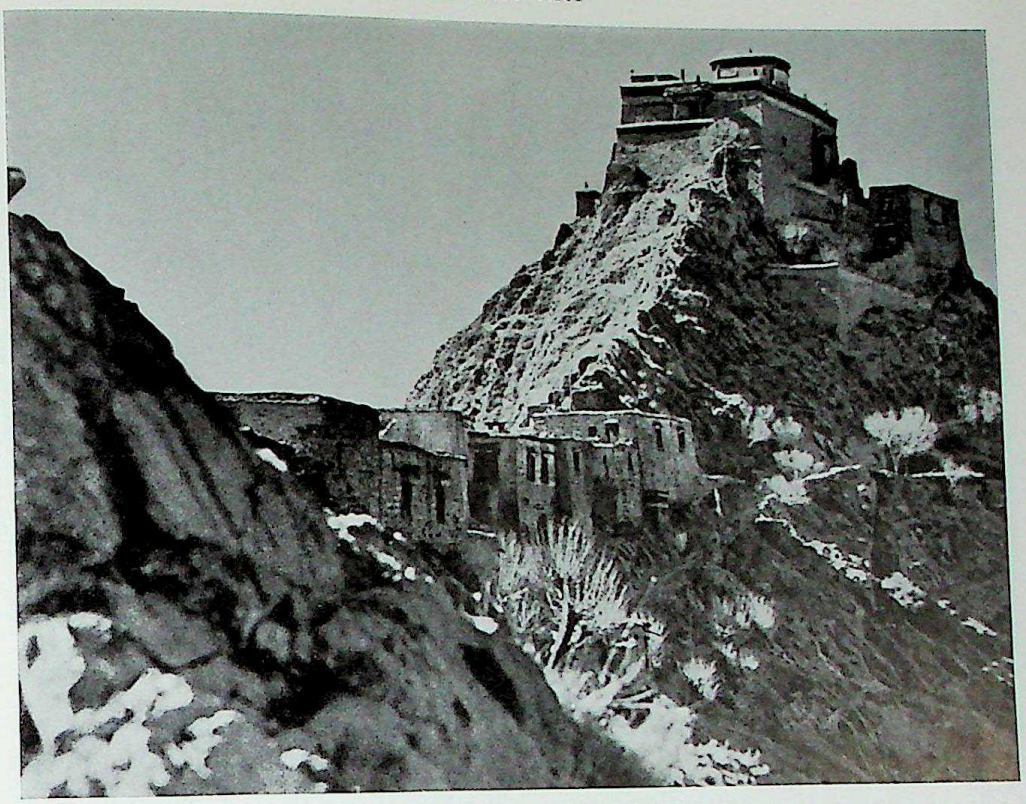
Pl. 51. *Above*: Teapot with dragon motifs, 19th cent. Silver and brass with cast handle and spout, ht., 11 3/8 in. *Below*: Covered vessel, decorated with dragons and symbols of happiness, 19th–20th cent. Copper with gilded details, ht., 7 1/2 in. Both, Moravská Třebová, Czechoslovakia, Museum.

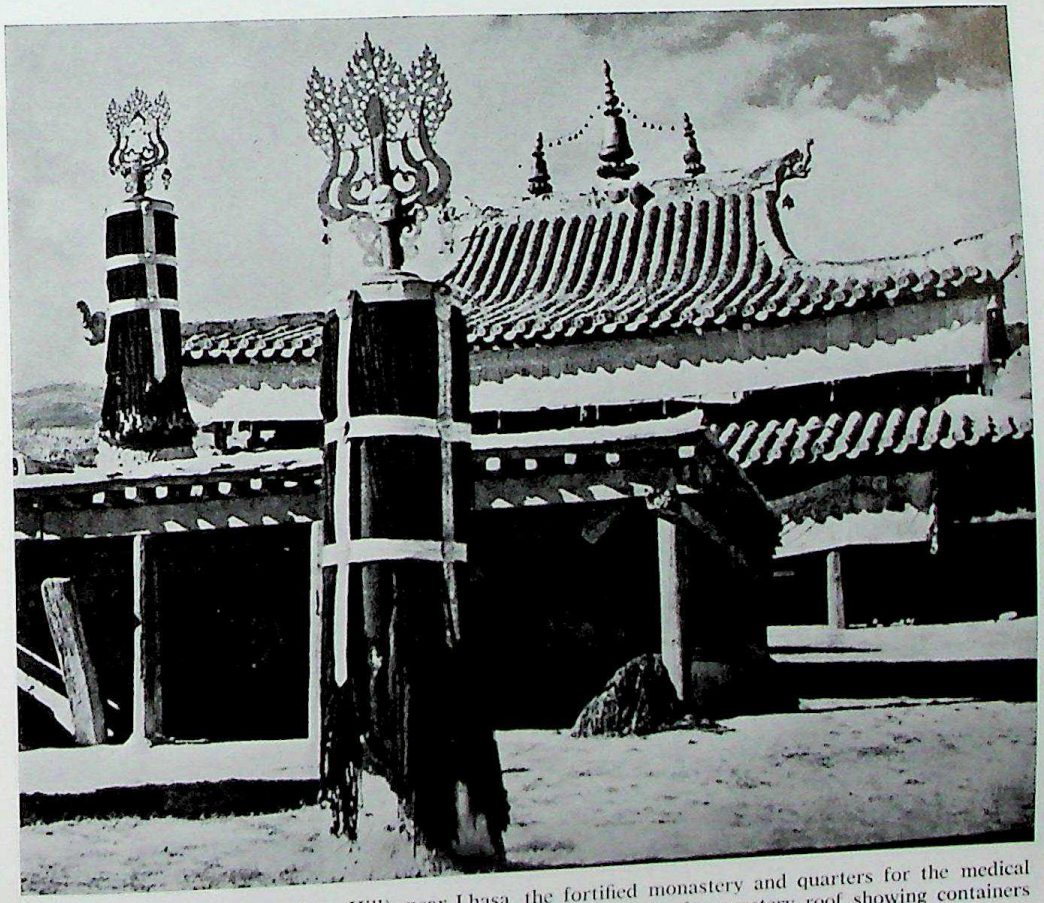
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 52. *Above*: Lhasa, the Potala Palace on the dMar po ri (Red Hill), begun 1643. *Below*: The Rwa sgreṅ monastery (founded 1057), showing the temple surrounded by living quarters for the lamas.

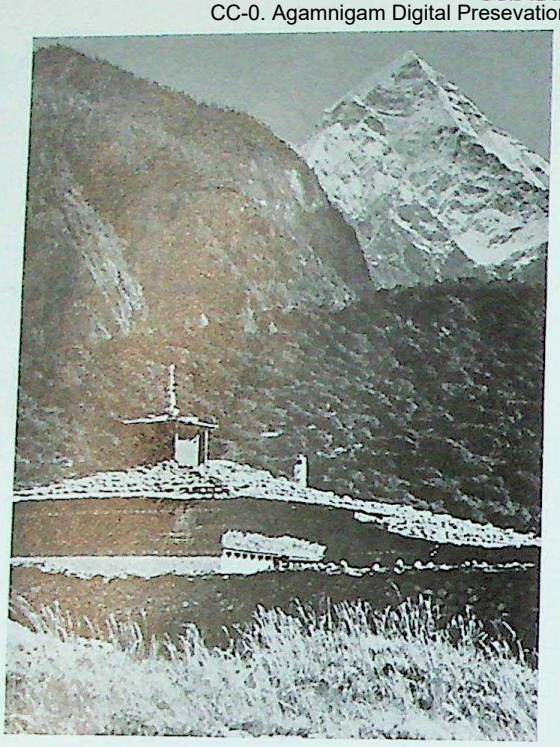
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

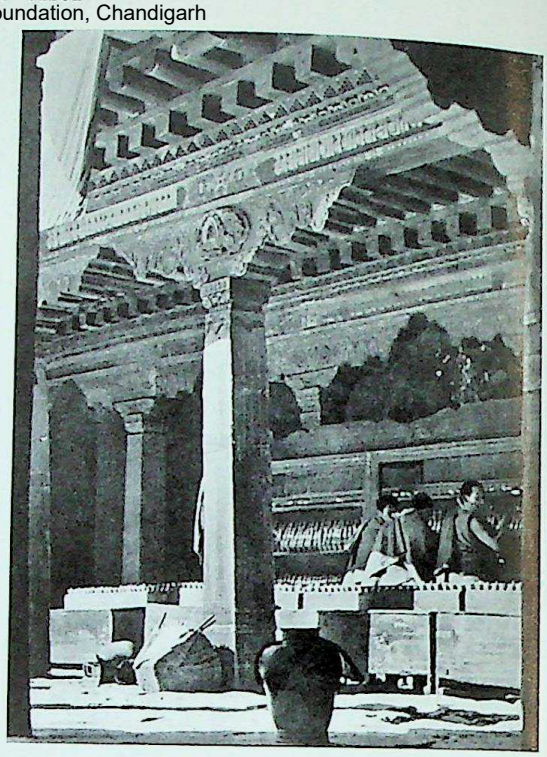


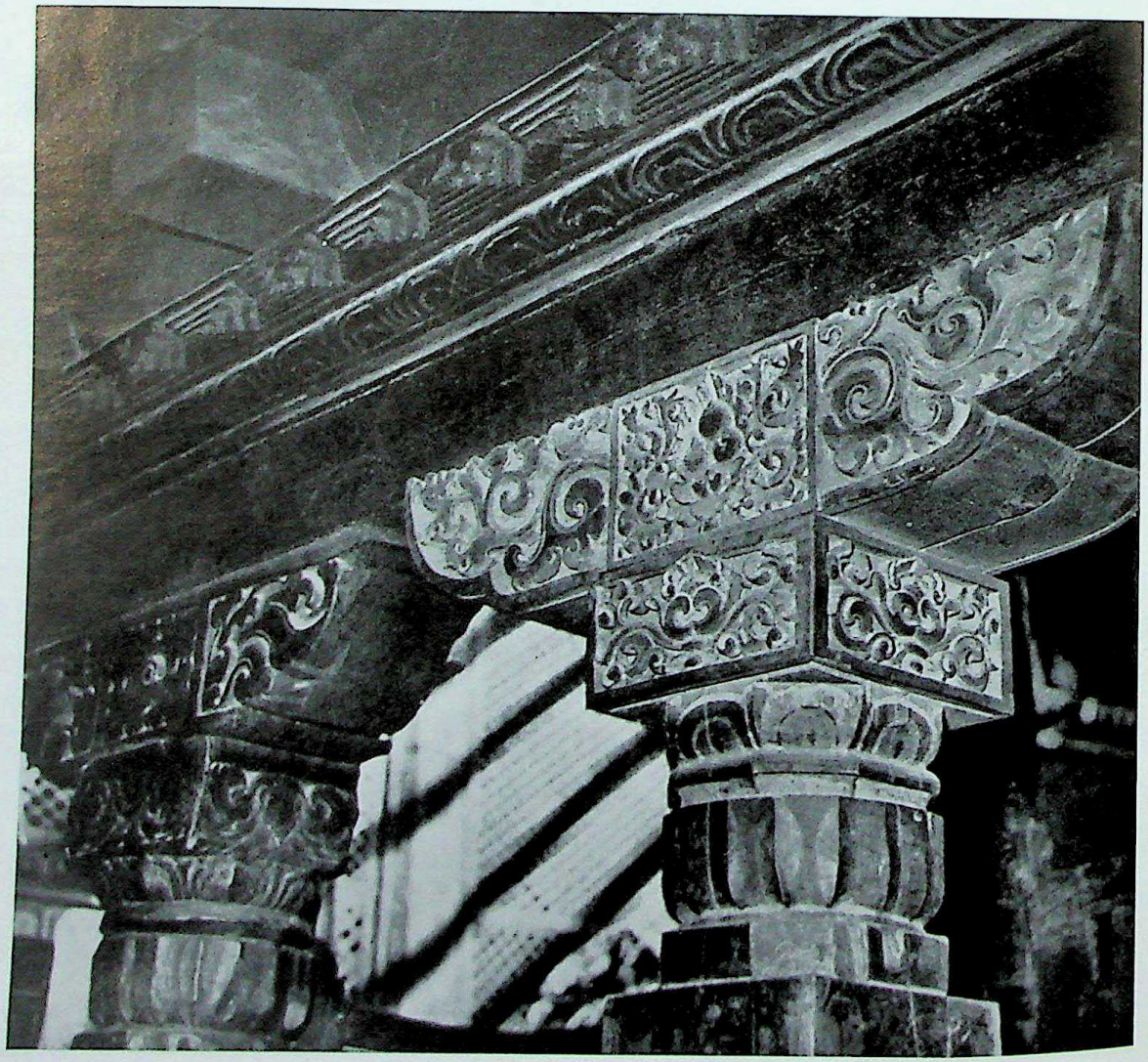


Pl. 53. *Above*: lCags po ri (Iron Hill), near Lhasa, the fortified monastery and quarters for the medical faculty, 17th–18th cent. on an older structure. *Below*: Detail of monastery roof showing containers for prayer strips covered by yak tails and surmounted by rtse gsum (the trisula), Kantze, Kham area.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

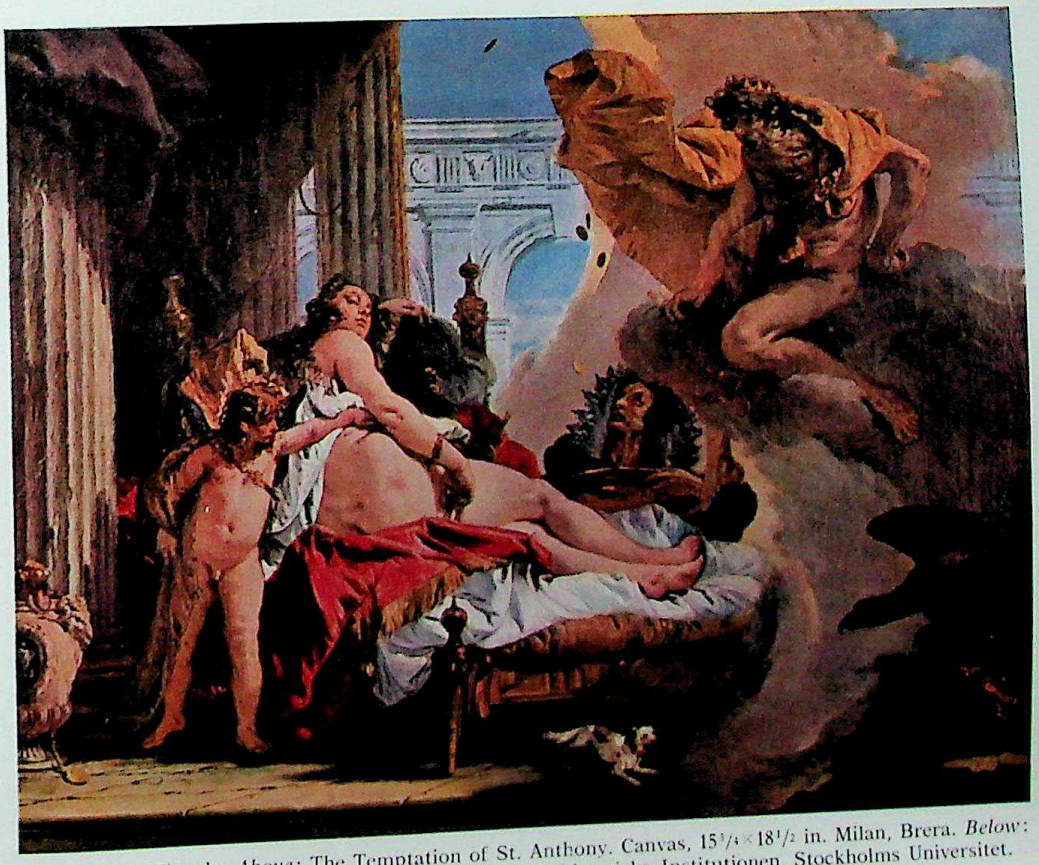






Pl. 54. *Above, left*: Mountain temple on the Lanag ri, showing stone-weighted shingle roof. *Right and below*: Lhasa, the Jo k'aṅ (aP'rul snaṅ), a corner of the court and (*below*) surviving ancient capitals, founded 7th cent.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 55. G. B. Tiepolo. *Above*: The Temptation of St. Anthony. Canvas, $15^{3}/_{4} \times 18^{1}/_{2}$ in. Milan, Brera. *Below*: Danaë. Canvas, $16^{1}/_{8} \times 20^{7}/_{8}$ in. Stockholm, Konsthistoriska Institutionen, Stockholms Universitet.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 56. G. B. Tiepolo, The Martyrdom of St. Agatha. Canvas, 6 ft., 1/2 in. × 4 ft., 3 1/2 in. Berlin, Staatliche Museen.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 57. G. B. Tiepolo. *Above*: The Madonna of Mt. Carmel and the Souls in Purgatory. Canvas, 6 ft., 10½ in. × 13 ft., 9½ in. Milan, Brera. *Below*: Rachel Hiding the Idols. Fresco. Udine, Italy, Palazzo Arcivescovile.

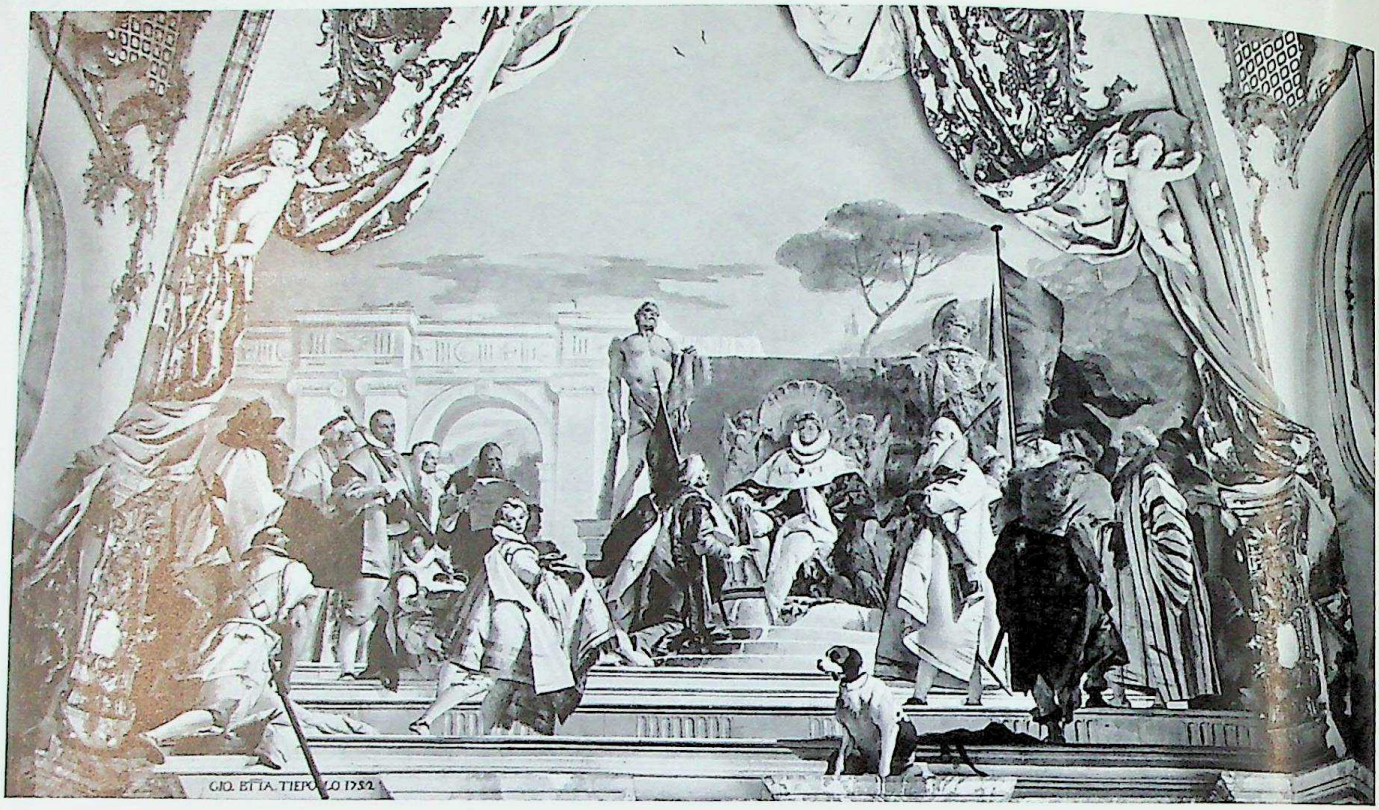
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

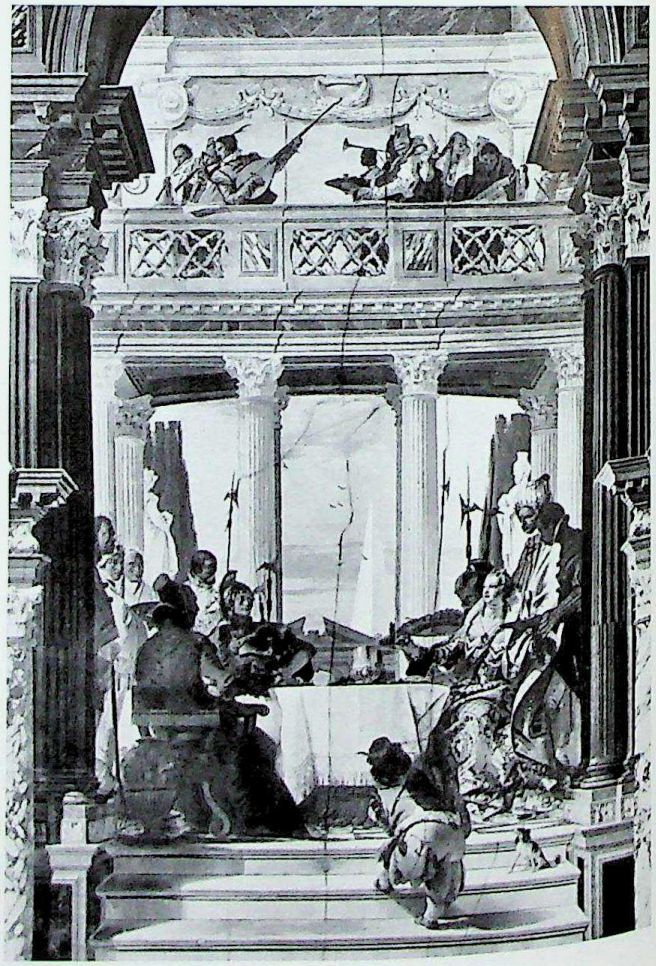
Pl. 58. G. B. Tiepolo. *Left:* Phaëthon and Apollo, sketch for fresco in Palazzo Archinto, Milan. Canvas, 26 1/2 × 20 5/8 in. Vienna, *Akademie der Bildenden Künste. Right:* The Gathering of the Manna. Canvas, 32 ft., 9 3/4 in. × 17 ft., 2 3/4 in. Verolanuova, Italy, parish church.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 59. G. B. Tiepolo. *Left*: St. Dominic Instituting the Rosary. Fresco. Venice, Church of the Gesuati. *Right*: The Triumph of Faith. Fresco. Venice, S. Maria della Pietà.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 60. G. B. Tiepolo. *Above*: The Investiture of Bishop Harold. Fresco. Würzburg, Germany, Residenz. *Below, left*: The Meeting of Anthony and Cleopatra. Fresco. *Right*: The Banquet of Anthony and Cleopatra. Fresco. Last two, Venice, Palazzo Labia.

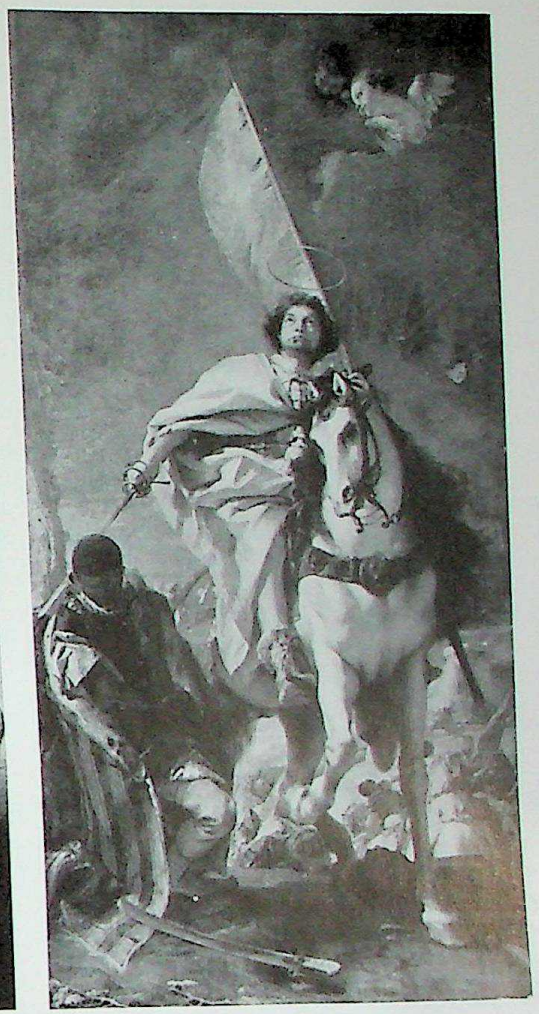
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

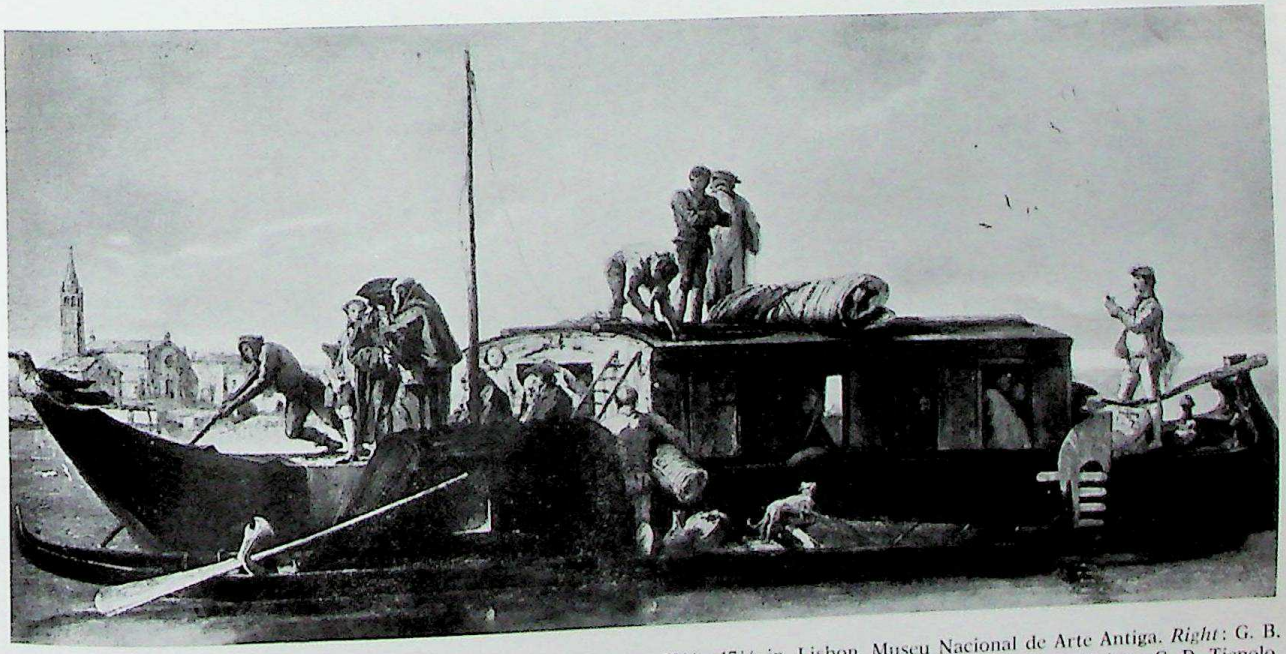
Pl. 61. G. B. Tiepolo. *Above*: The Sacrifice of Iphigenia. Fresco. Vicenza, Italy, Villa Valmarana. *Below*: Apotheosis of the Pisani Family, detail. Fresco. Stra, near Chioggia, Italy, Villa Pisani.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 62. G. B. Tiepolo, St. Thecla Praying for the Plague-stricken, sketch for the altarpiece in the Cathedral of Este, Italy. Canvas, 32×17⅝ in. New York, Metropolitan Museum.

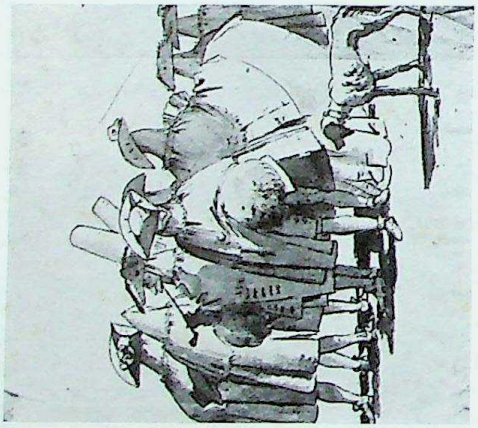
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

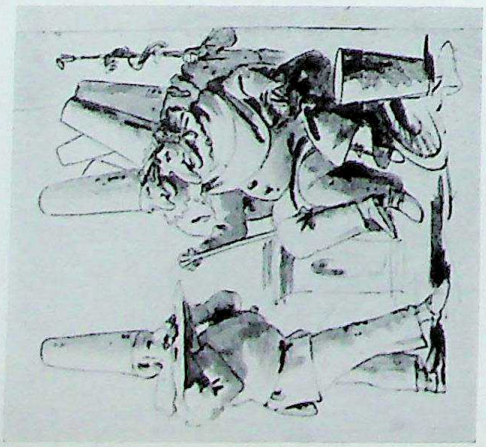




Pl. 63. *Above, left*: G. B. Tiepolo, The Flight into Egypt. Canvas, 22½ × 17⅛ in. Lisbon, Museu Nacional de Arte Antiga. *Right*: G. B. Tiepolo, St. James of Compostela. Canvas, 10 ft., 4¾ in. × 5 ft., 4 in. Budapest, Museum of Fine Arts. *Below*: G. D. Tiepolo, The Burchiello. Canvas, 15 × 30⅞ in. Vienna, Kunsthistorisches Museum.

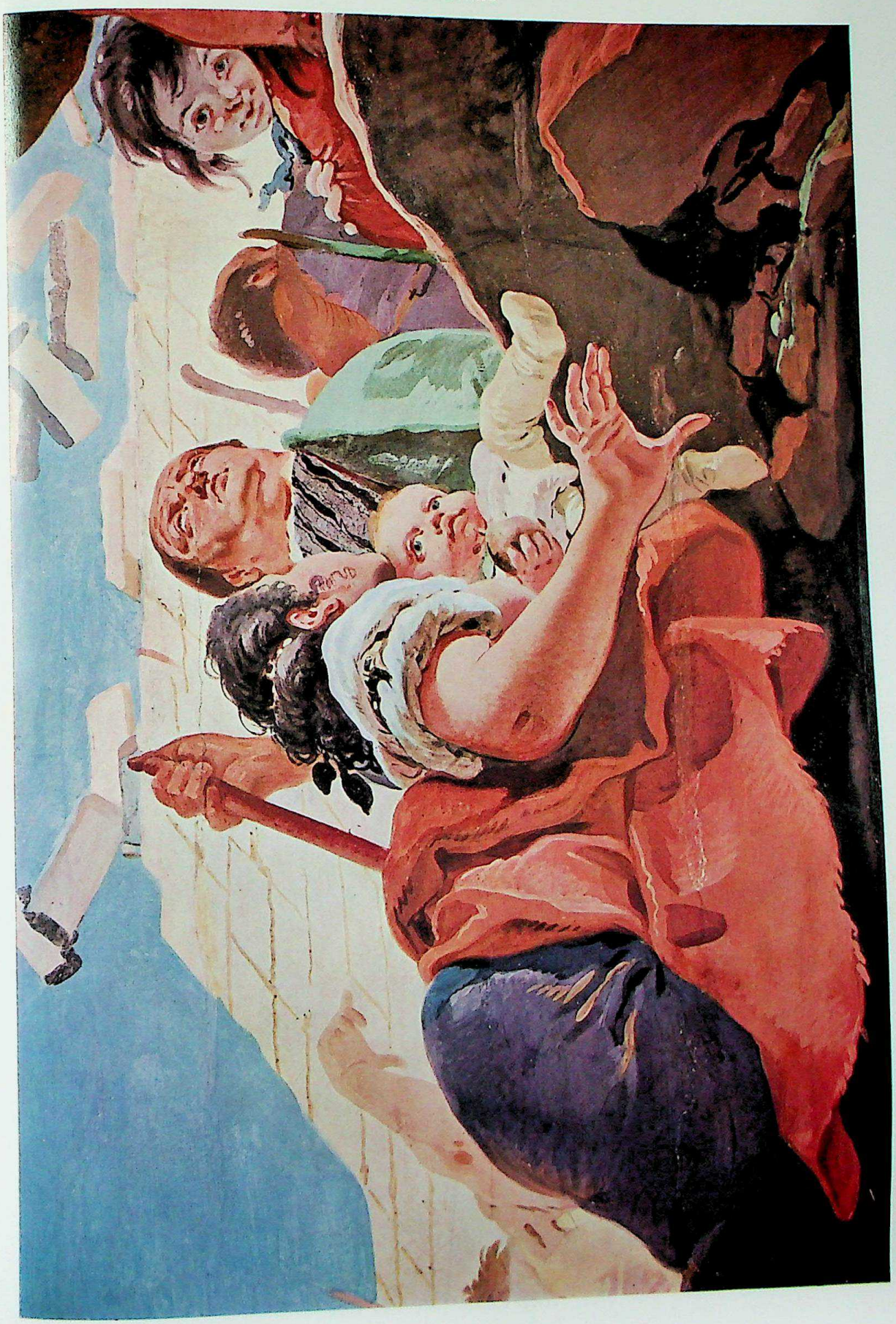
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 64. *Left and center, above:* G. B. Tiepolo, pen drawings with wash. *Left:* Group of Pulcinelli. *Center:* Masquerade. Both, Trieste, Italy, Museo Civico di Storia ed Arte. *Below:* G. D. Tiepolo, The Flight into Egypt. Engraving. *Right:* L. Tiepolo, Carlo Goldoni. Chalk drawing, 44 1/8 in. Vienna, Albertina.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

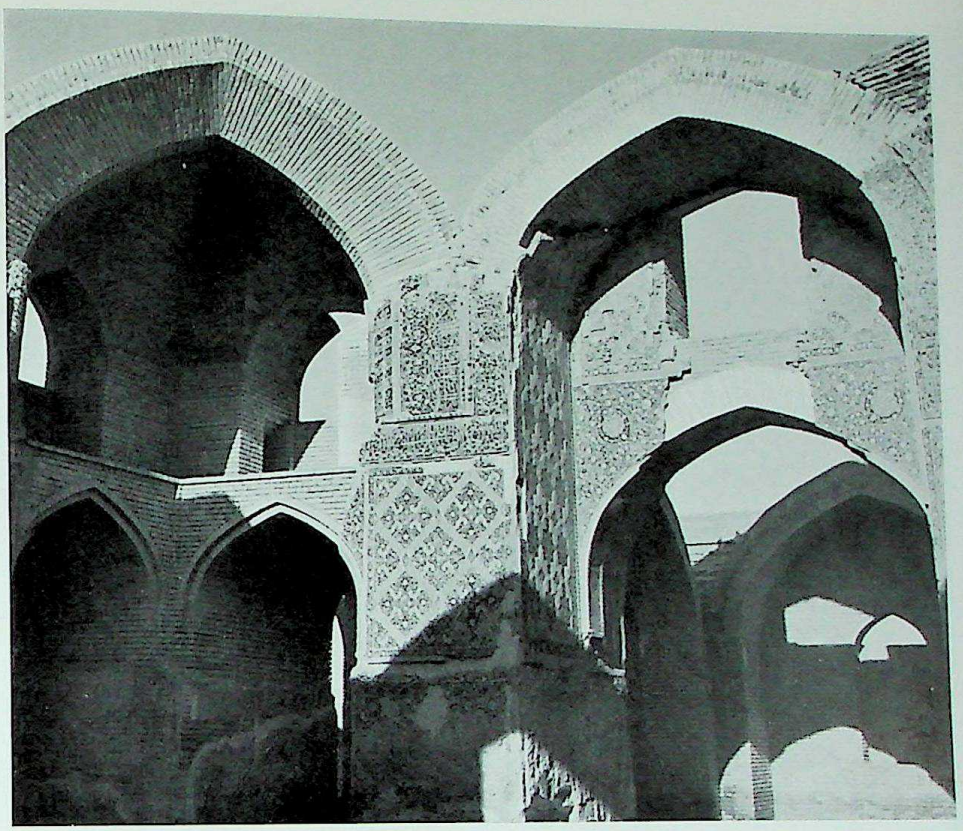


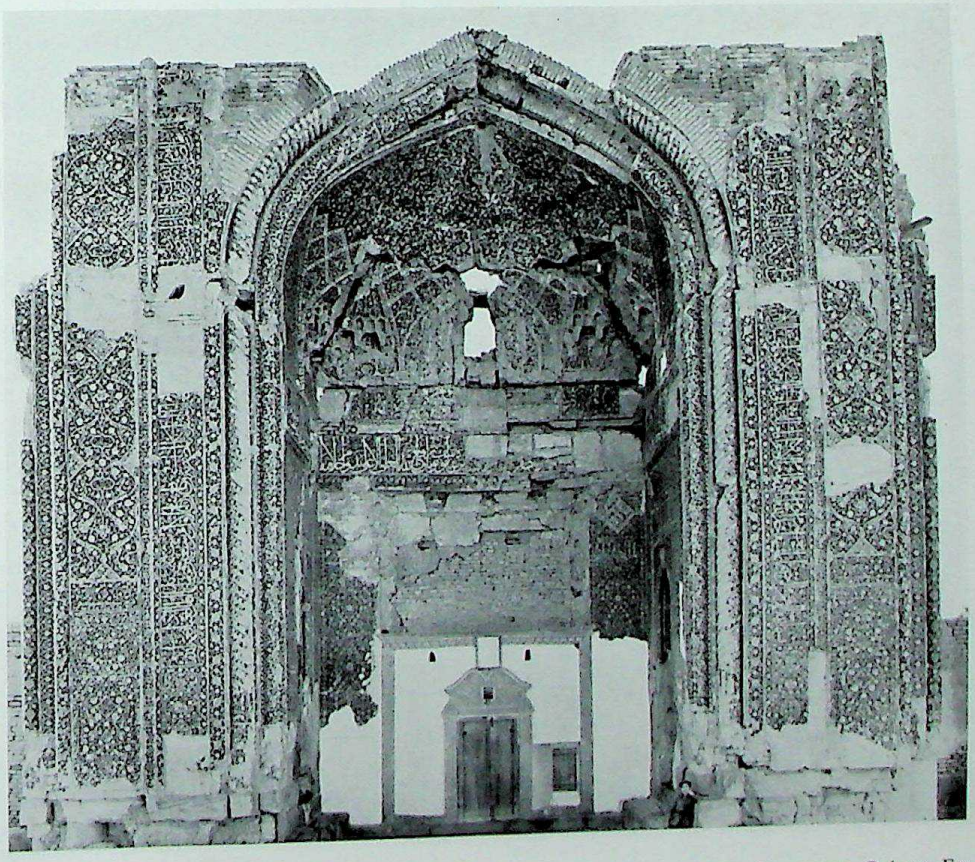
Pl. 65. G. B. Tiepolo, The Power of Eloquence, detail. Fresco. Venice, Palazzo Sandi (now Cipollato).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 66. G. D. Tiepolo, A Winter Walk, detail. Fresco. Vicenza, Italy, Villa Valmarana.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



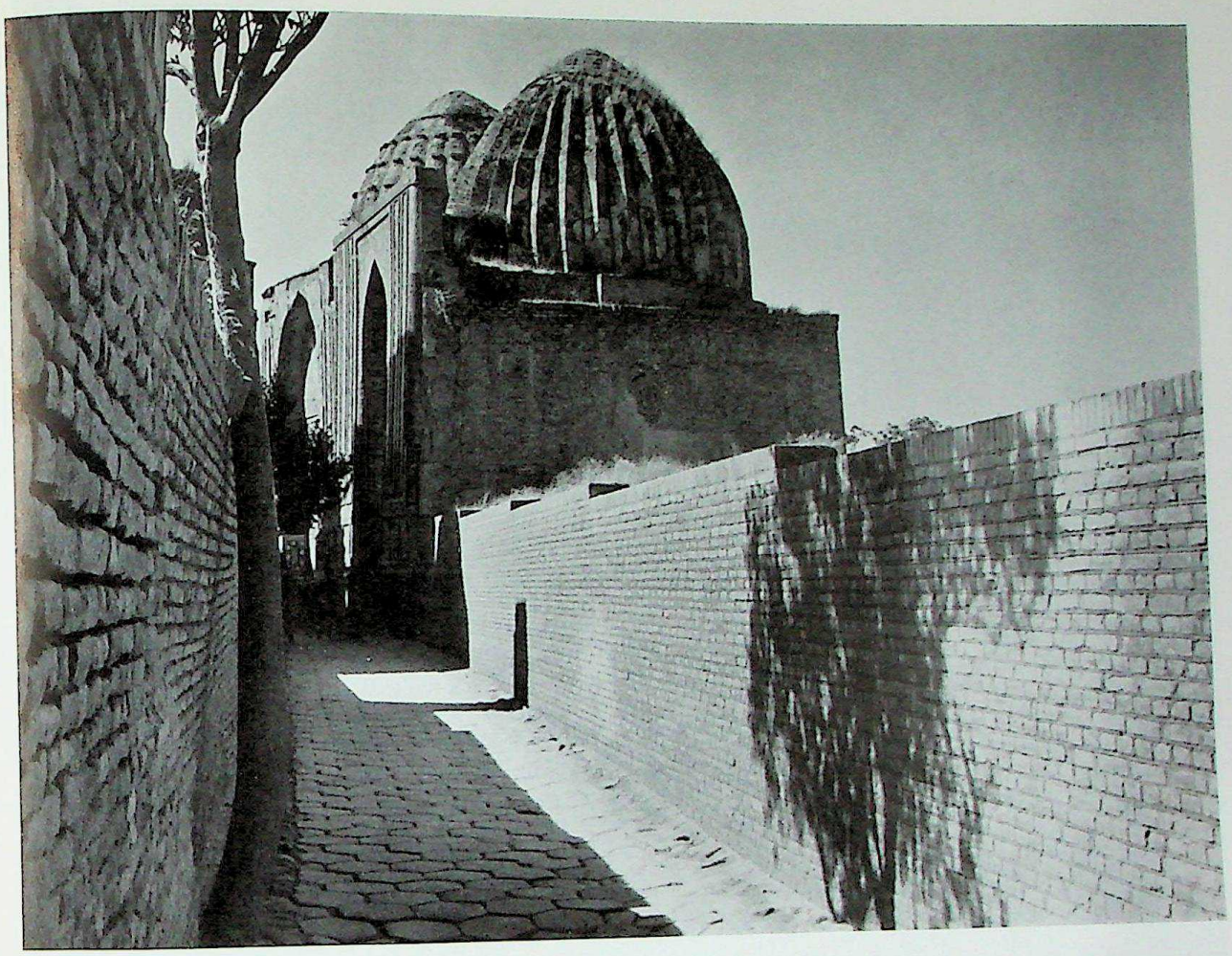


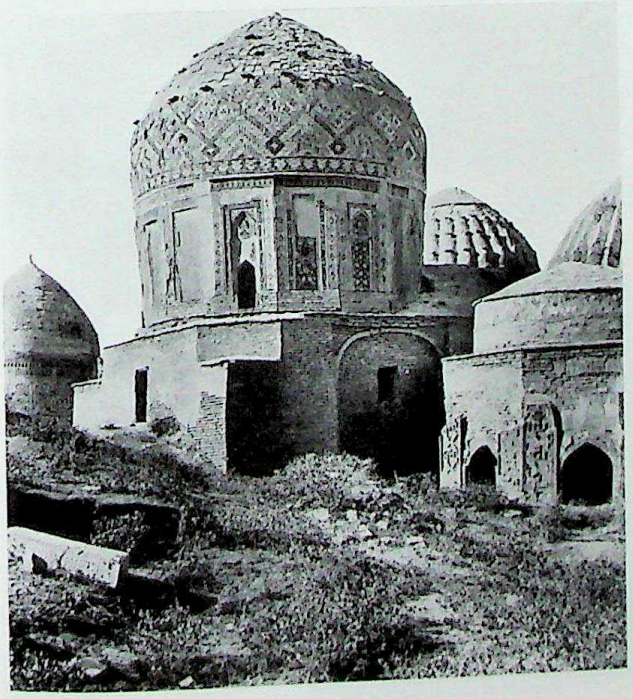
Pl. 67. Tabriz, Iran, the Blue Mosque (Masjid-i-Kabūd), 1465. *Above*: Main Sanctuary. *Below*: Entrance portal.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 68. Samarkand. *Above*: Gūr-i-Mīr, 1405 (at right, portal of 1434). *Below*: Madrasah of Ulugh Beg, 1417–20.

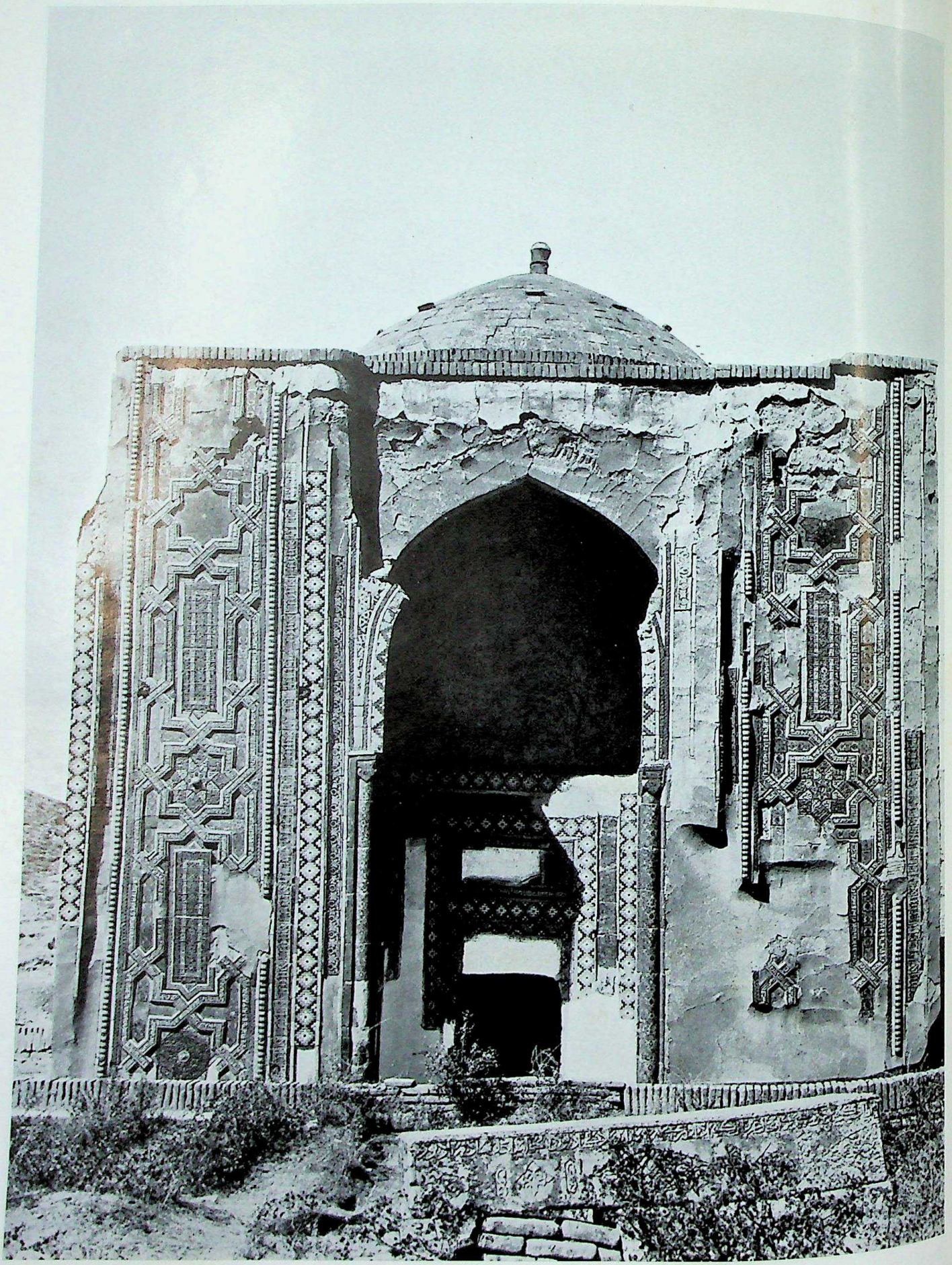
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





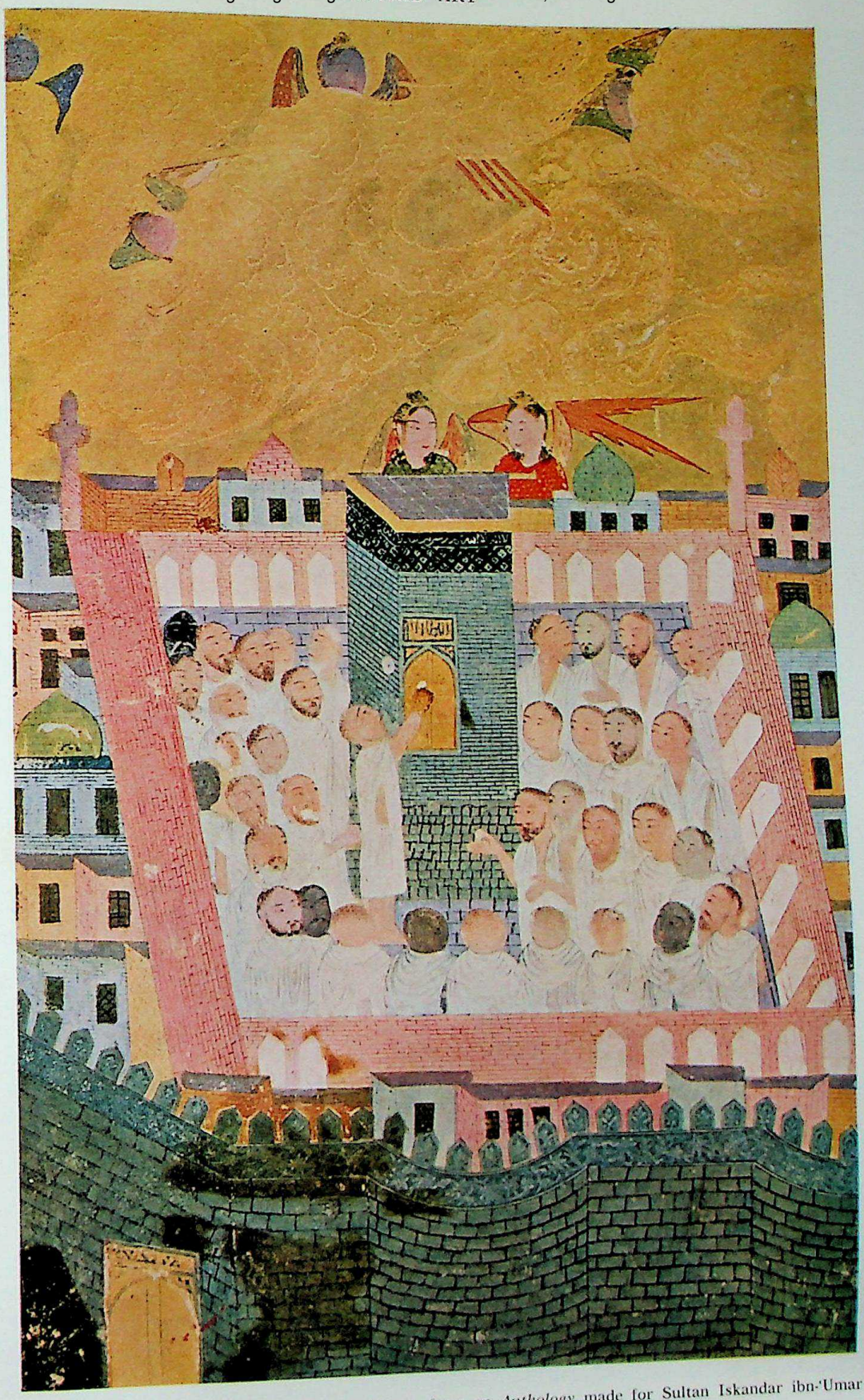
Pl. 69. Samarkand, Shāh-i-Zind. *Above*: Street of the Tombs, with mausoleums of Emir Hassan (1376) and Chujuk Biqa (1371). *Below, left*: Tomb of Shīrīn Biqa Āqā, 1385. *Right*: Tomb of Olja Aijm (on right) and of Bībī Seneb (Zaynab), ca. 1400.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 70. Samarkand, Shāh-i-Zind, the so-called "Chinese tomb," ca. 1380.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

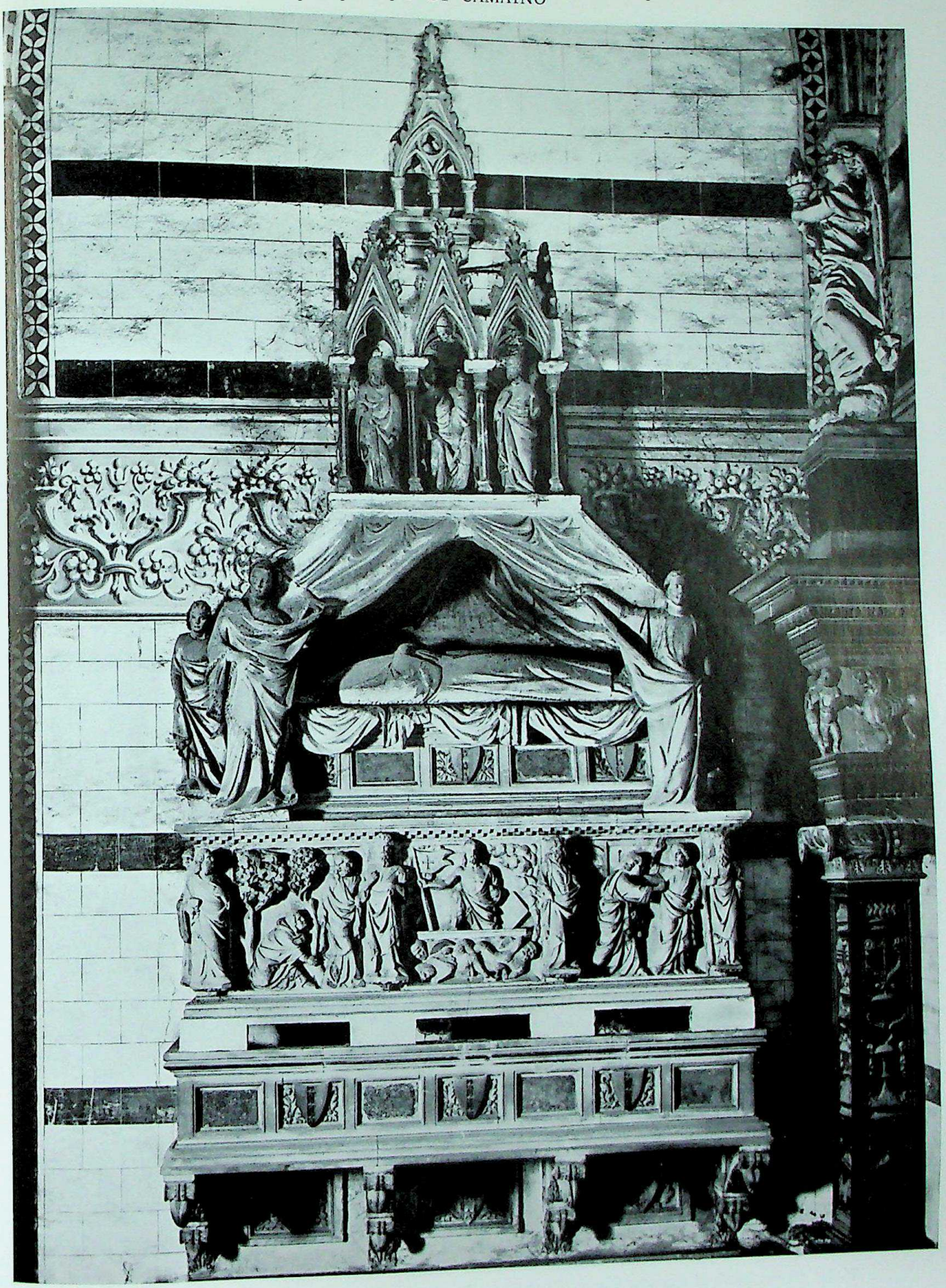


Pl. 71. Majnūn before the Ka'ba (Kaaba) at Mecca, from an *Anthology* made for Sultan Iskandar ibn-'Umar Shaykh, Shiraz, 1410–11. Miniature. London, British Museum (Add. 27261, fol. 363).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

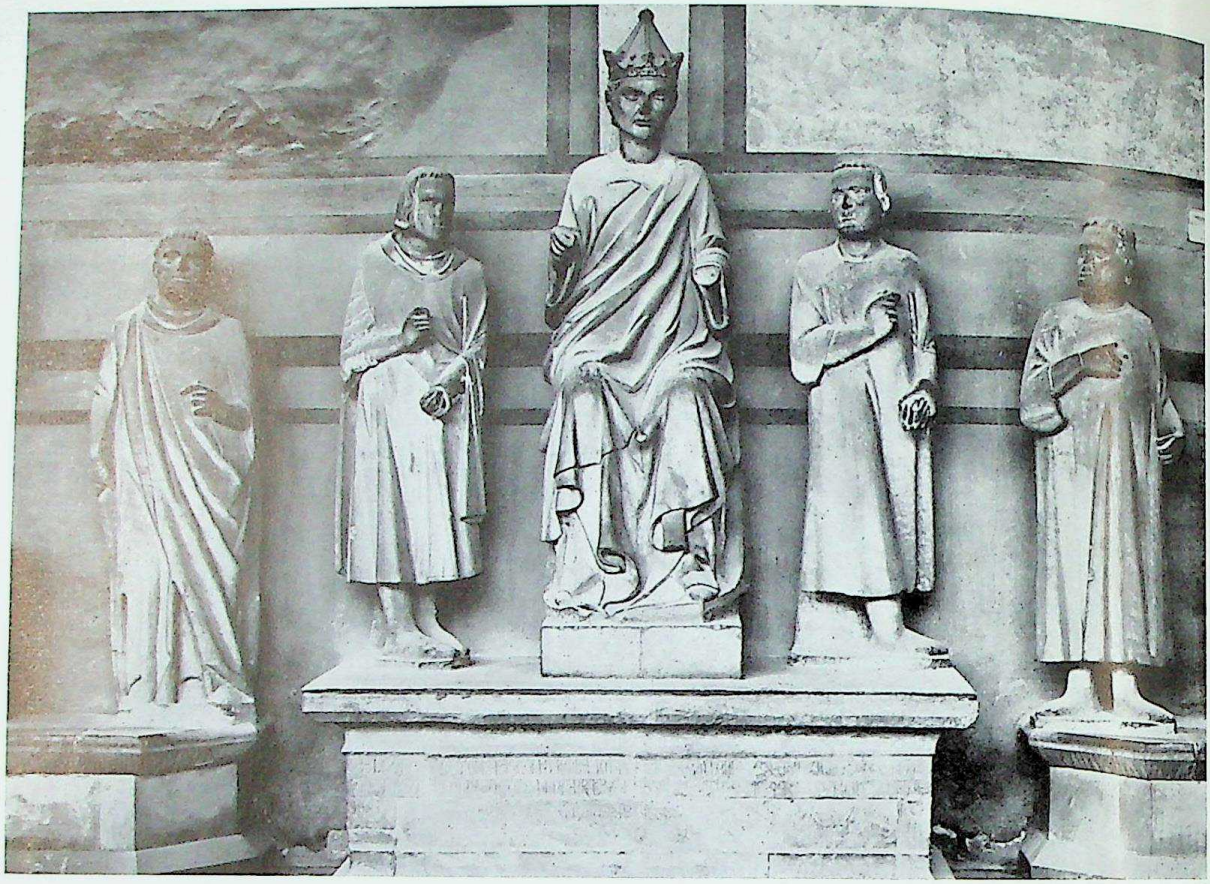
Pl. 72. Laylā and Majnūn fainting, *Khamsa* of Jamālī, Baghdad, 1465. London, India Office Library [No. 138 (Ethé 1284), fol. 101 b].

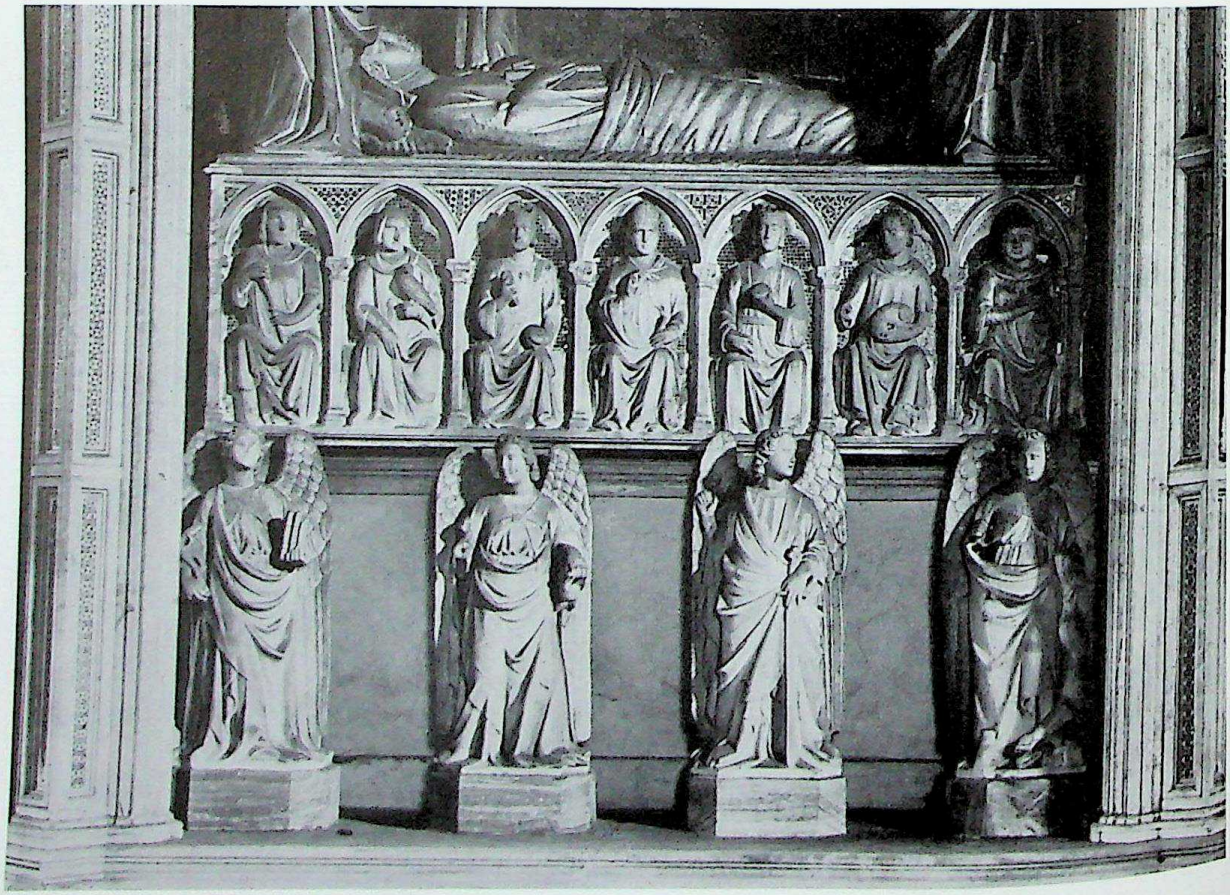
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 73. Tomb of Cardinal Riccardo Petroni. Marble. Siena, Cathedral.

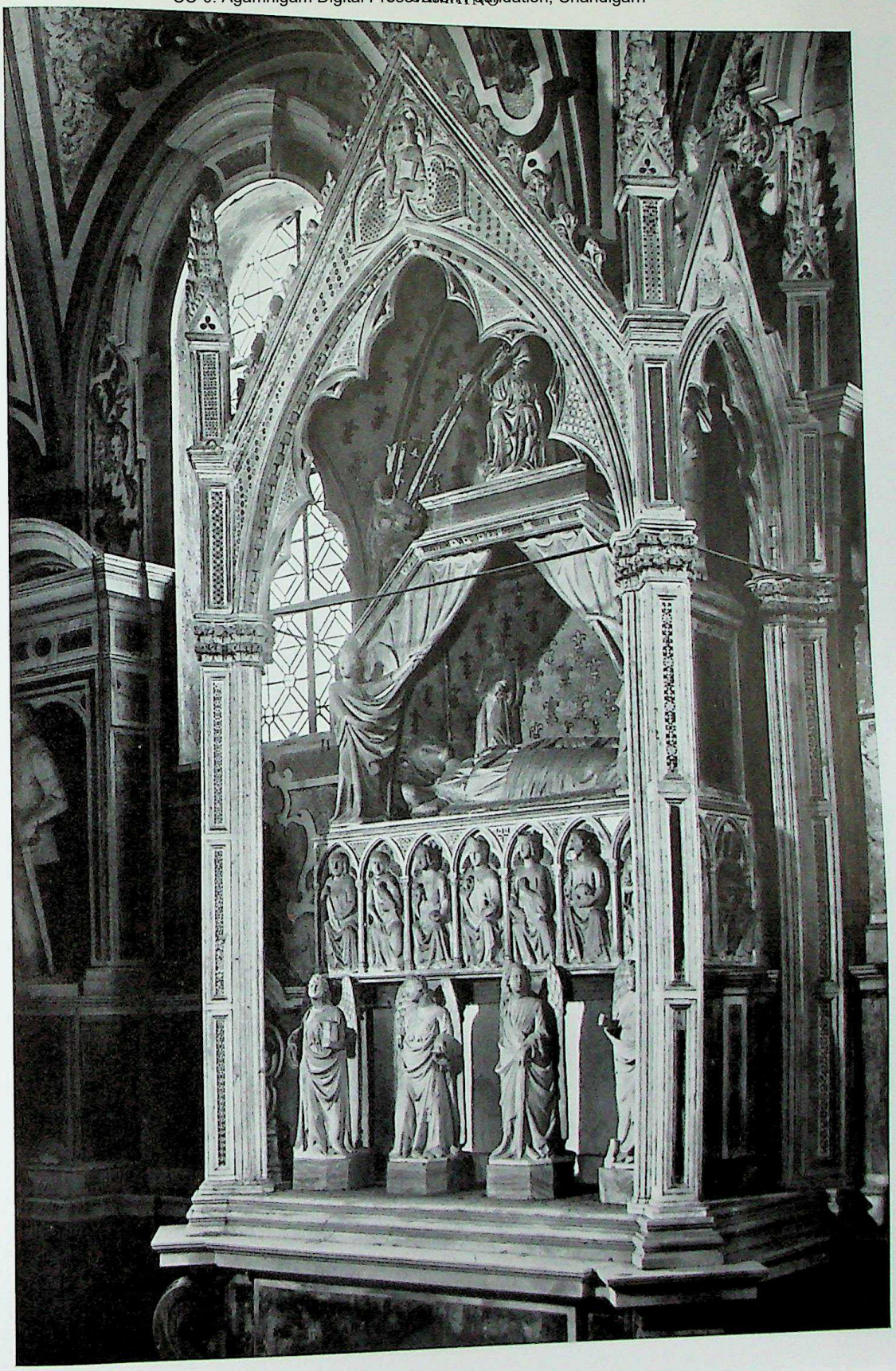
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 74. *Above*: Tomb of Emperor Henry VII. Marble, Pisa, Camposanto. *Below*: Tomb of Queen Mary of Hungary, detail of PL. 75.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

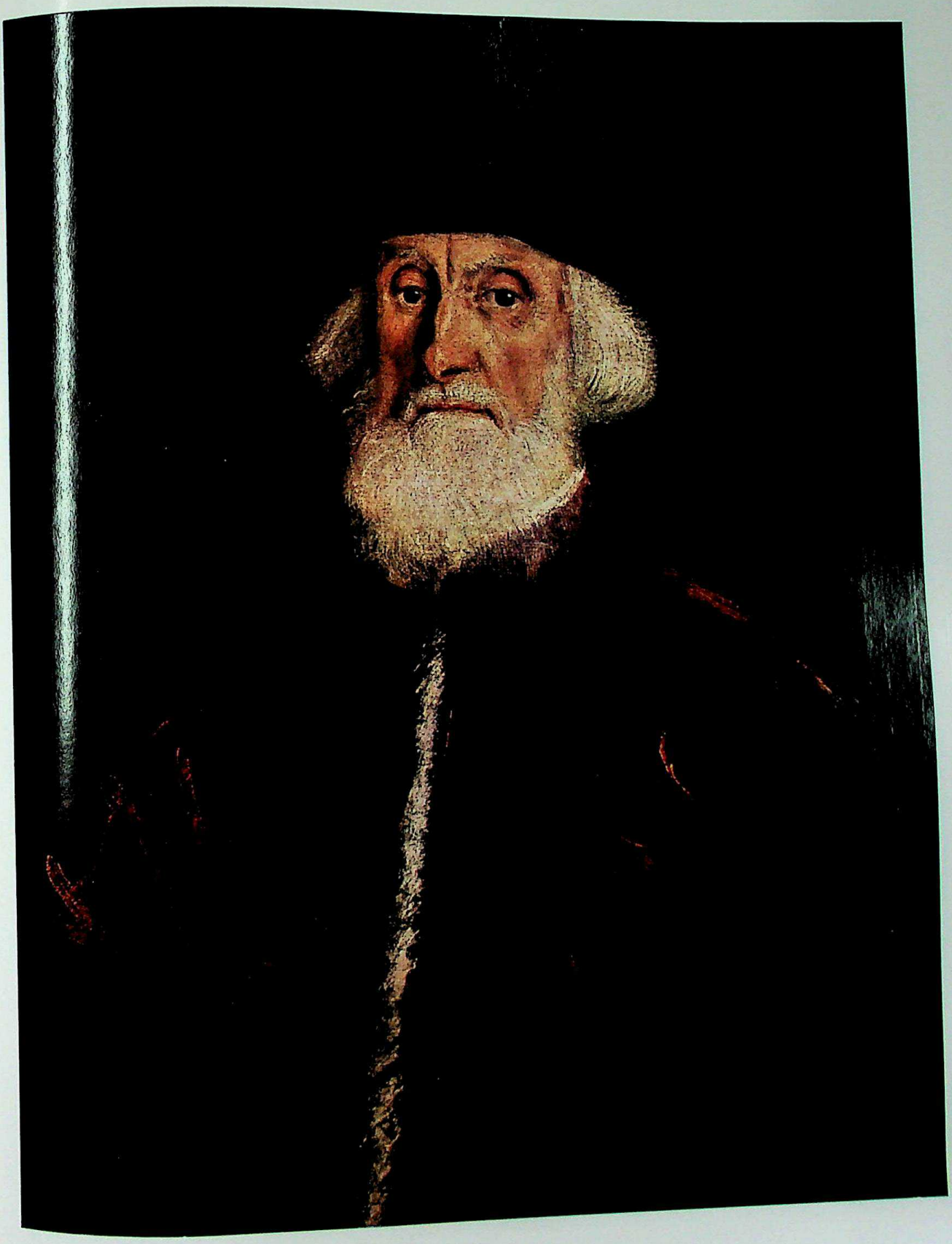


Pl. 75. Tomb of Queen Mary of Hungary. Marble. Naples, S. Maria Donnaregina.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 76. Charity. Marble, over life-size. Florence, Museo Bardini.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 77. Jacopo Soranzo. Canvas, 29 1/2 × 23 5/8 in. Milan, Castello Sforzesco.

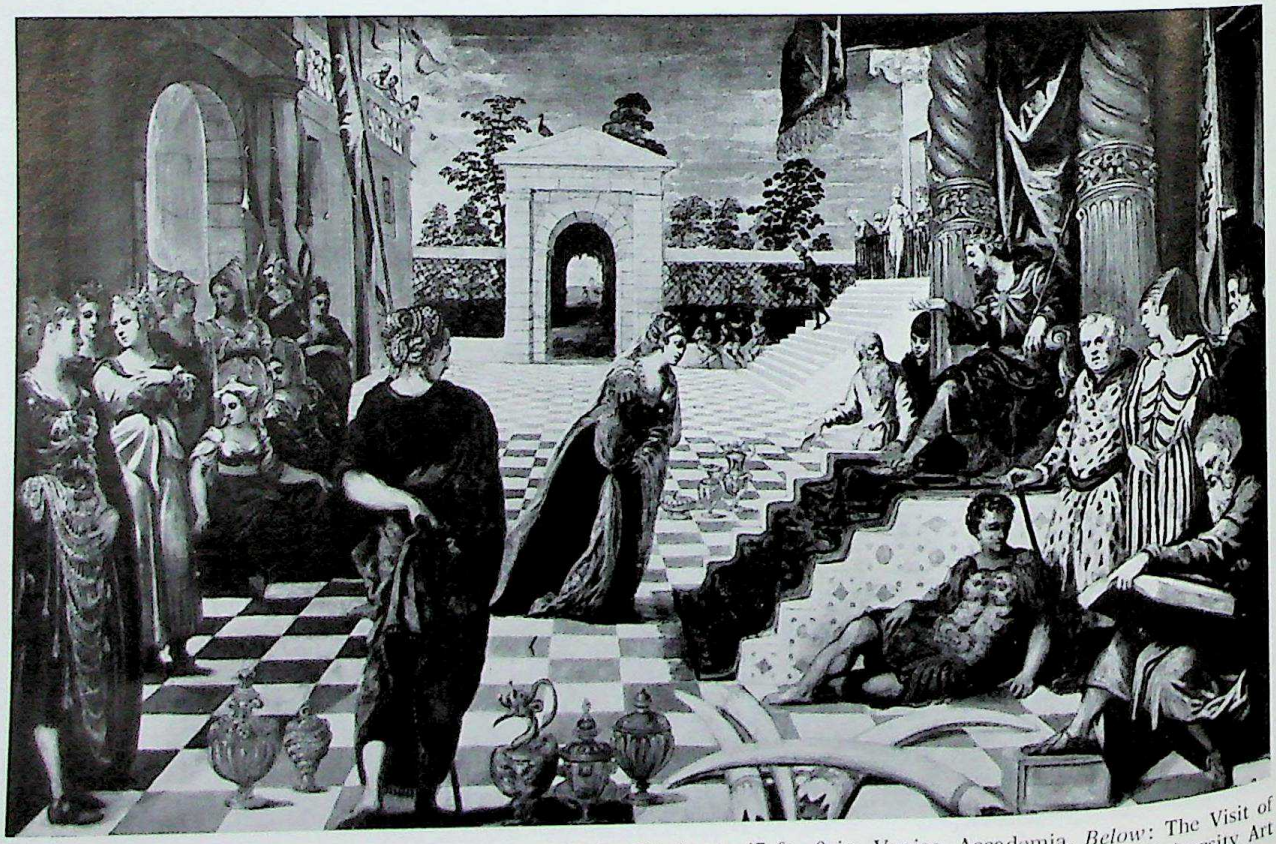
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 78. *Above*: Belshazzar's Feast, detail. Panel; full size, 11 3/8 in. × 5 ft., 1 3/8 in. *Below*: Susanna and the Elders. Canvas, 4 ft., 9 3/4 in. × 6 ft., 4 1/4 in. Both, Vienna, Kunsthistorisches Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

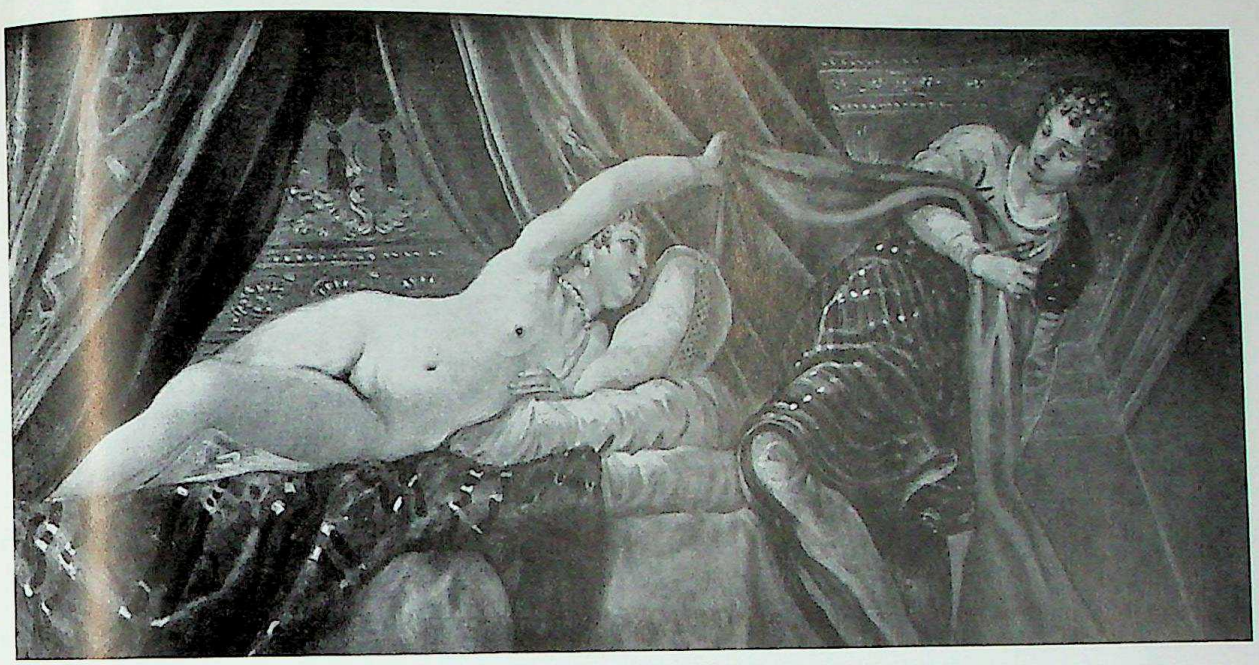
Pl. 79. *Above*: The Last Supper. Canvas, 5 ft., 1¼ in. × 14 ft., 2½ in. Venice, S. Marcuola. *Below*: Christ Washing the Feet of the Apostles, detail. Canvas; full size, 6 ft., 10½ in. × 17 ft., 6 in. Madrid, Prado.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 80. *Above*: St. Mark Rescuing a Slave. Canvas, 13 ft., 7¼ in. × 17 ft., 9 in. Venice, Accademia. *Below*: The Visit of the Queen of Sheba to Solomon. Canvas, 4 ft., 11 in. × 7 ft., 9½ in. Greenville, S.C., Bob Jones University Art Gallery and Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

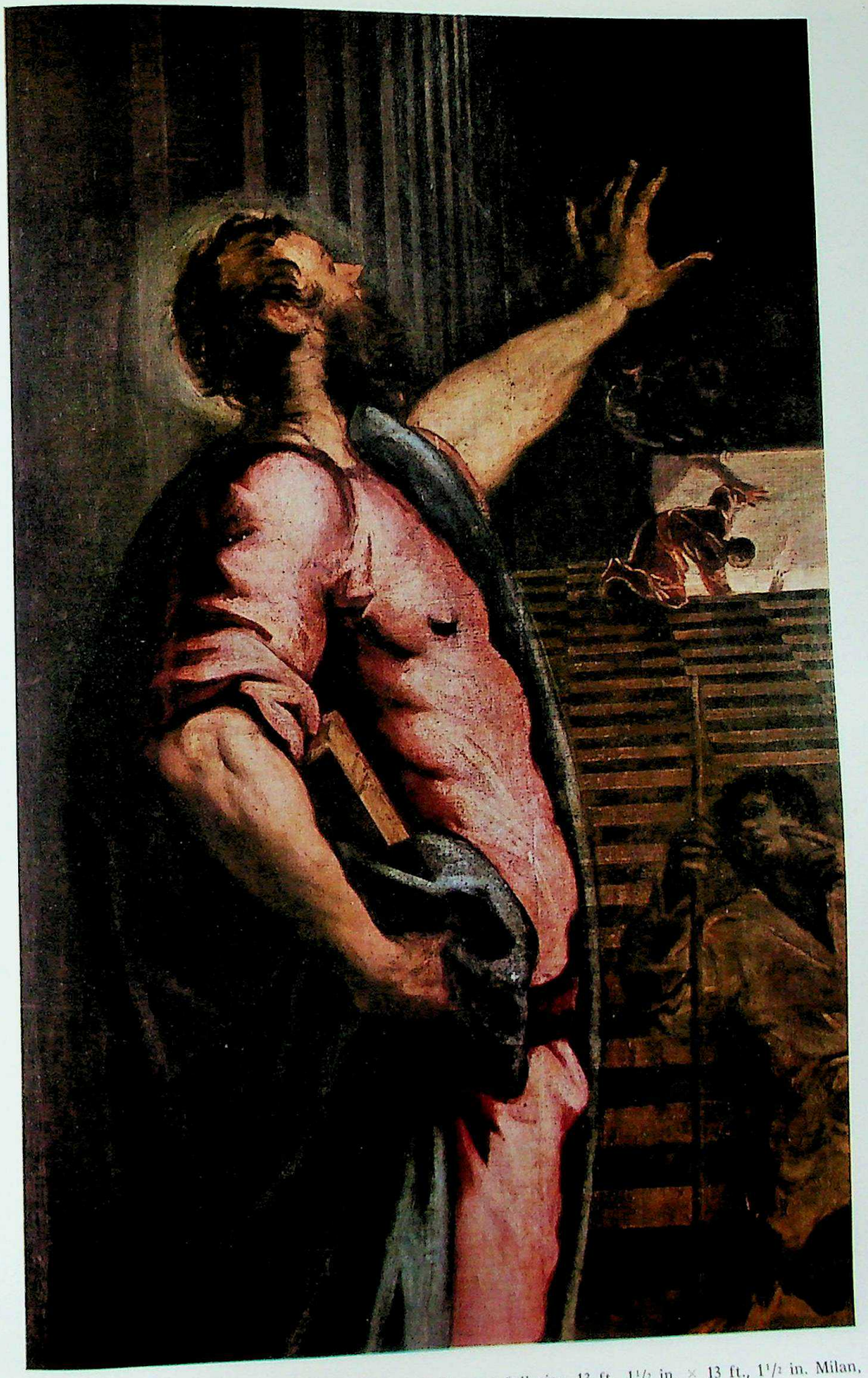


Pl. 81. *Above*: Joseph and Potiphar's Wife. Canvas, 21¼ × 46 in. Madrid, Prado. *Below*: The Last Supper. Canvas, 7 ft., 3 in. × 13 ft., 6½ in. Venice, S. Trovaso.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 82. The Evangelists St. Luke and St. Matthew. Canvas, 8 ft., 6 in. × 4 ft., 11 in. Venice, S. Maria del Giglio.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

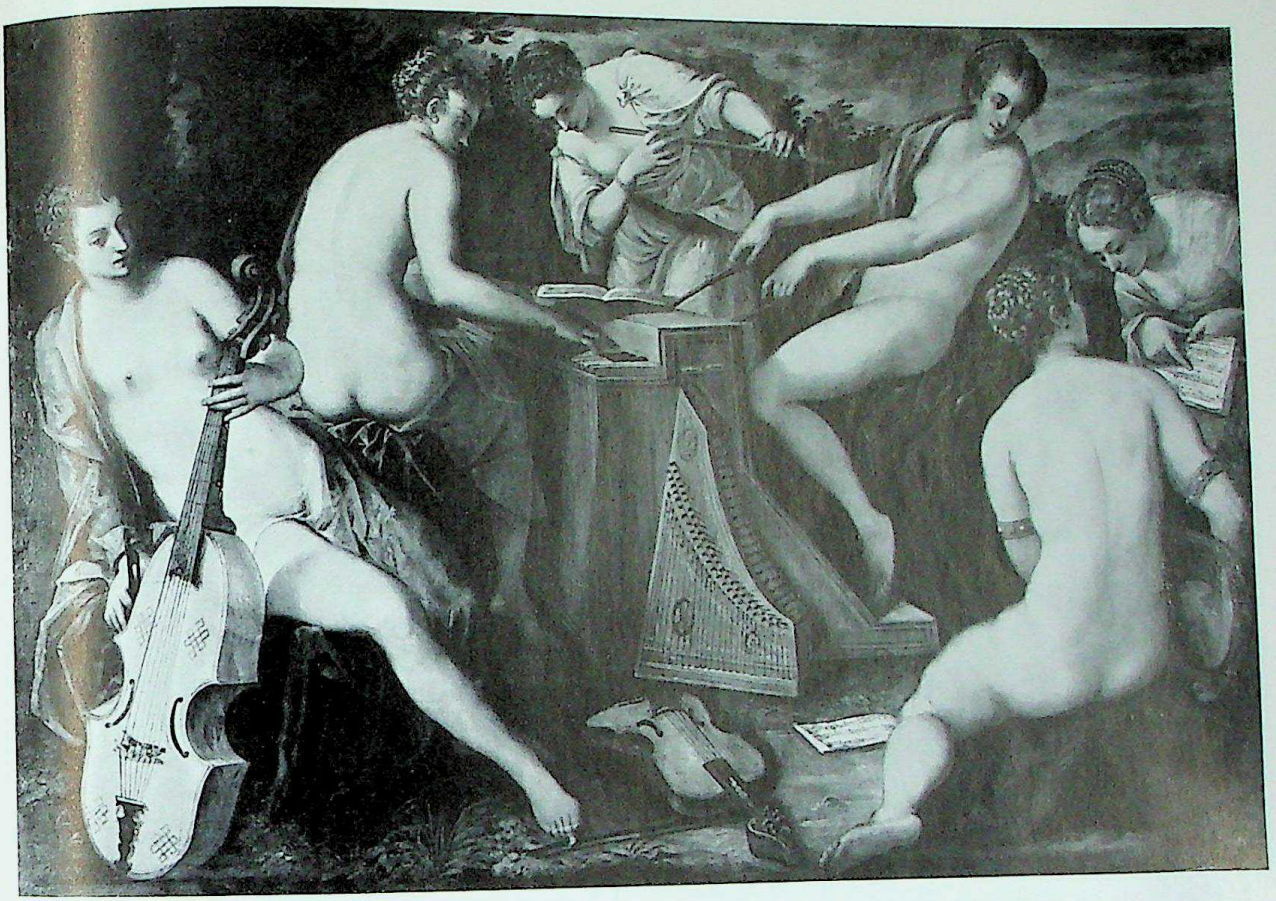


Pl. 83. The Finding of the Body of St. Mark, detail. Canvas; full size, 13 ft., 1½ in. × 13 ft., 1½ in. Milan, Brera.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 84. Christ in the House of Martha and Mary. Canvas, 6 ft., 5¾ in. × 4 ft., 3½ in. Munich, Alte Pinakothek.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 85. *Above*: Allegory of Music. Canvas, 4 ft., 8 in. × 7 ft., 1/4 in. Dresden, Gemäldegalerie. *Below*: Battle on Land and Sea ("The Rape of Helen"). Canvas, 6 ft., 1 1/4 in. × 10 ft., 1 in. Madrid, Prado.

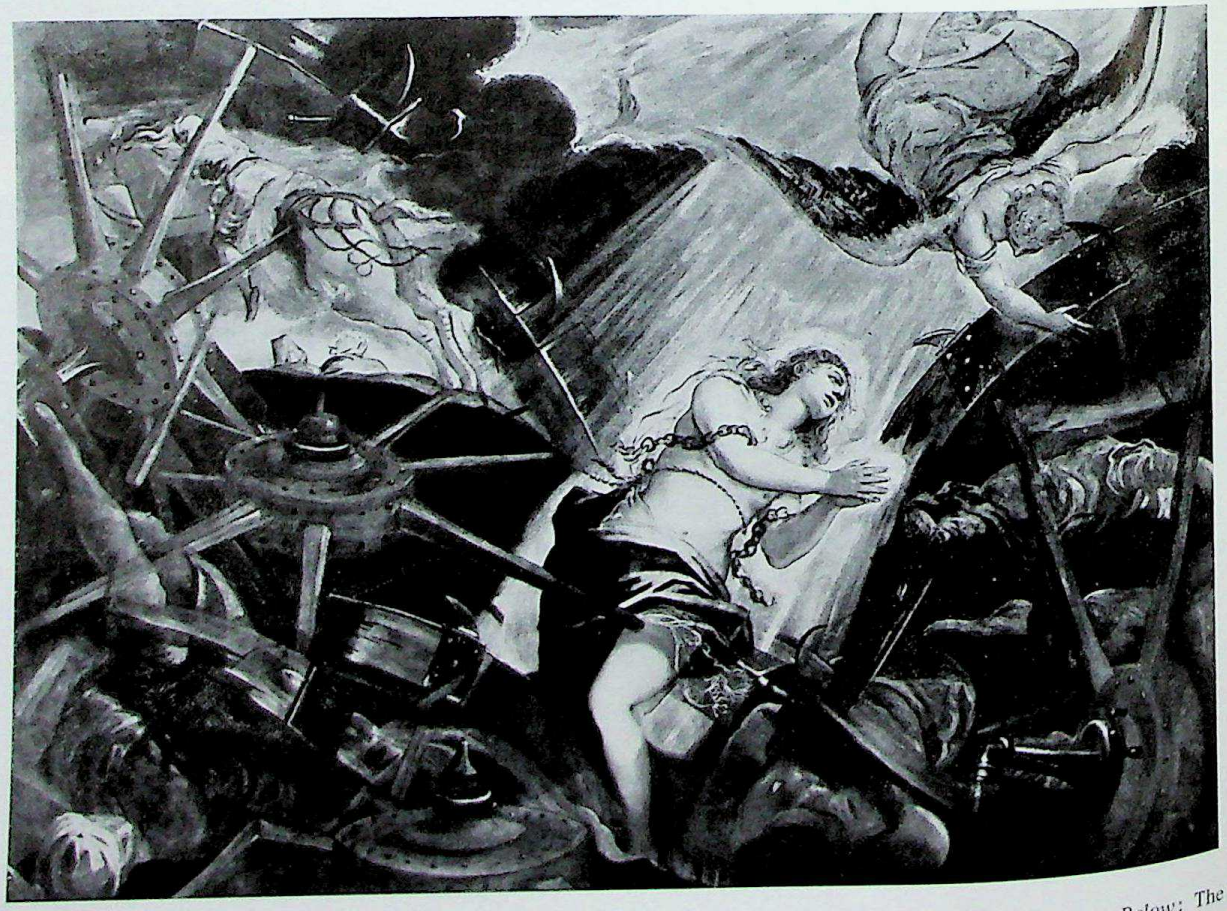
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 86. The Crucifixion. Canvas, 17 ft., 7 in. × 40 ft., 2 in. Venice, Scuola di S. Rocco.

Pl. 87. *Left*: The Ascension. Canvas, 17 ft., 8 in. × 10 ft., 8 in. *Right*: The Nativity. Canvas, 17 ft., 9¼ in. × 14 ft., 11 in. Both, Venice, Scuola di S. Rocco.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 88. *Above*: The Flight into Egypt. Canvas, 13 ft., 10 in. × 19 ft., 1/4 in. Venice, Scuola di S. Rocco. *Below*: The Martyrdom of St. Catherine. Canvas, 5 ft., 3 in. × 8 ft. Venice, S. Caterina.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 89. *Above*: The Madonna and Child with SS. Anthony and Roch. Canvas, 3 ft., 1/4 in. × 4 ft., 4 1/2 in. Madrid, Prado. *Below*: St. Anthony of Padua granting speech to an infant. Fresco. Padua, Scuola di S. Antonio.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 90. Left: Flora. Canvas, 31 1/8 × 24 7/8 in. Florence, Uffizi. *Right*: Man in a Red Cap. Canvas, 31 1/8 × 26 1/4 in. New York, Frick Coll.

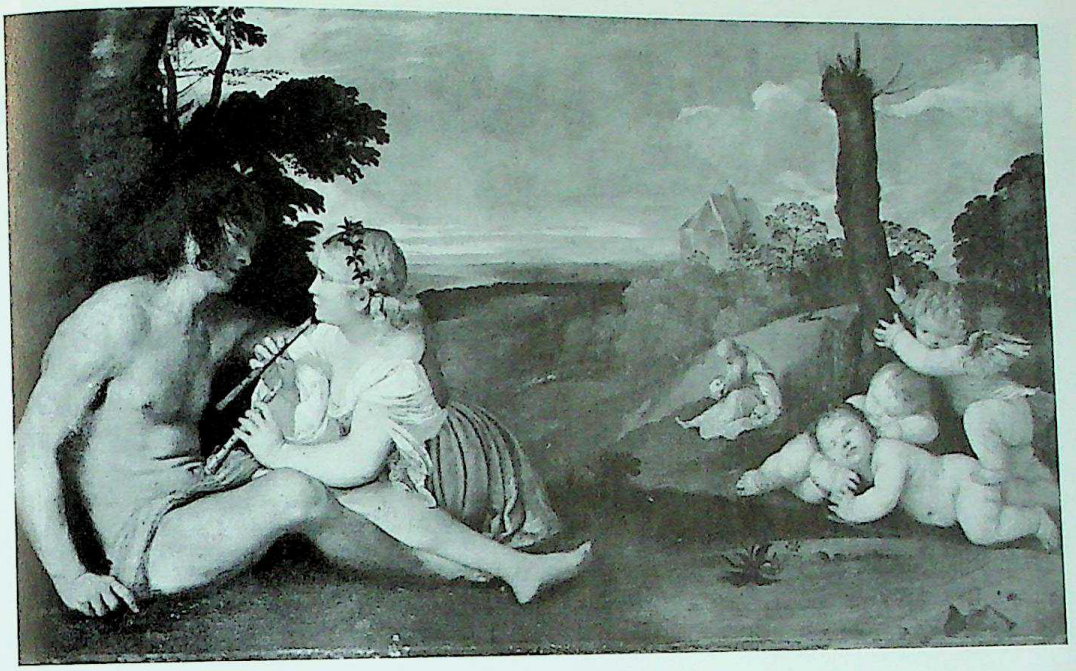
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 91. The Entombment. Canvas, 4 ft., 10¼ in. × 7 ft., ½ in. Paris, Louvre.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 92. Pope Paul III. Canvas, 41 3/4 × 33 1/2 in. Naples, Museo di Capodimonte.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 93. *Above*: The Three Ages of Man. Canvas, 3 ft., 5¾ in. × 6 ft. Edinburgh, National Gallery of Scotland (property of the Duke of Sutherland). *Below*: Bacchanal. Canvas, 5 ft., 9 in. × 6 ft., 4 in. Madrid, Prado.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 94. *Above*: The Worship of Venus. Canvas, 5 ft., 7¾ in. × 5 ft., 9 in. Madrid, Prado. *Below*: Sacred and Profane Love (cf. VII, PL. 382). Canvas, 3 ft., 10½ in. × 9 ft., 2 in. Rome, Galleria Borghese.

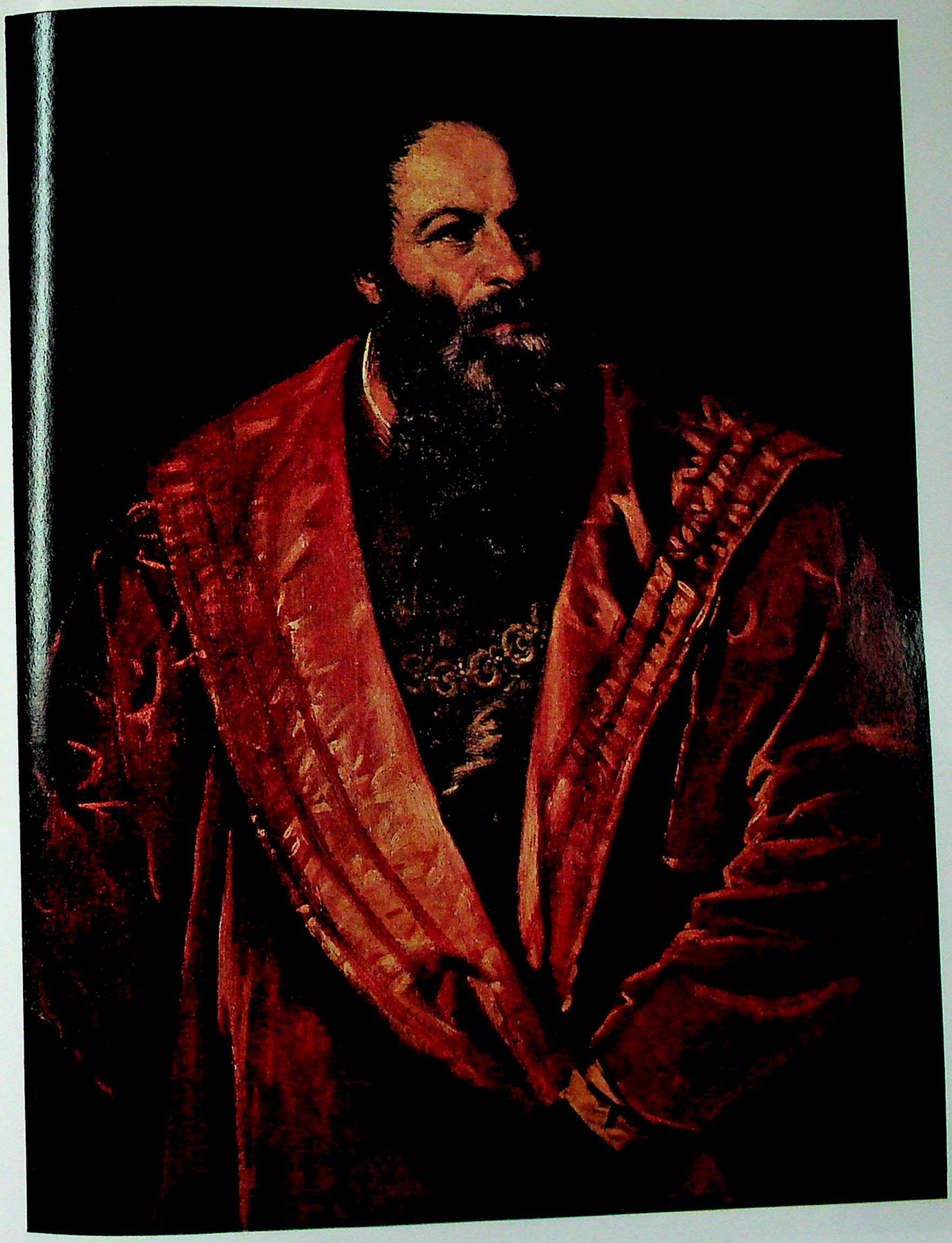
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 95. Polyptych with the Resurrection, Angel and Virgin of the Annunciation (*left and right, above*), SS. Nazarus and Celsus and the donor Altobello Averoldo (*left, below*), and St. Sebastian. Panel, 9 ft., 1½ in. Brescia, SS. Nazaro e Celso.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

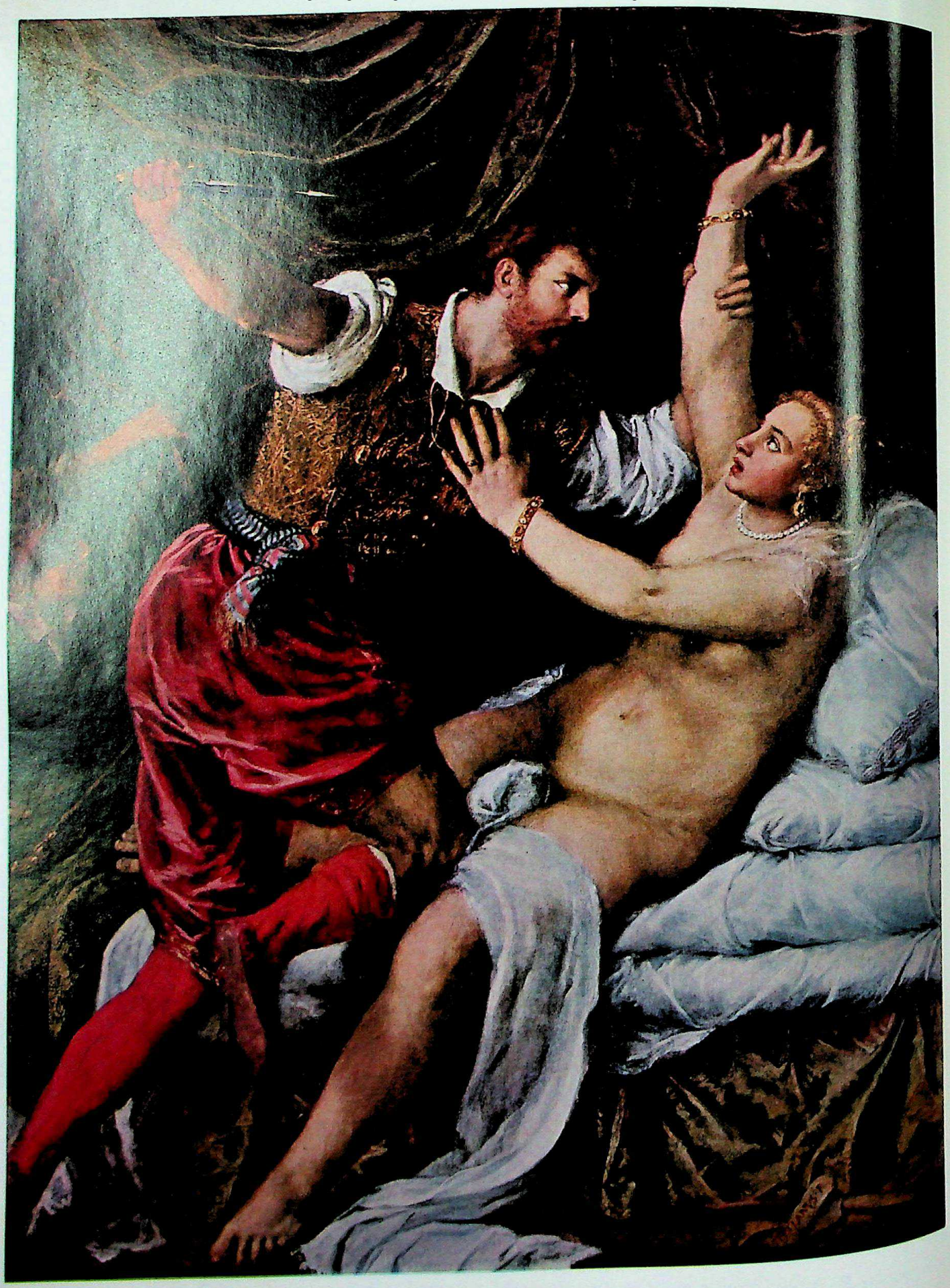
Pl. 96. The Pesaro Madonna. Canvas, 15 ft., 8¼ in. × 8 ft., 9½ in. Venice, S. Maria Gloriosa dei Frari.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



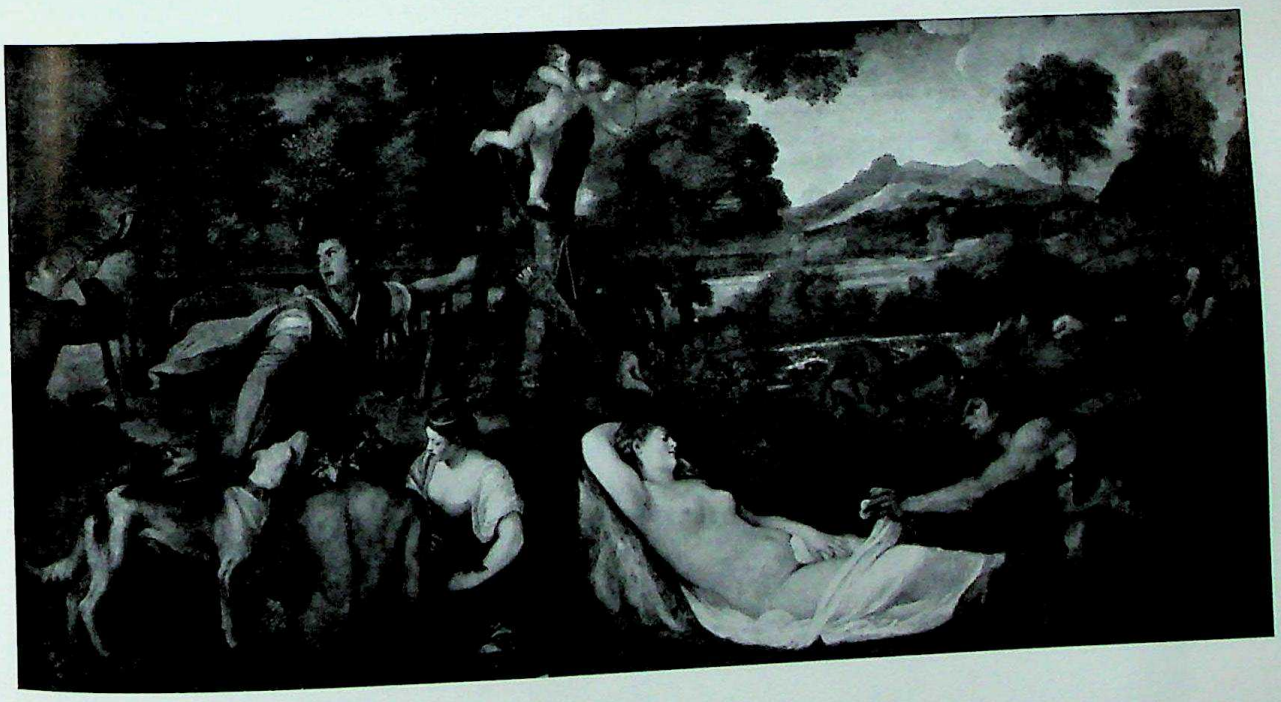
Pl. 97. Pietro Aretino. Canvas, $38^{5}/_{8} \times 30^{3}/_{4}$ in. Florence, Pitti.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



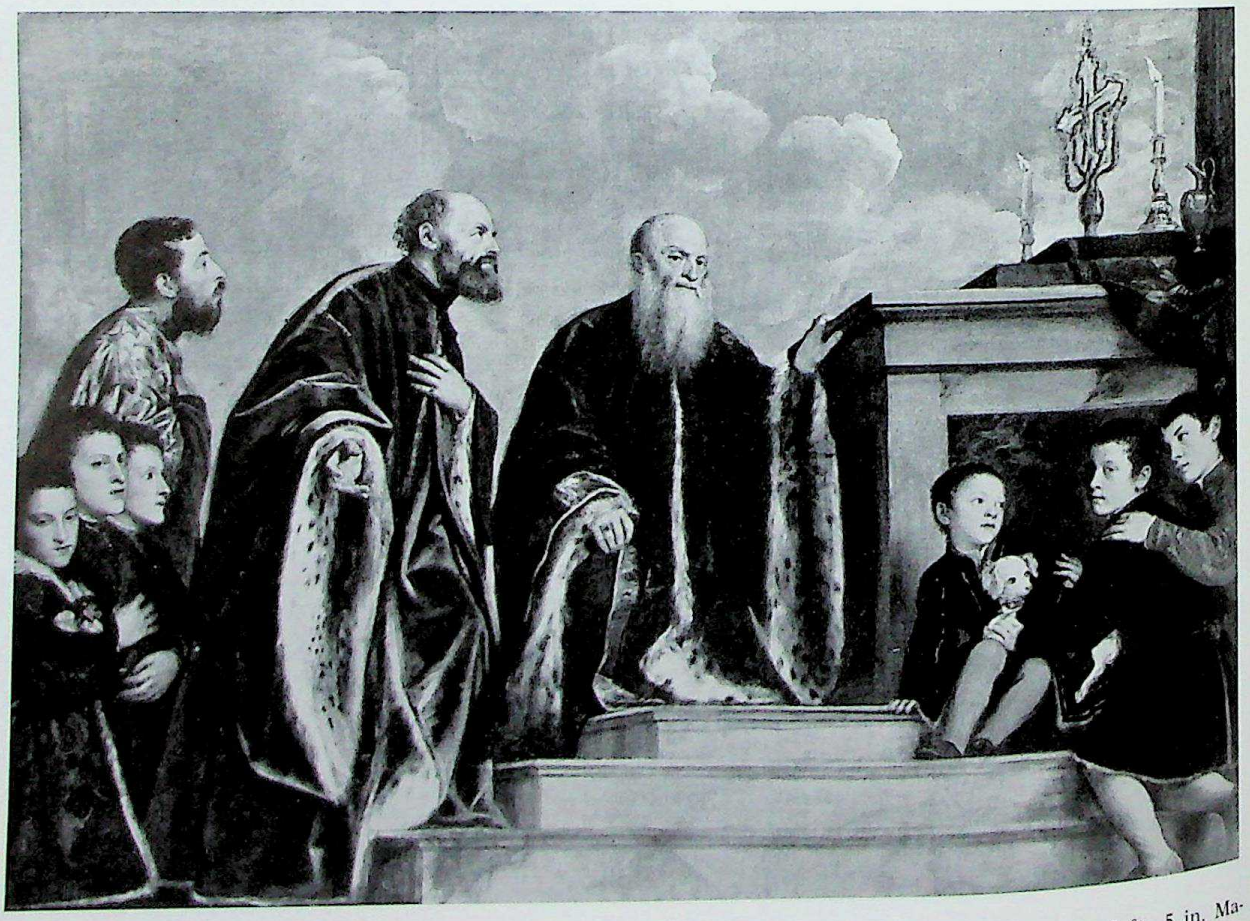
Pl. 98. Tarquin and Lucretia. Canvas, 6 ft., 2½ in. × 4 ft., 9¼ in. Cambridge, England, Fitzwilliam Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



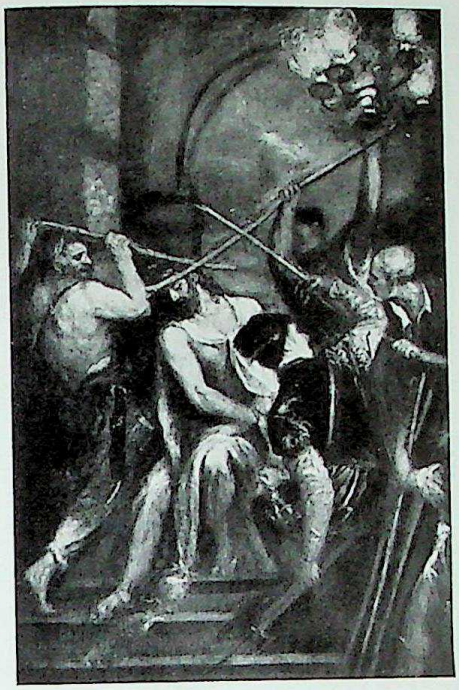
Pl. 99. *Above*: The Presentation of the Virgin in the Temple. Canvas, 11 ft. × 25 ft., 5 in. Venice, Accademia. *Below*: Jupiter and Antiope, known as the "Vénus du Pardo." Canvas, 6 ft., 5 in. × 12 ft., 7½ in. Paris, Louvre.

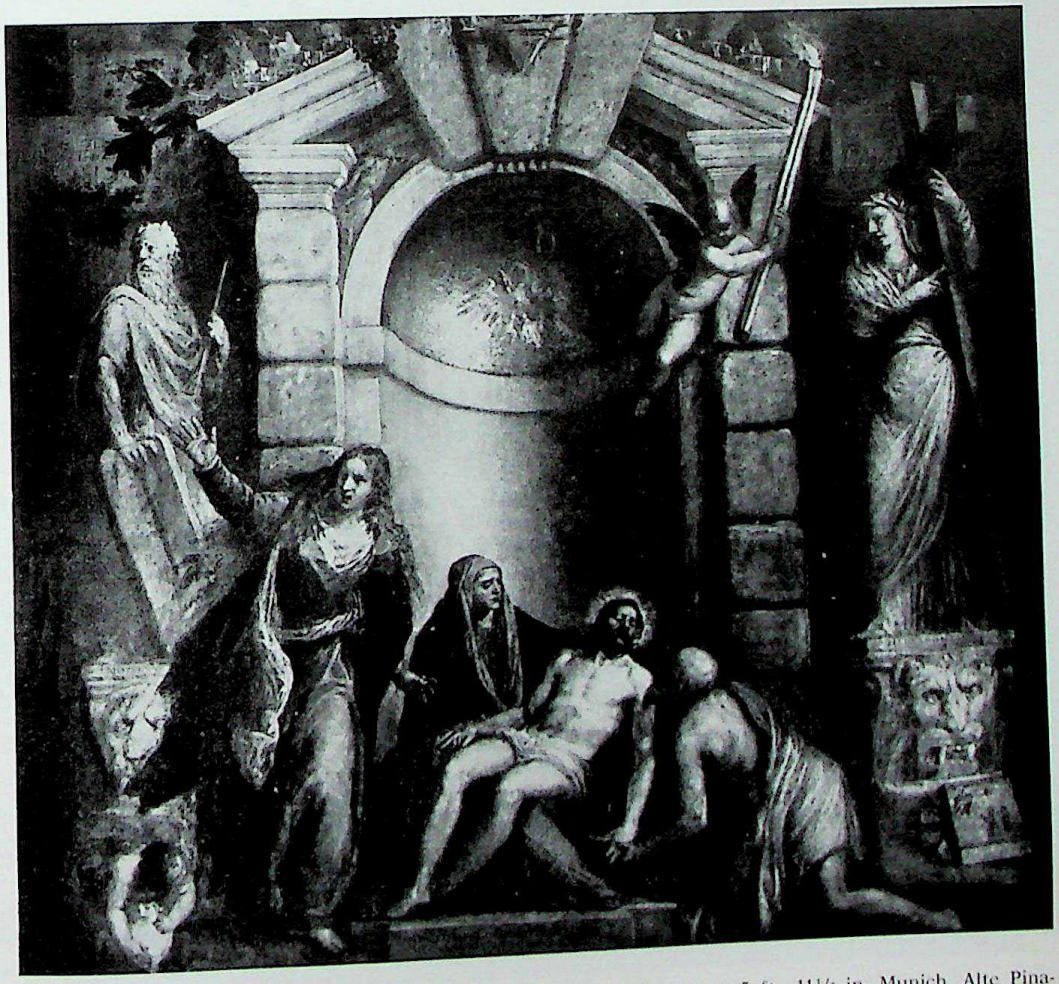
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 100 *Above, left*: The Allocution of Alfonso d'Avalos, Marqués del Vasto. Canvas, 7 ft., 3¾ in. × 5 ft., 5 in. Madrid, Prado. *Right*: The Duke of Atri. Canvas, 7 ft., 7¼ in. × 4 ft., 11½ in. Kassel, Germany, Staatliche Kunstsammlungen. *Below*: The Vendramin Family. Canvas, 6 ft., 9 in. × 9 ft., 10½ in. London, National Gallery.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 101. *Above, left*: The Crowning with Thorns. Canvas, 9 ft., 2¼ in. × 5 ft., 11½ in. Munich, Alte Pinakothek. *Right*: Tarquin and Lucretia. Canvas, 44⅞ × 39⅛ in. Vienna, Akademie der Bildenden Künste. *Below*: Pietà. Canvas, 11 ft., 7 in. × 11 ft., 5 in. Venice, Accademia.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 102. *Above*: The Rape of Europa. Canvas, 5 ft., 10 in. × 6 ft., 8½ in. Boston, Isabella Stewart Gardner Museum. *Below*: Shepherd and Nymph. Canvas, 4 ft., 11 in. × 6 ft., 1½ in. Vienna, Kunsthistorisches Museum.

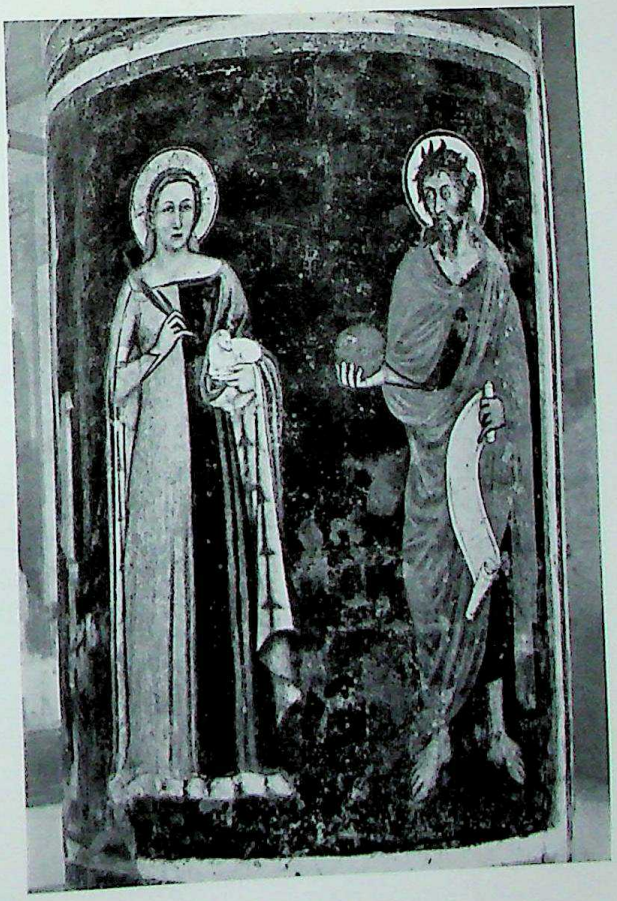
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 103. Madonna and Child. Canvas, 29 1/4 × 24 7/8 in. London, National Gallery.

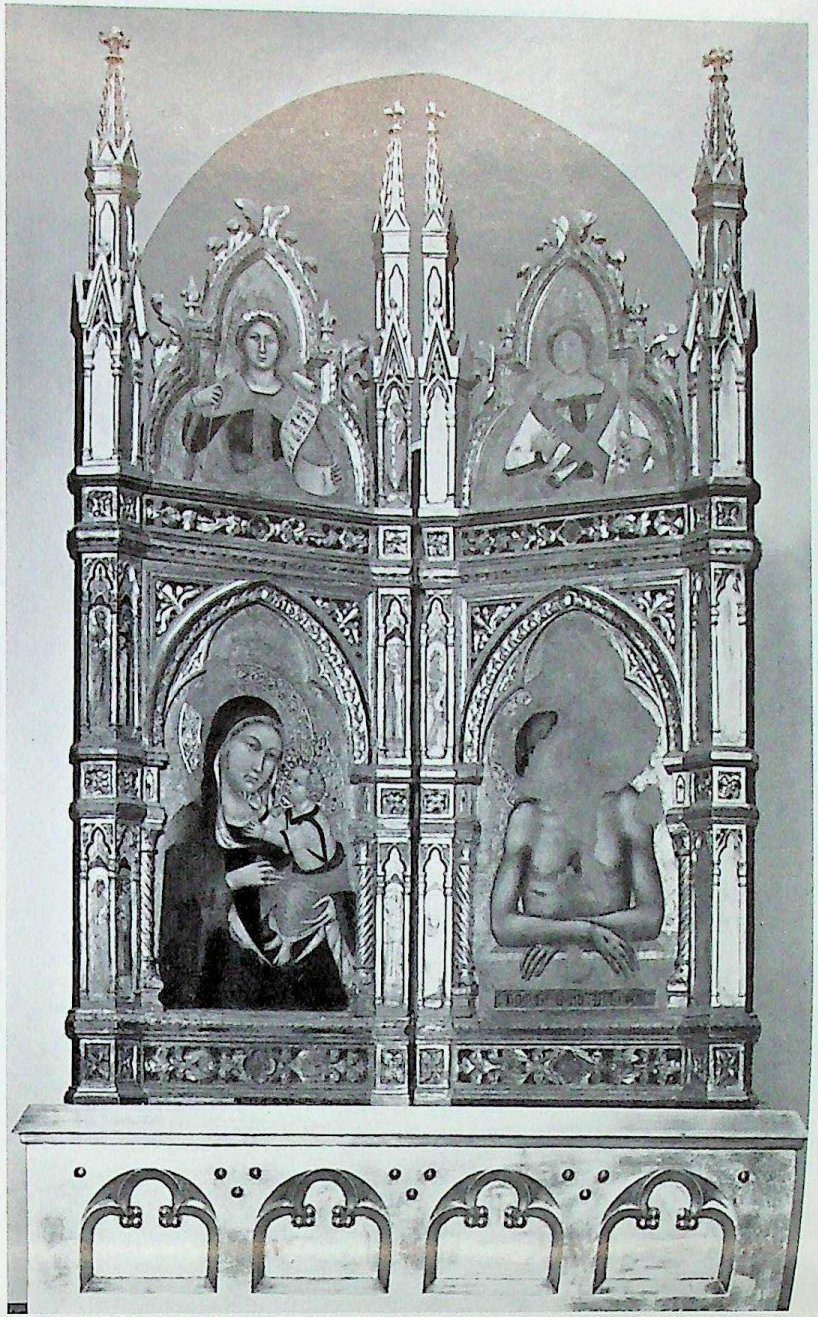
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 104. St. Romuald. Fresco. Treviso, Italy, S. Nicolò.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 105. *Above*: Saints and Doctors of the Dominican Order, detail. Fresco. Treviso, Italy, Seminario Vescovile. *Below, left*: St. Jerome. Fresco. *Right*: SS. Agnes and John the Baptist. Fresco. Last two, Treviso, S. Nicolò.



Pl. 106. *Left*: SS. James Major and Anthony of Padua. Panel, 17¼×9½ in. Verona, Museo di Castelvecchio. *Right*: The Madonna and Child, Man of Sorrows, and angels, diptych. Panel, 5 ft., 3½ in. × 3 ft., 5 in. Karlštejn (Karlův Týn), Czechoslovakia, Castle.

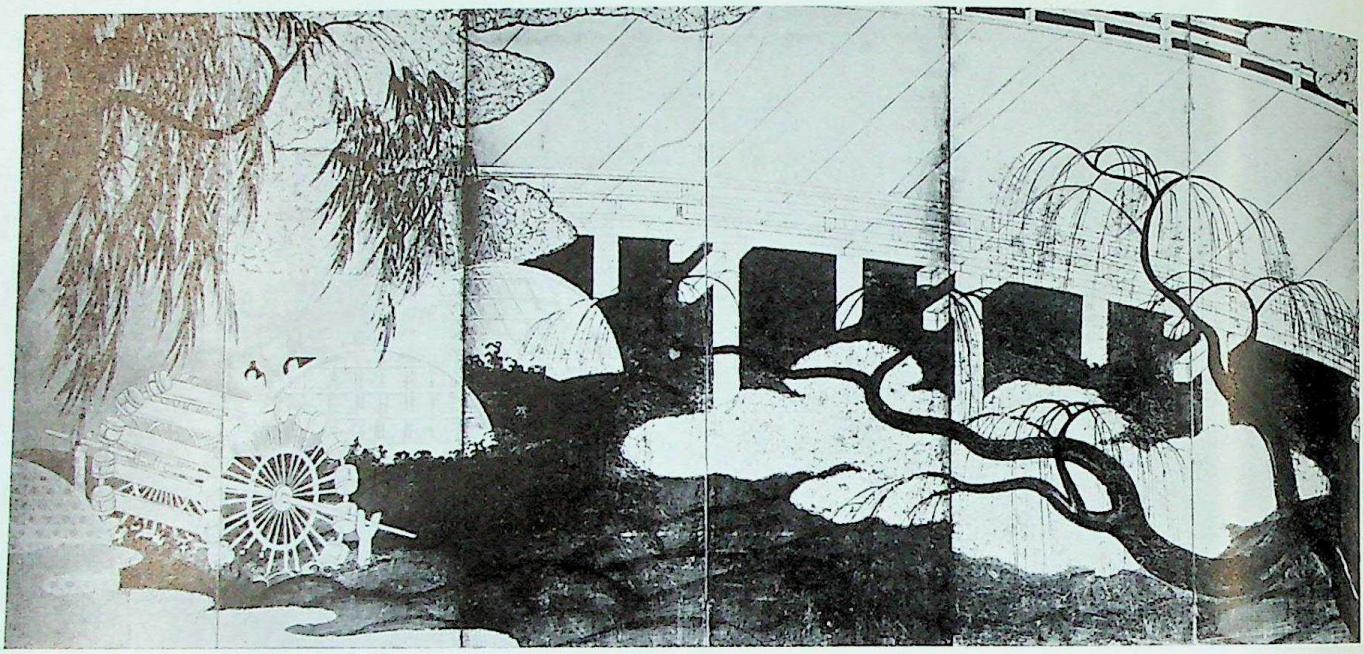
TOMMASO DA MODENA

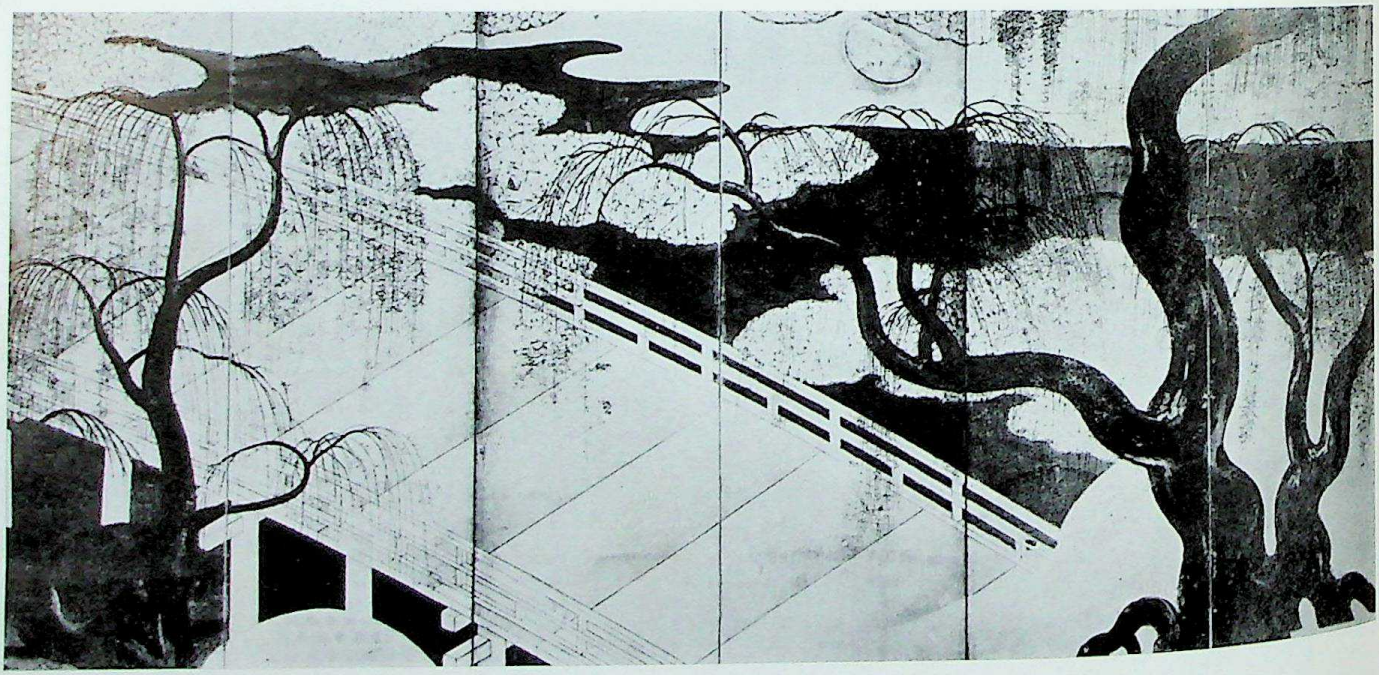
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 107. *Left*: The Meeting of St. Ursula and the Pope, detail of the legend of St. Ursula, from S. Margherita, Treviso, Italy. Fresco. Treviso, Museo Civico. *Right*: The Decapitation of Jonh the Baptist. Fresco. Trent, Cathedral.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 108. Willow Trees at Uji Bridge, a pair of sixfold screens by an unknown artist of the Kanō school, 16th cent., after a design attributed to Tosa Hirochika, mid-15th cent. Each screen, 5 ft., 1 in. × 10 ft., 9 in. Kyoto, National Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 109. Tosa Mitsuyoshi, illustration for *Gengi Monogatari* (the Tale of Genji), probably 1600, one of 54 sheets. Color on gilded paper, 10 1/8 × 9 in. Kyoto, National Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 110. Tosa Mitsuoki (1617-91), Quail and Chrysanthemums. Color on silk, 13×21 in. Tokyo, National Museum.

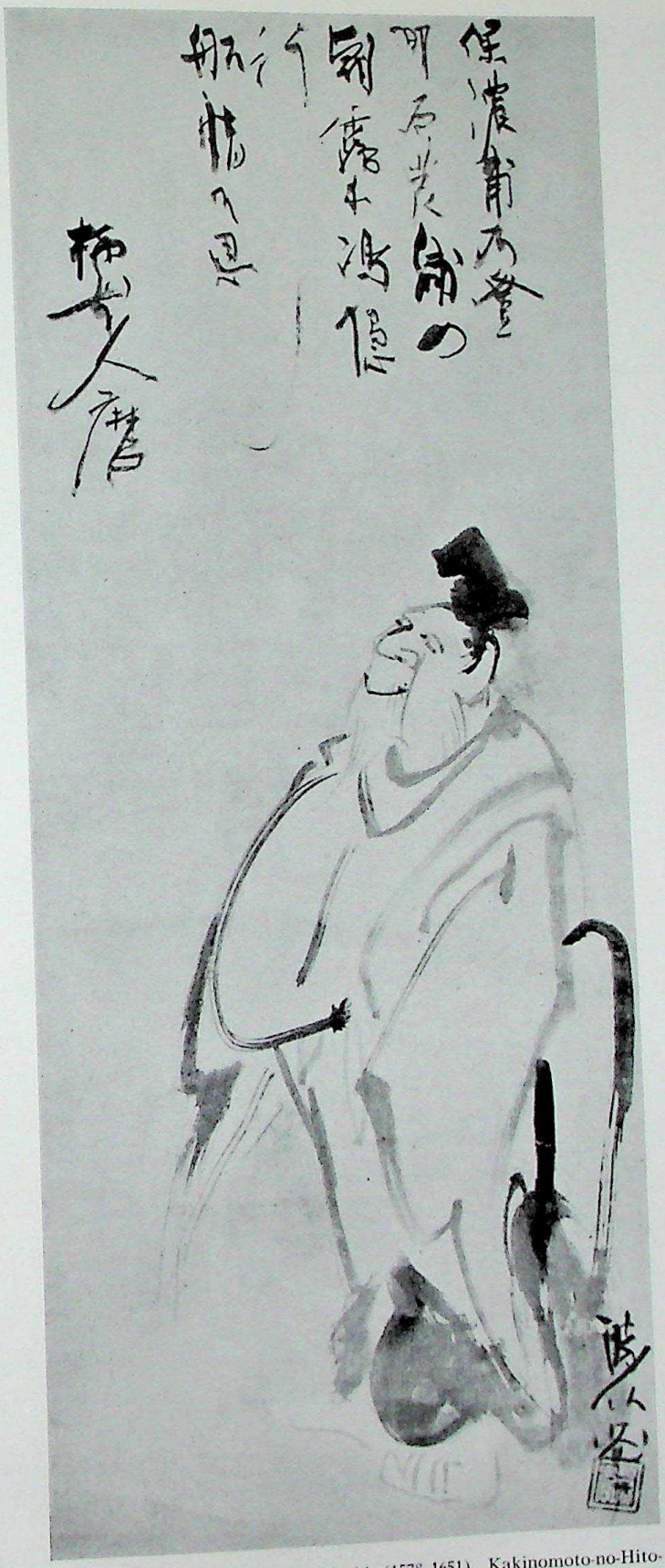
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 111. Tosa Mitsunobu, Jūō-zu, 1489, copy of the Jūō-zu in the Nisonin, Kyoto, mid-14th cent. Ink and color on silk, 38 1/8 × 16 1/2 in. Kyoto, Tōfukuji (on loan to National Museum, Tokyo).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

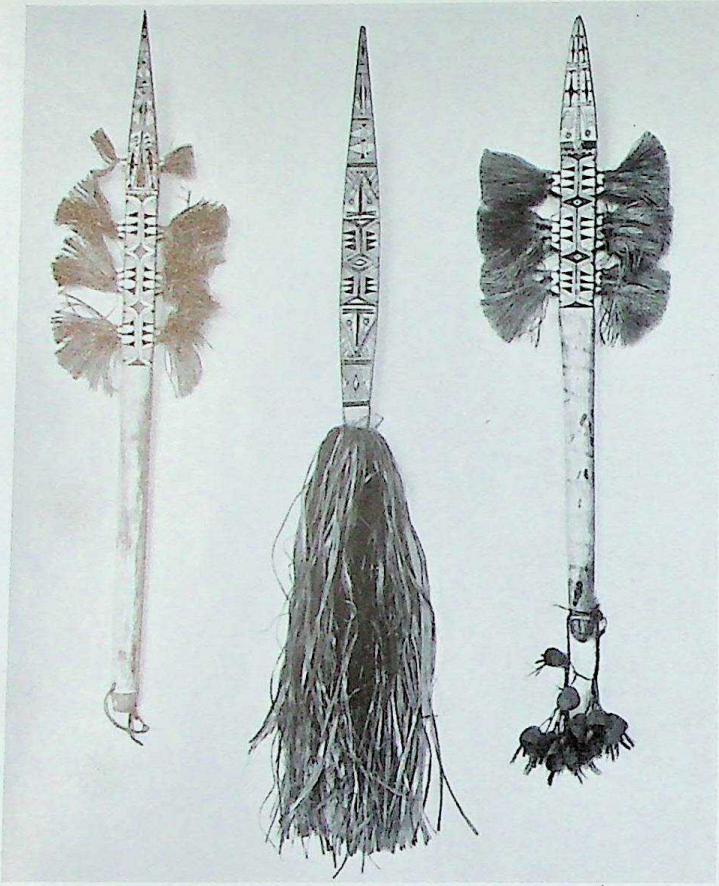
Pl. 112. Tosa Mitsumochi, Kuwanomidera Engi (History of the Kuwanomi Temple), detail, 1532. Color on paper, ht., 13¼ in. Kuwanomidera, Shiga prefecture, Japan.

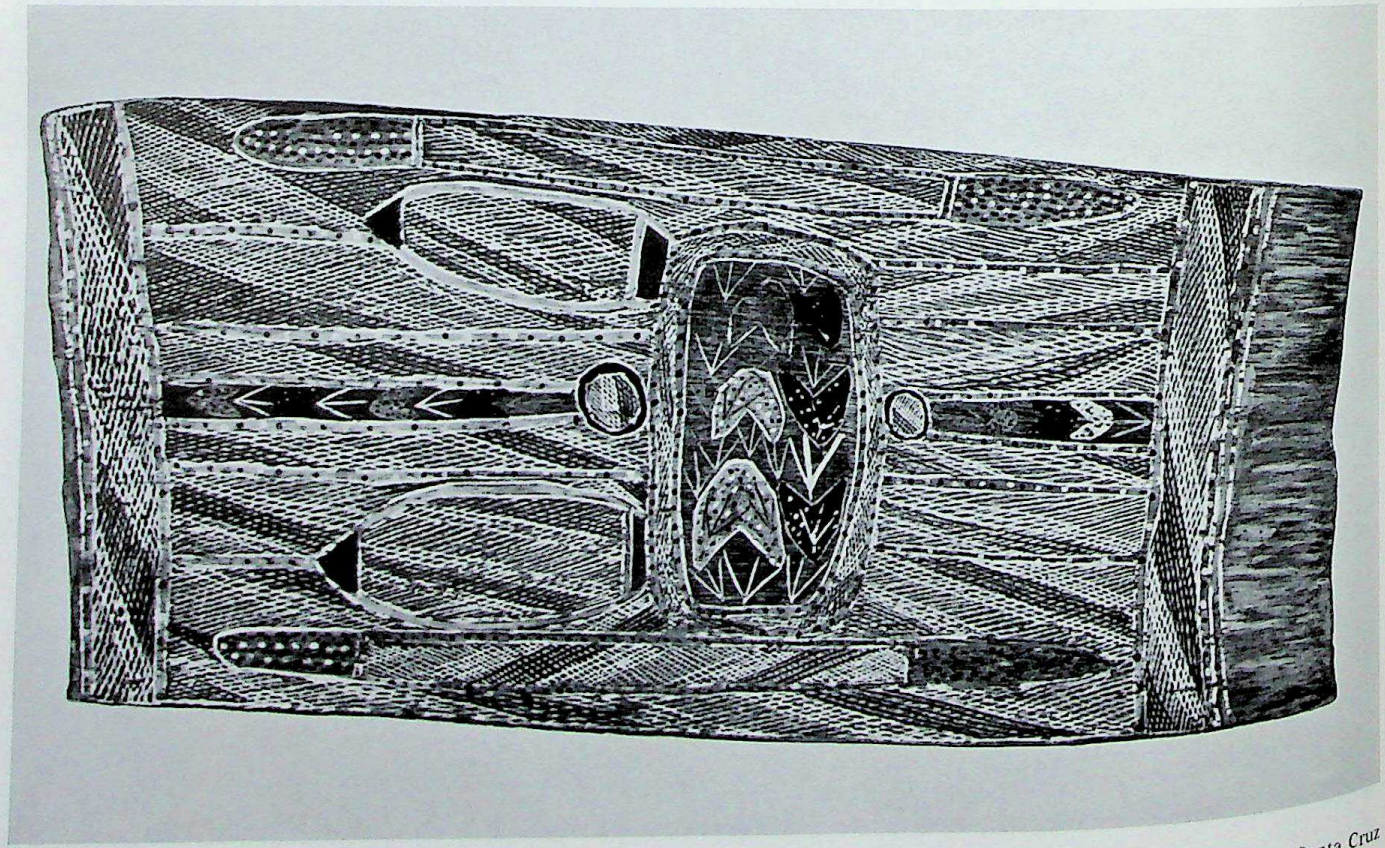
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 113. Iwasa Matabei Katsumochi (1578–1651), Kakinomoto-no-Hitomaro (the 7th-century poet) and His Poem. Ink on paper, $36^{7}/_{8} \times 13^{3}/_{4}$ in. Atami, Japan, Art Museum.

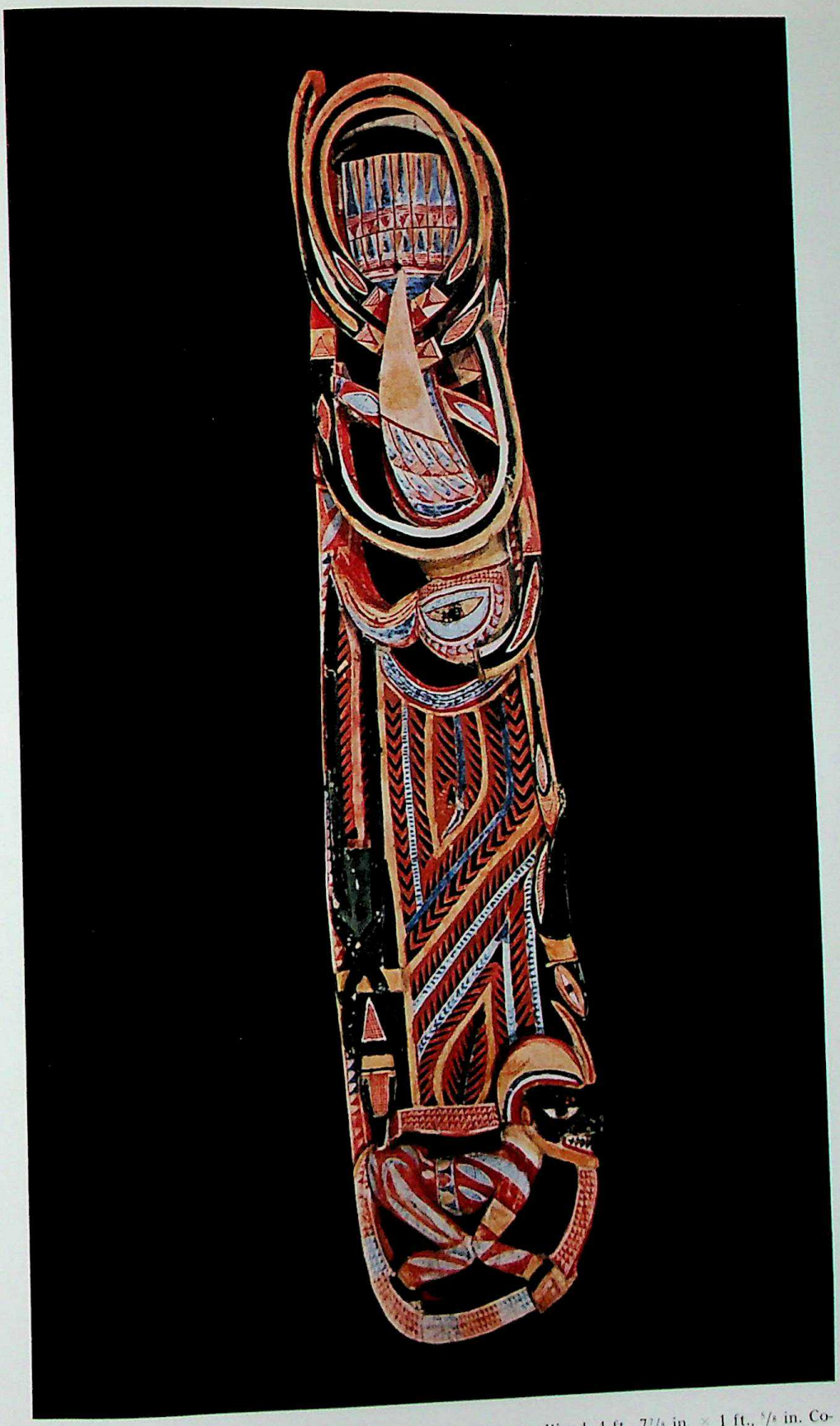
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





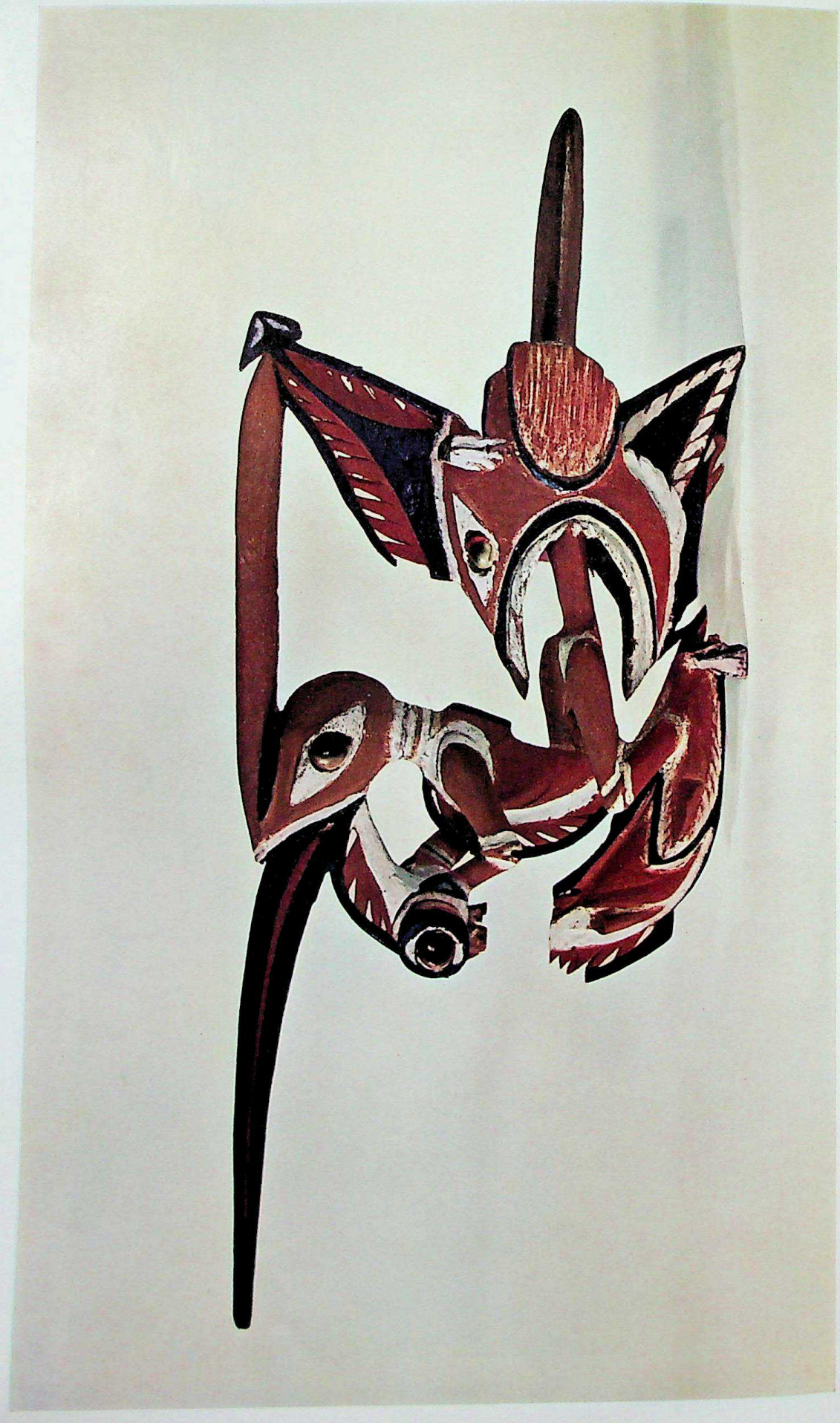
Pl. 114. Objects possibly referable to the totemic complex. *Above, left*: Dance clubs representing a bird's beak, from the Santa Cruz Islands, 1912. Carved and painted wood with fiber, l., ca. 41 in. Basel, Museum für Völkerkunde. *Right*: Bull-roarer, from the Solomon Islands. Wood, l., 31½ in. Paris, Musée de l'Homme. *Below*: Mythical painting on bark, with water-lily leaves, breasts, bird tracks, and two water holes, from Arnhemland, Australia, ca. 1950. W., 27½ in. London, British Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



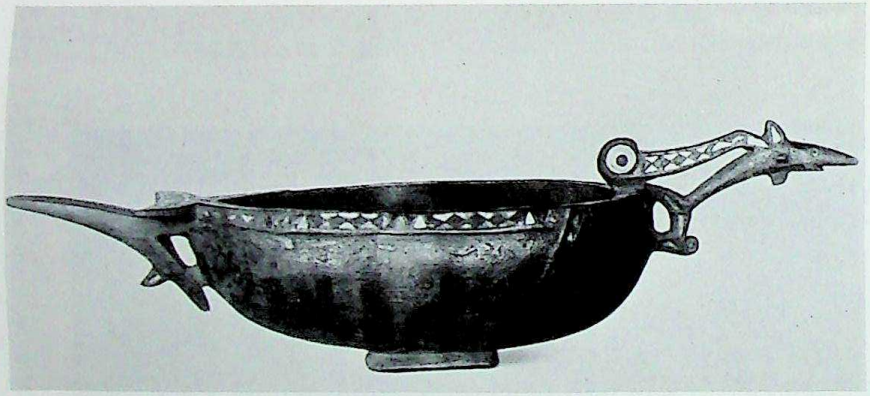
Pl. 115. *Malanggan* carving, from New Ireland, mid-19th cent. Wood, 4 ft., 7 7/8 in. × 1 ft., 5/8 in. Cologne, Rautenstrauch-Joest-Museum für Völkerkunde.

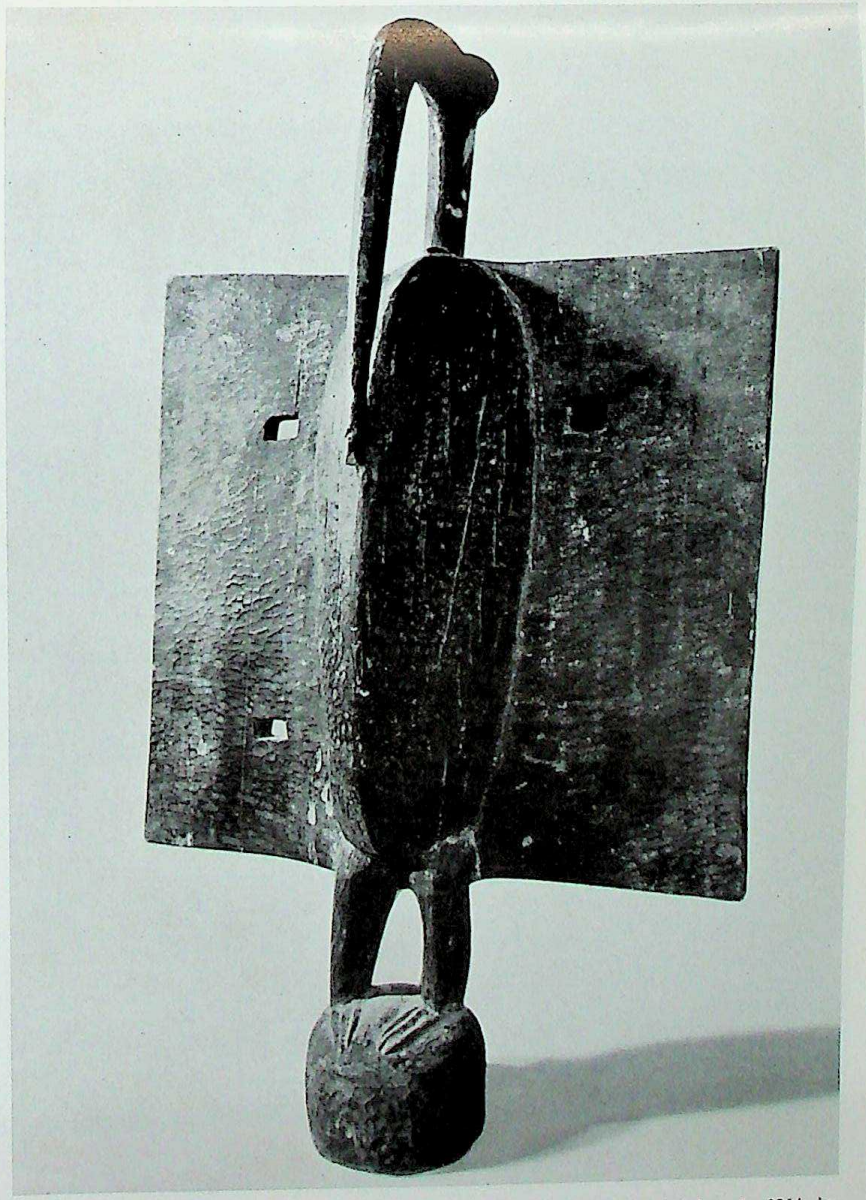
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 16. Malanggan carving with fish swallowing man, from New Ireland. Wood, ht., 8 in. London, British Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 117. Objects possibly referable to the totemic complex. *Left, above*: Bird-fish bowl, from San Cristobal, Solomon Islands, 1929. Wood with mother-of-pearl inlay, l., 32 5/8 in. Basel, Museum für Völkerkunde. *Below*: Leopard, from Benin, Nigeria. Bronze, ht., ca. 11 in. London, British Museum. *Right*: Senufo ritual carving representing a hornbill, from Mali. Wood. Rome, Museo Pigorini.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 118. Human figure with serpent carried pickaback, interpreted as an alter ego or a tutelary deity, from the Island of Zapatera, Nicaragua. Stone. Granada, Nicaragua, Colegio de Centroamérica.

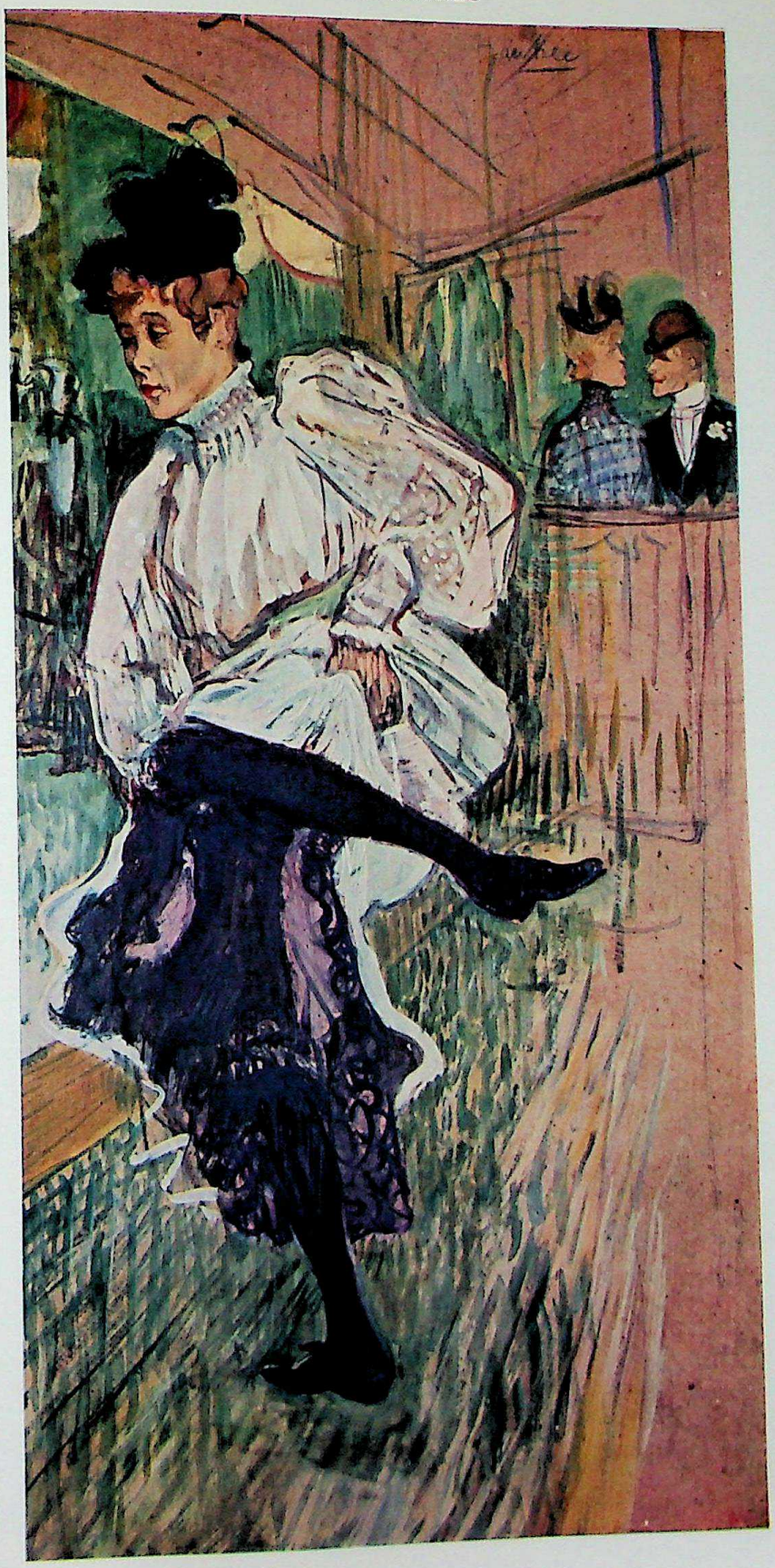
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 119. *Above*: Count Alphonse de Toulouse-Lautrec Driving His Mail Coach to Nice. Canvas, 15¹/₄×20¹/₈ in. Paris, Musée du Petit Palais. *Below*: La danse de la Goulue (Les Almées). Canvas, 9 ft., 4¹/₄ in. × 10 ft., 1 in. Paris, Louvre.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

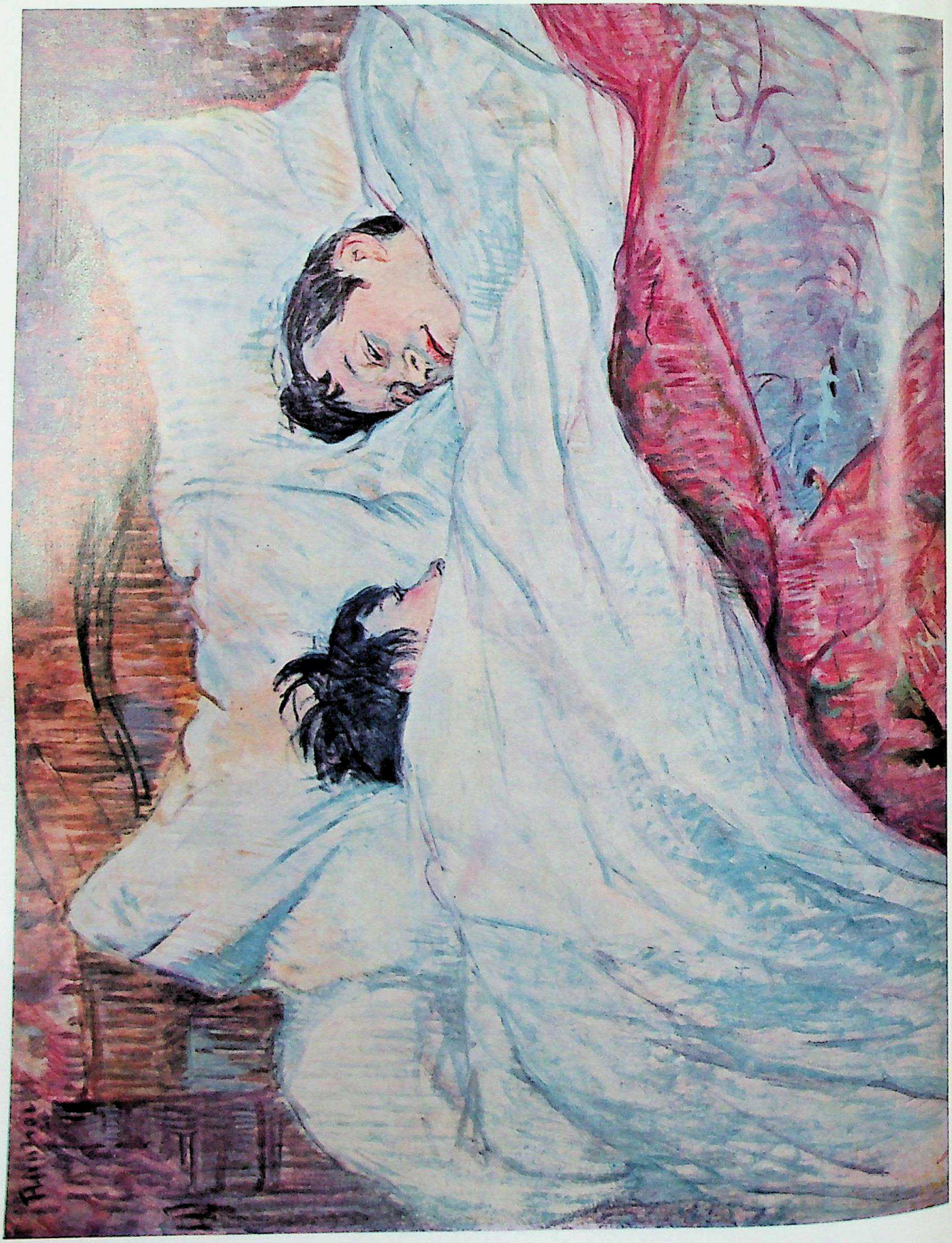
Pl. 120. Poster, La Goulue at the Moulin Rouge. Albi, France, Musée Toulouse-Lautrec.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 121. Jane Avril Dancing. Oil on cardboard, 33 5/8 × 17 3/4 in. Paris, Louvre.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 122. The Bed. Oil on cardboard, 21 1/4 × 27 1/4 in. Paris, Louvre.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 123. Au Salon de la rue des Moulins. Canvas, 3 ft., 8 in. × 4 ft., 4 in. Albi, France, Musée Toulouse-Lautrec.

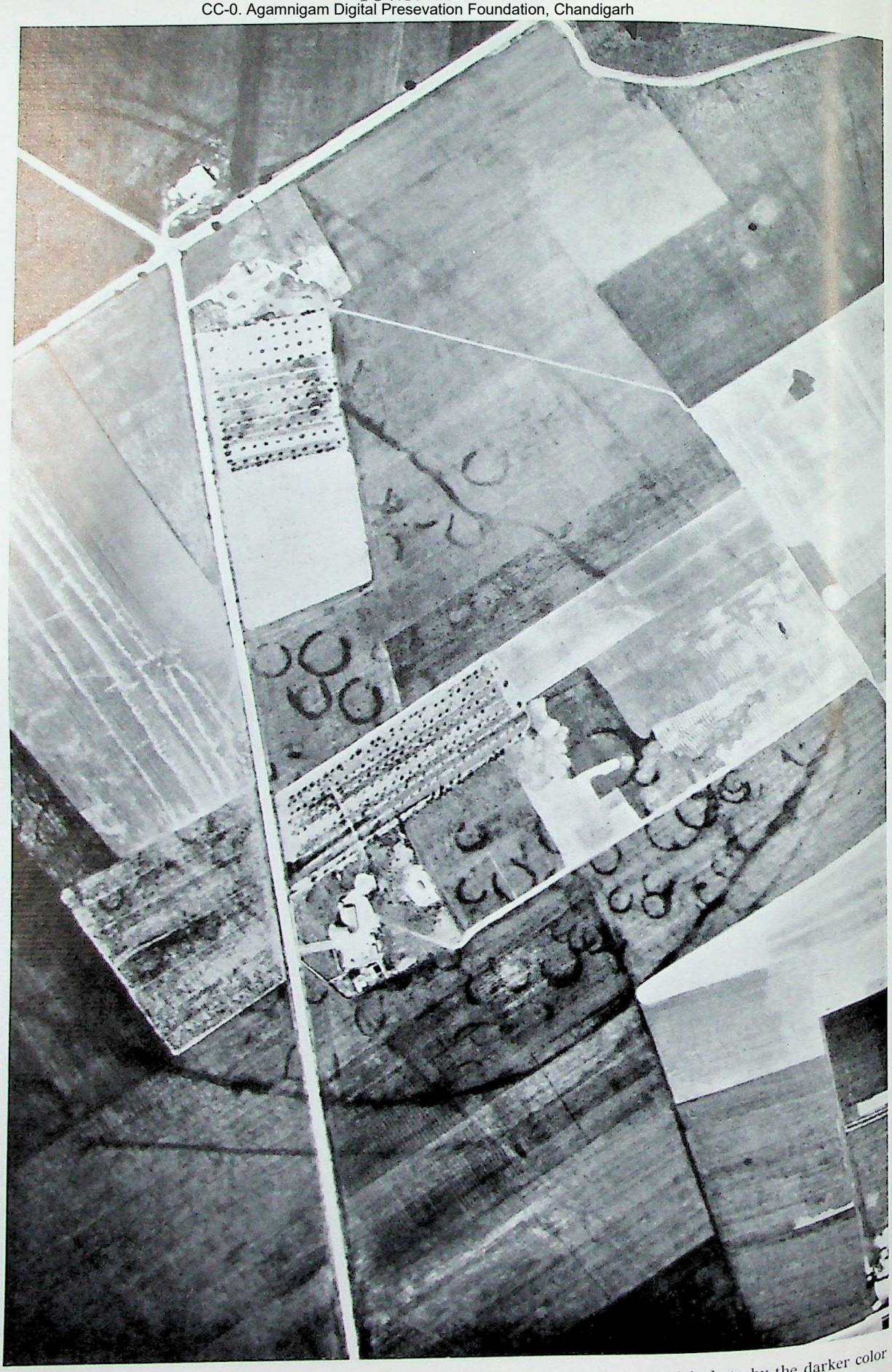
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 124. The English Girl of the "Star" at Le Havre. Panel, $16^{1}/_{8} \times 13$ in. Albi, France, Musée Toulouse-Lautrec.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

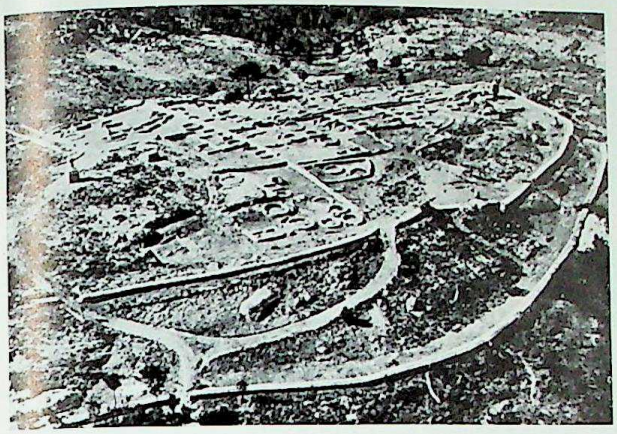
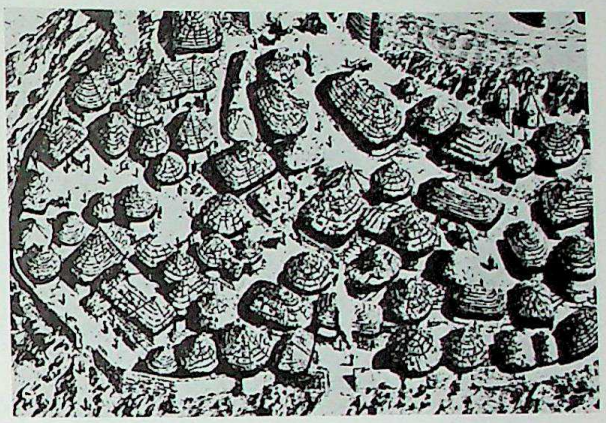
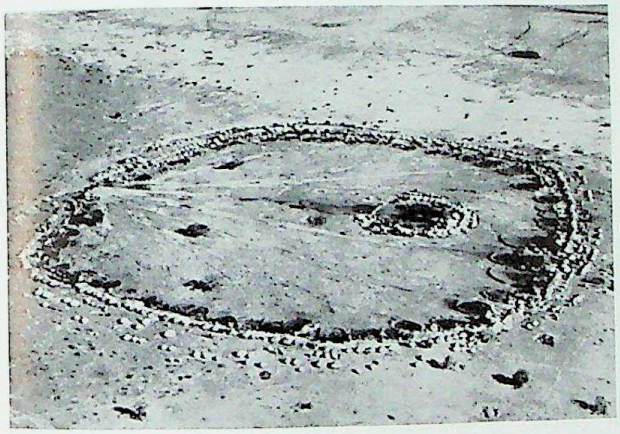
Pl. 125. Partial view of the New York metropolis, 1964, with over 8 million inhabitants, one of the world's greatest population agglomerations.

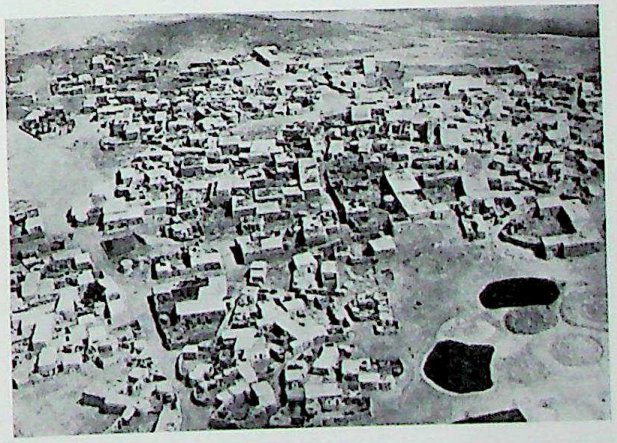
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 126. Province of Foggia, Apulia, Italy, site of a neolithic village revealed in an aerial photo by the darker color of the vegetation.

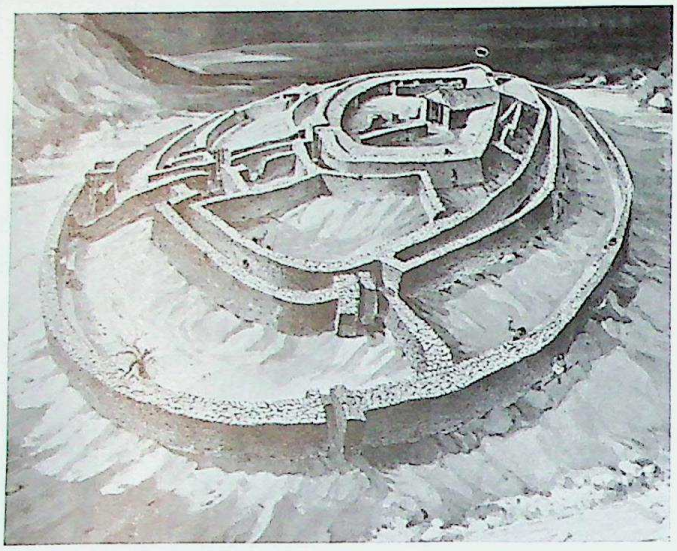
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

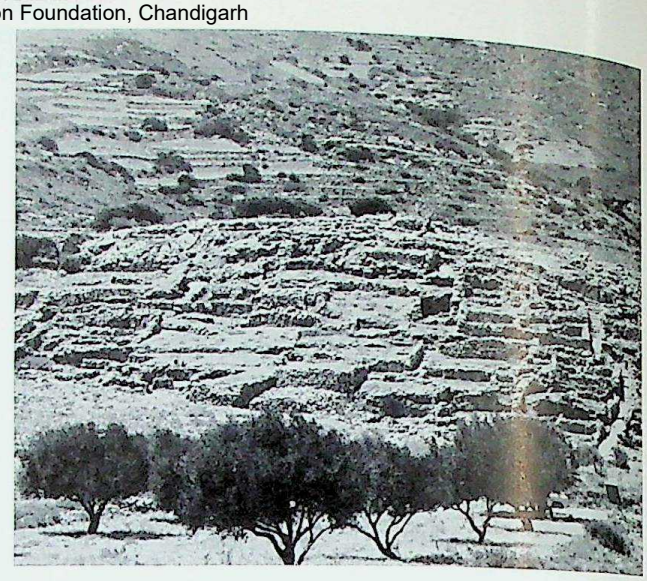




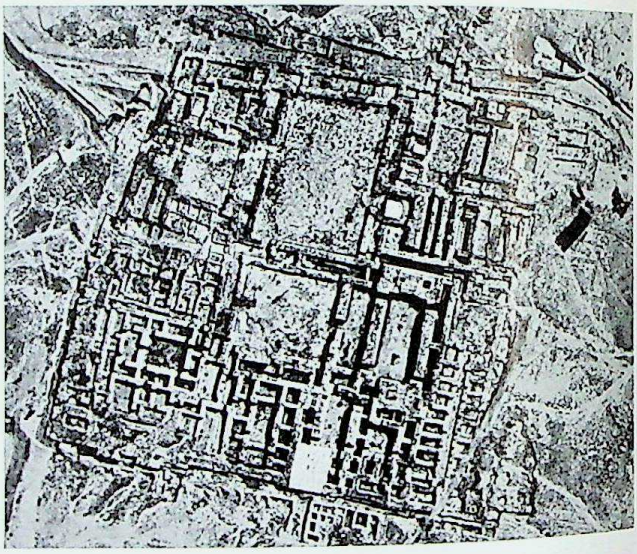


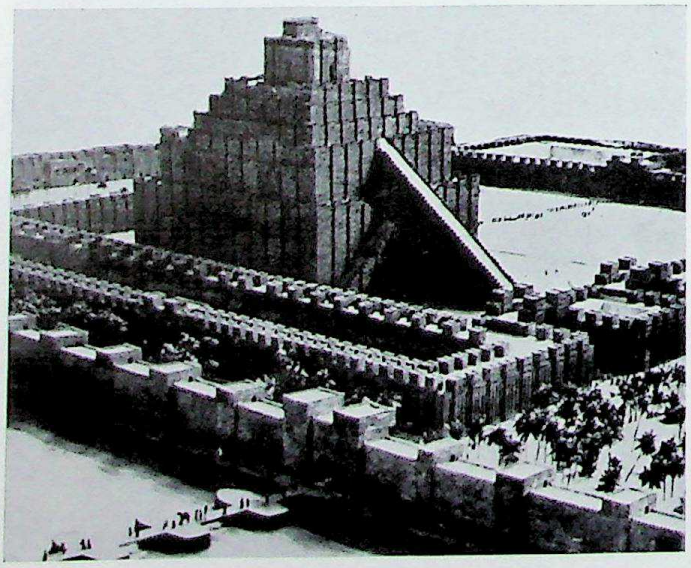
Pl. 127. Protohistoric and ethnological settlements. *Above, left*: Sanfins, near Paços de Ferreira, Portugal, ruins of the Iberian *citânia*. *Right*: Coaña, Asturias, Spain, reconstruction of the *castro*. *Center, left*: Northern Rhodesia, Baila circular village with chief's compound at center. *Right*: Cameroons, fortress village. *Below, left*: Brunei, Sabah, pile dwelling village. *Right*: Valley of Jezreel, Israel, clustered Arab village.

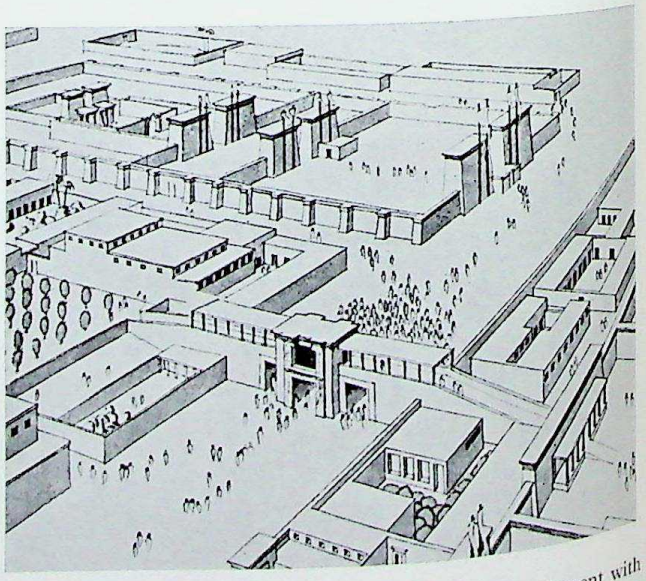
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





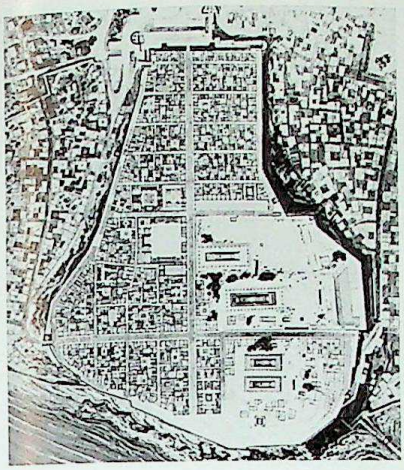


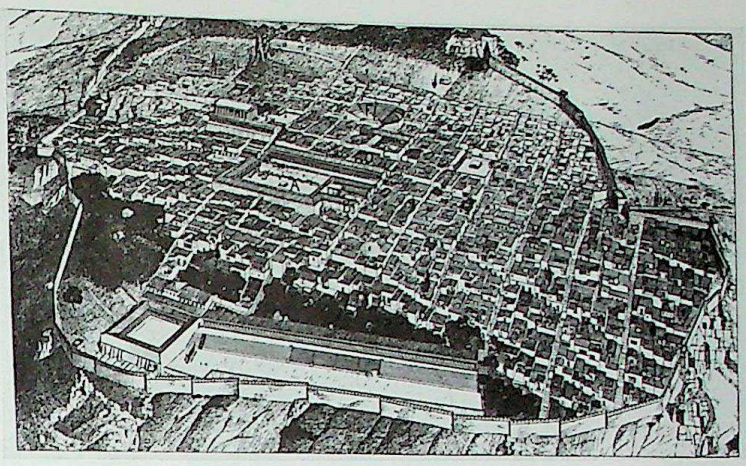


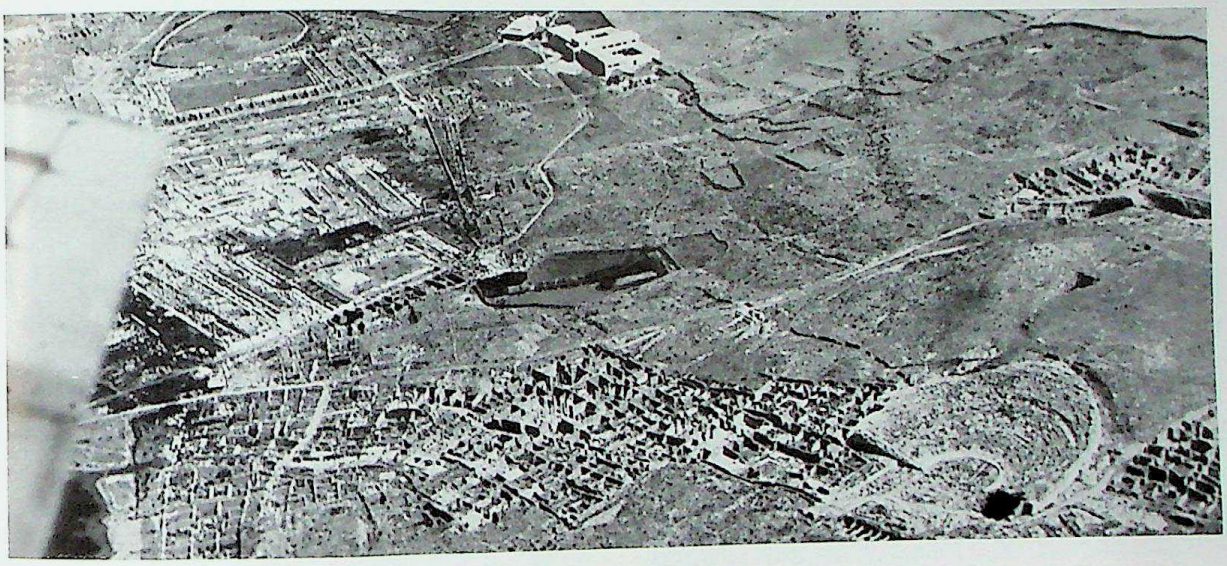


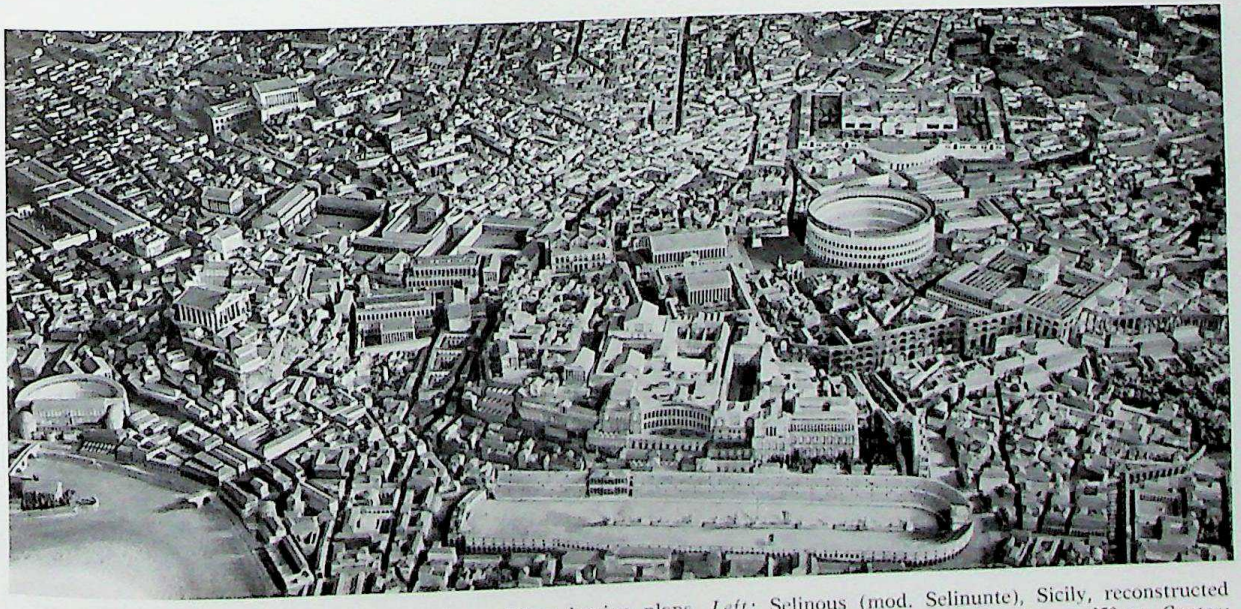
Pl. 128. Genesis of the city and urban establishments. *Above, left*: Dimini, Greece, reconstruction of a late neolithic settlement with chieftain's megaron at center. *Right*: Gournia, Crete, ruins of the Late Minoan city. *Center, left*: Mohenjo-daro, Pakistan, ruins of the city and the citadel, ca. 3d millennium B.C. *Right*: Mari, Syria, aerial view of the palace of Zimrilim, first half of 18th cent. B.C. *Below, left*: Babylon, reconstruction (after Koldewey) of the sacred precinct with the E-temen-an-ki ziggurat, ca. 6th cent. B.C. *Right*: Tell el 'Amarna, reconstruction of central district, 18th dynasty (ca. 1570–1318 B.C.).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



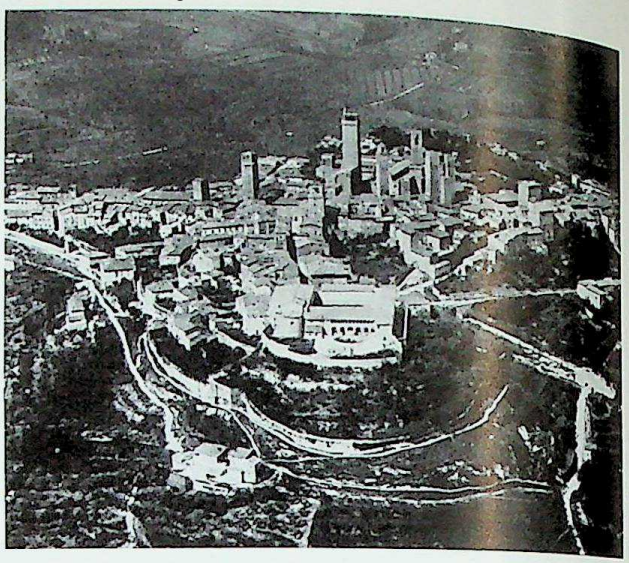


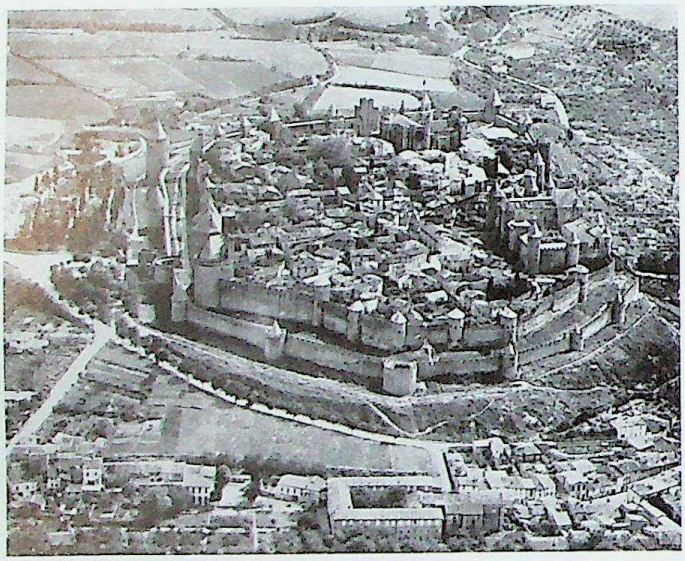


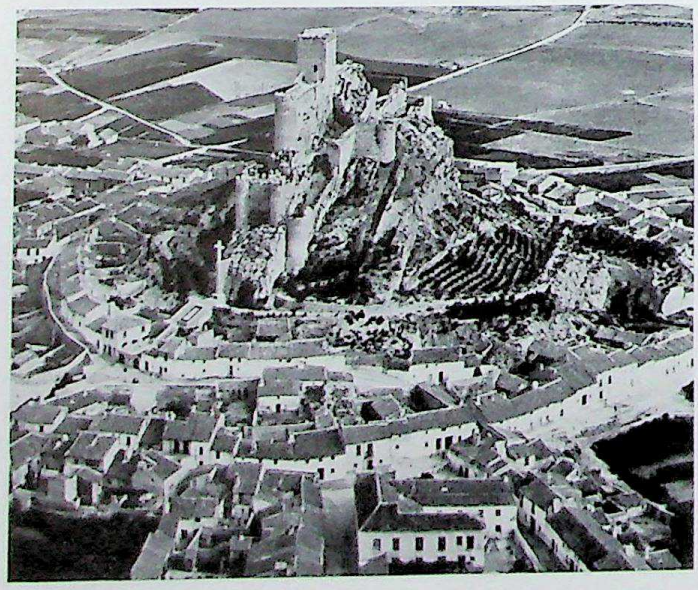


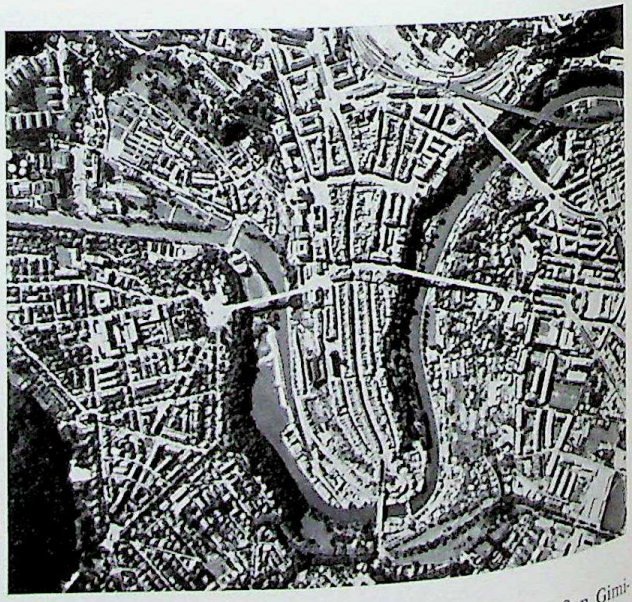
Pl. 129. Greek and Roman urban centers. *Above*: Hippodamian plans. *Left*: Selinous (mod. Selinunte), Sicily, reconstructed plan of acropolis in the last phase, ca. 408 B.C. *Right*: Priene, Turkey, reconstructed view of the city, ca. 350 B.C. *Center*: Delos, aerial view showing excavations in the theater area, 2d cent. B.C. *Below*: Rome, model of the city in the Augustan age, detail. Rome, Museo della Civiltà Romana.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



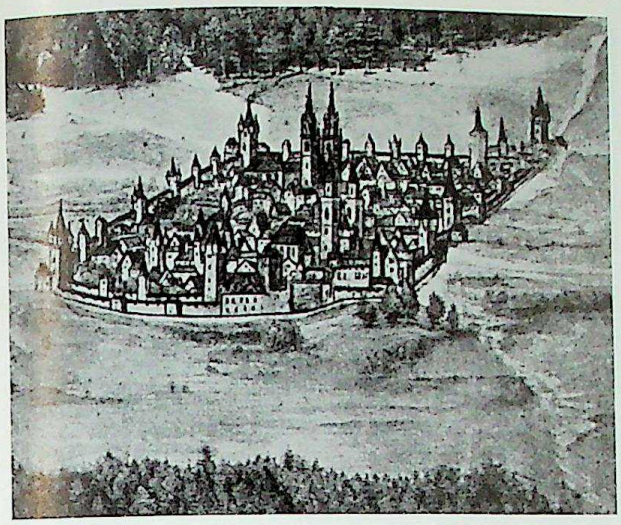


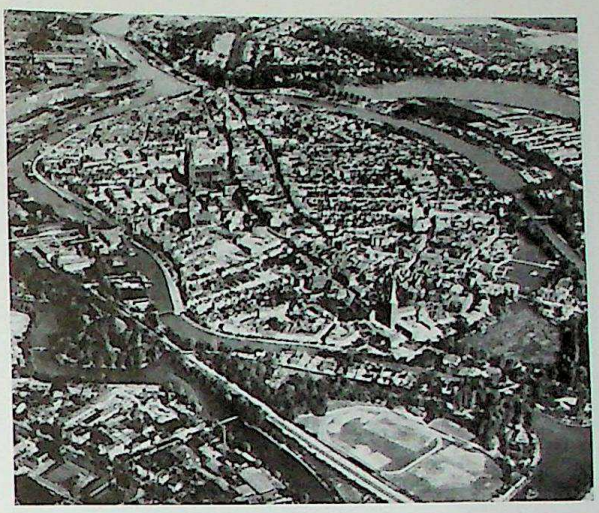


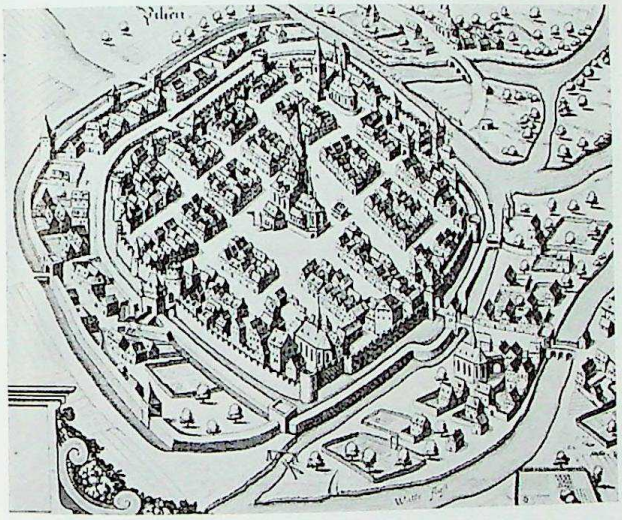


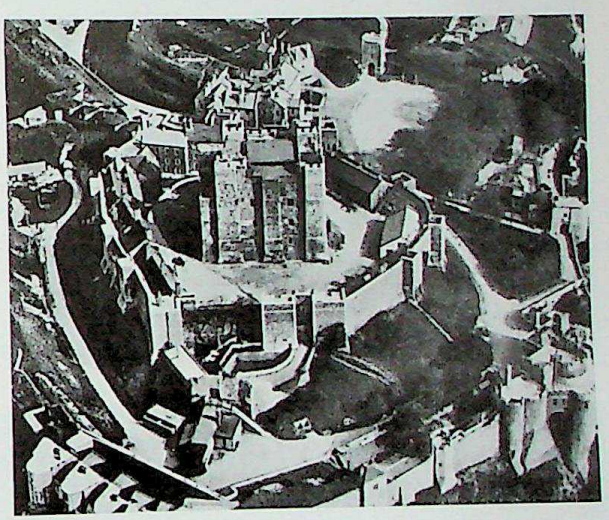
Pl. 130. Medieval urban centers. *Above, left*: Assisi, Italy, extension of the Roman nucleus with hill fortifications. *Right*: San Gimignano, Italy, hill town with high-towered houses. *Center, left*: Carcassonne, Aude, France, fortress city with double *enceinte*. *Right*: Aigues-Mortes, Gard, France, a *bastide* town. *Below, left*: Almansa, Albacete, Spain, ring settlement around the castle. *Right*: Bern, Switzerland, aerial view showing the medieval zone protected in the bend of the river.

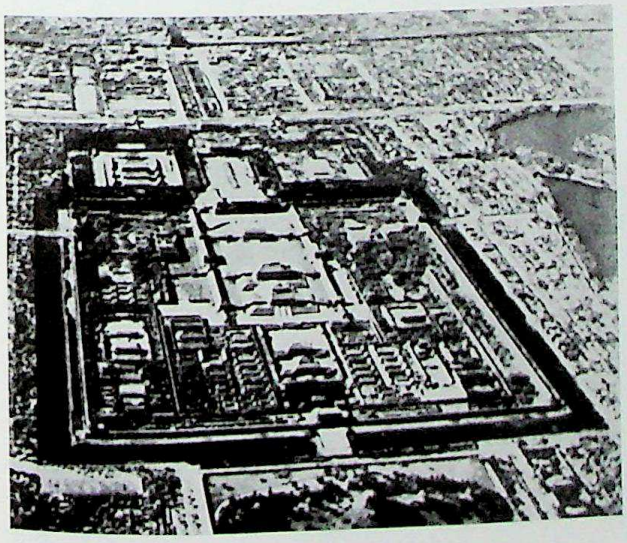
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





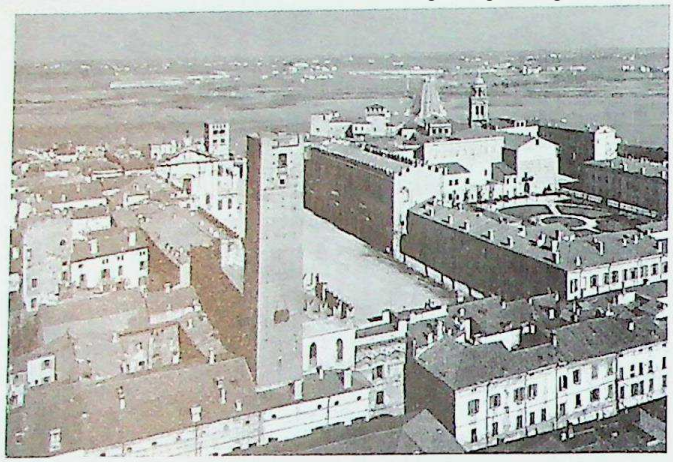


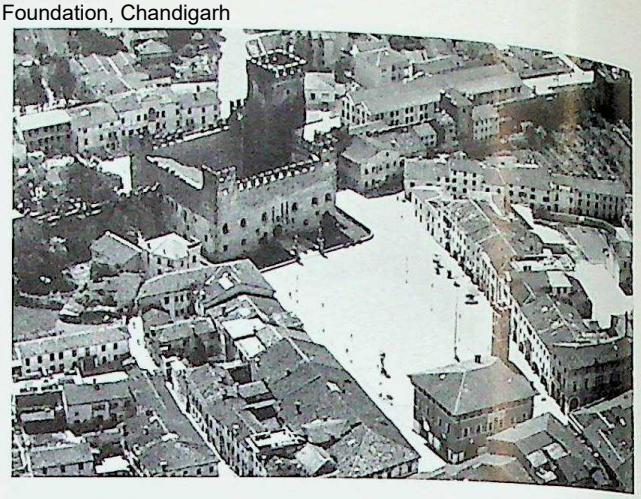


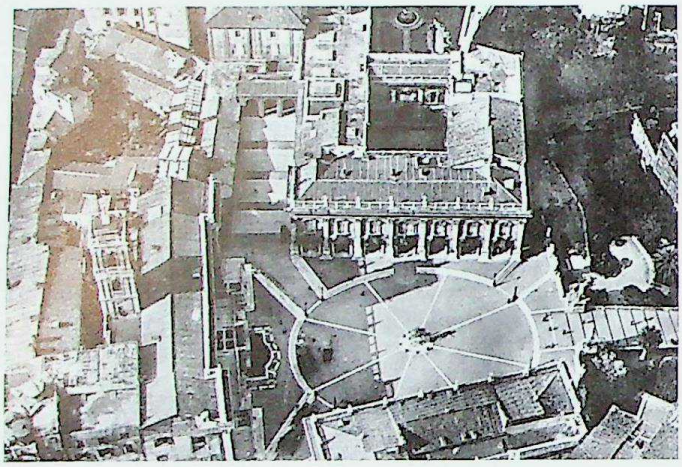


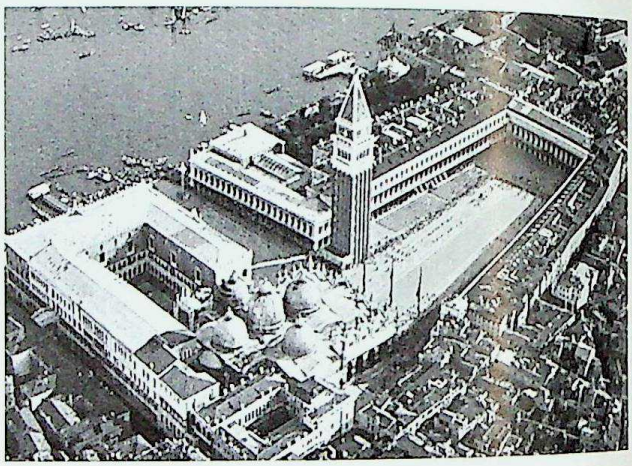
Pl. 131. Urban installations in relation to natural setting. *Above, left*: Nürnberg in the Reichswald, an island in the forest, as depicted ca. 1515. *Right*: Lübeck, Germany, aerial view, a trading city between waterways. *Center, left*: Pilsen (Plzeň), Czechoslovakia, a fortress city, as seen in a 16th-cent. print. *Right*: Dover Castle, England, an isolated stronghold, with keep of 1180. *Below, left*: Peking, the Forbidden City and Imperial City. *Right*: Machu Picchu, Peru, pre-Columbian terraced city on a mountain ridge.

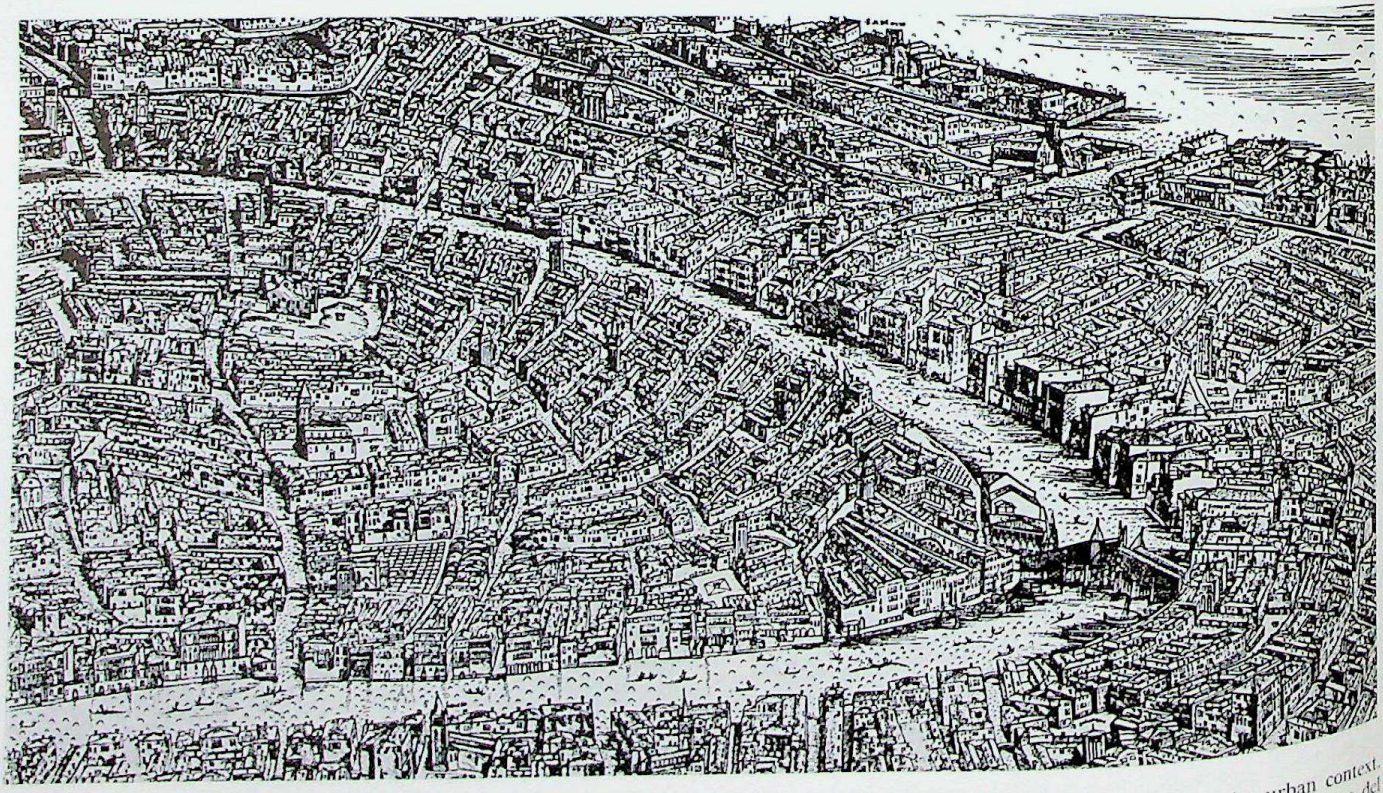
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





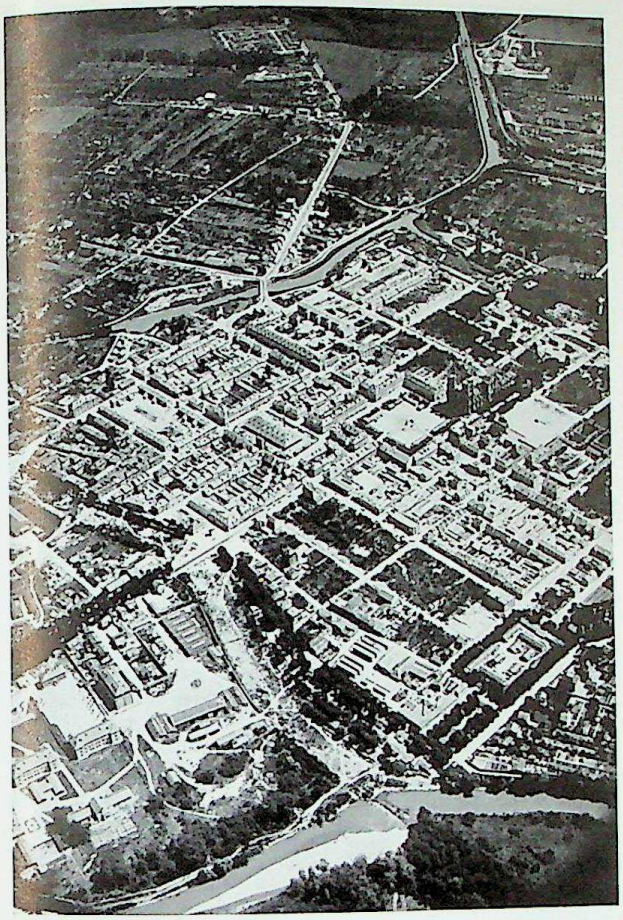


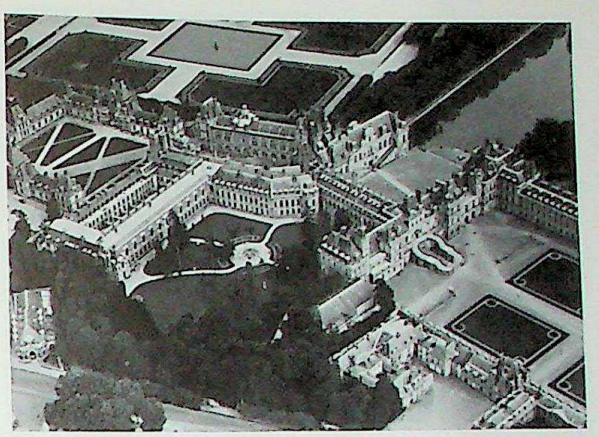


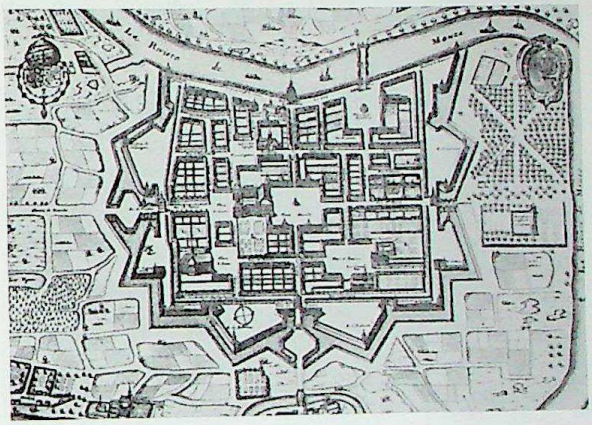


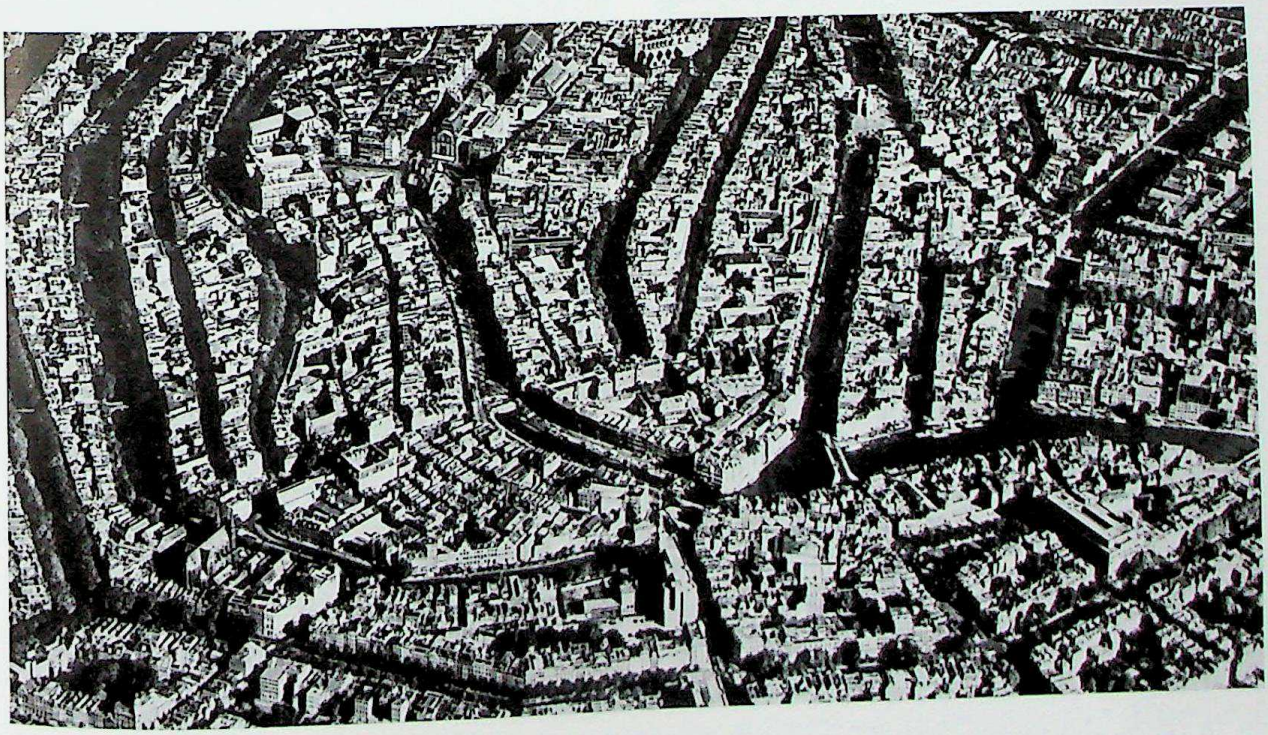
Pl. 132. Italian planning of the late Middle Ages and the Renaissance. *Above and center*: The Italian piazza in its urban context. *Above, left*: Mantua, Piazza Sordello, 14th cent. *Right*: Marostica, Piazza Castello, 14th cent. *Center, left*: Rome, Piazza del Campidoglio, after a project by Michelangelo, mid-16th cent. *Right*: Venice, Piazza and Piazzetta San Marco, 15th–19th cent. *Below*: Venice, detail of the *Pianta di Venezia del 1500* by J. de' Barbari, showing waterways, alleys, and squares.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



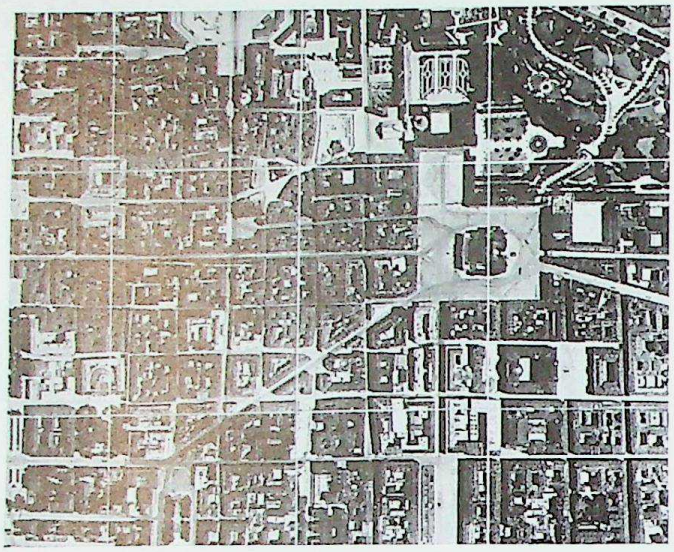


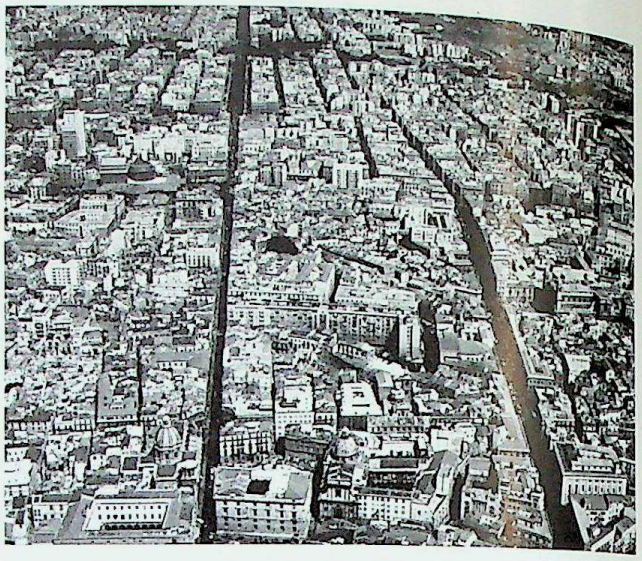


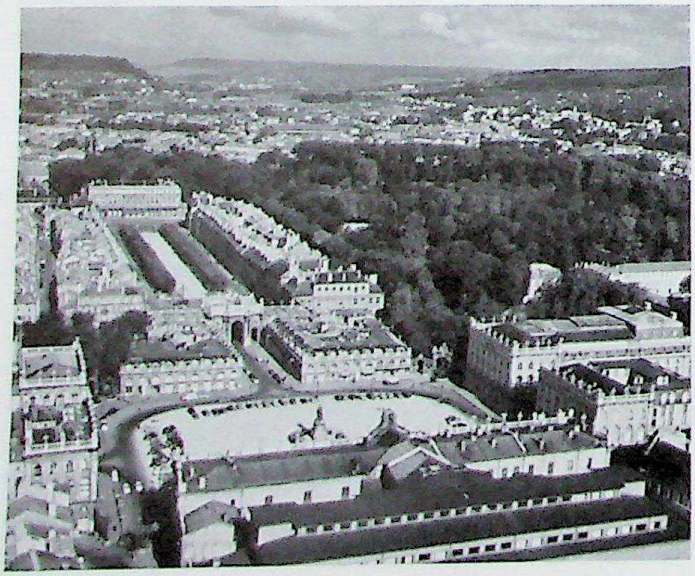


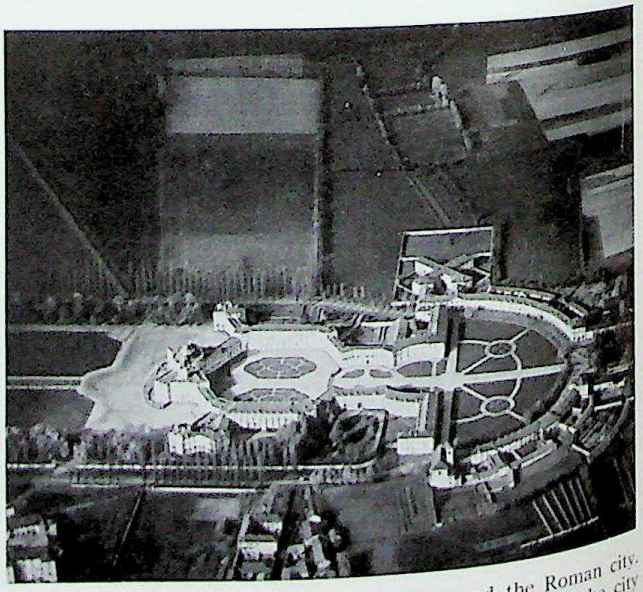
Pl. 133. French and Dutch planning of the 16th and 17th centuries. *Left*: Vitry-le-François, Marne, France, founded ca. 1545. *Right, above*: Fontainebleau, the château and gardens, mainly 16th–17th cent. *Center*: Plan of Charleville, Ardennes, a Vitruvian town, founded 1606–20, based on a project by C. Métezeau II. *Below*: Amsterdam, aerial view showing the water thoroughfares.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



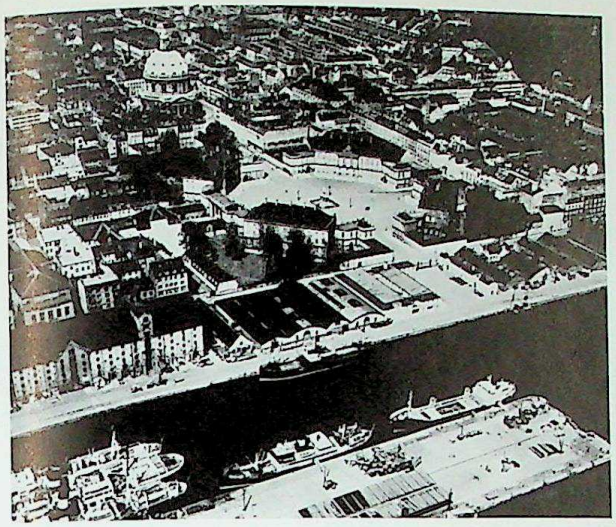


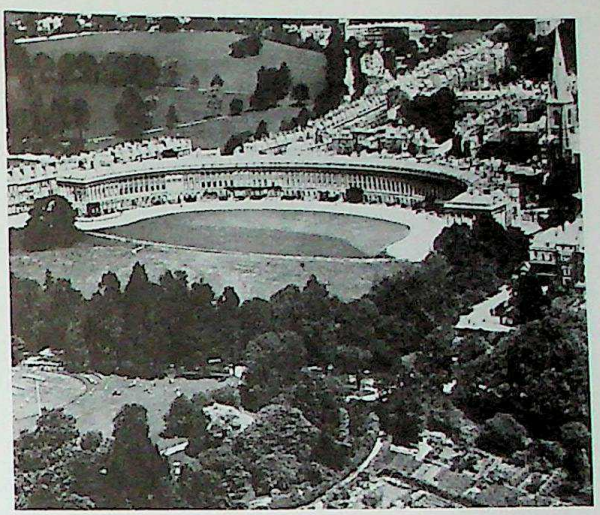


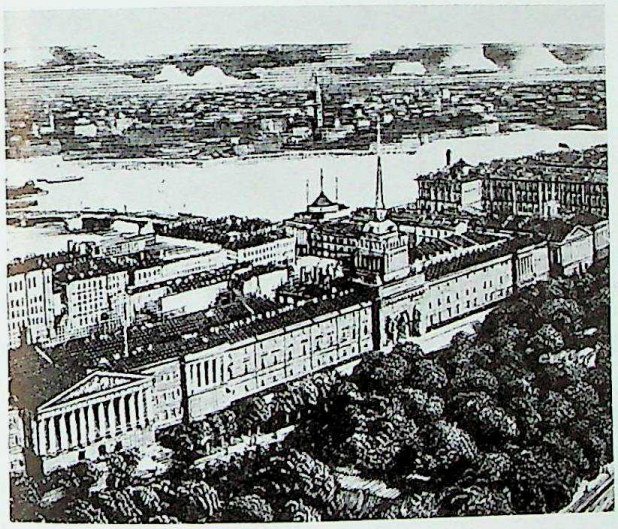


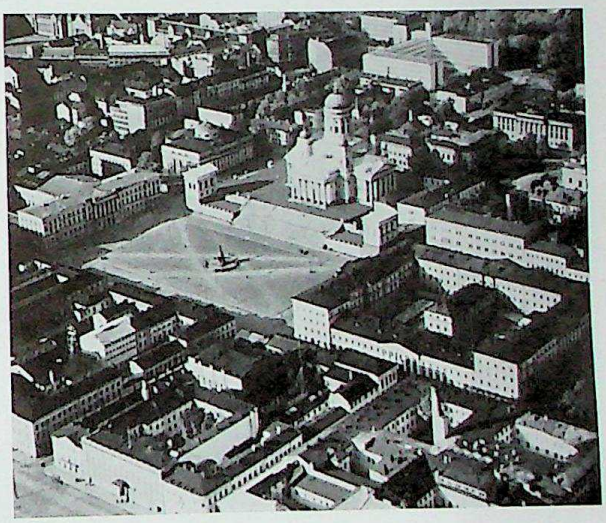
Pl. 134. The European baroque. *Above, left*: Turin, area of Piazza Castello, showing baroque development around the Roman city. *Right*: Palermo, center, showing Via Maqueda and Via Roma. *Center, left*: Ragusa, Sicily, baroque extension of the city alongside the medieval nucleus. *Right*: Lisbon, Praça do Comércio, begun 1758 under E. dos Santos de Carvalho. *Below, left*: Nancy, France, Place Stanislas (Place Royale) and Place de la Carrière, by E. Héré de Corny, ca. 1752–56. *Right*: Stupinigi, near Turin, general view of the royal hunting lodge and park, projected by F. Juvara, 1729.

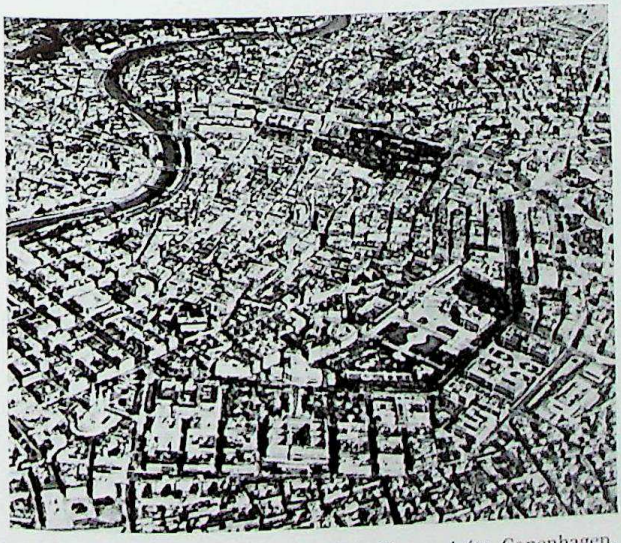
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

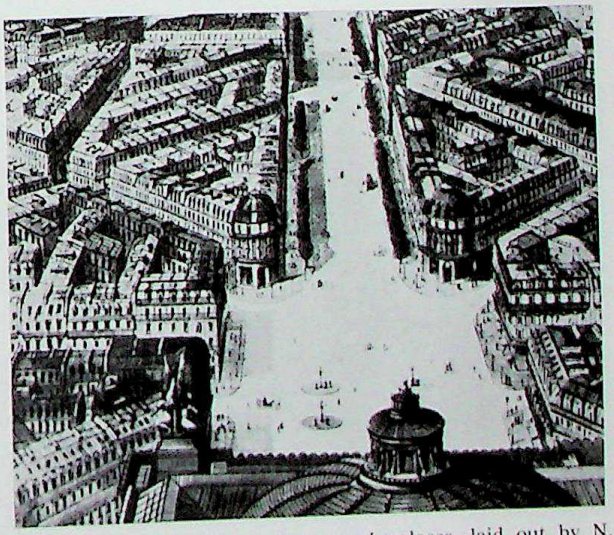






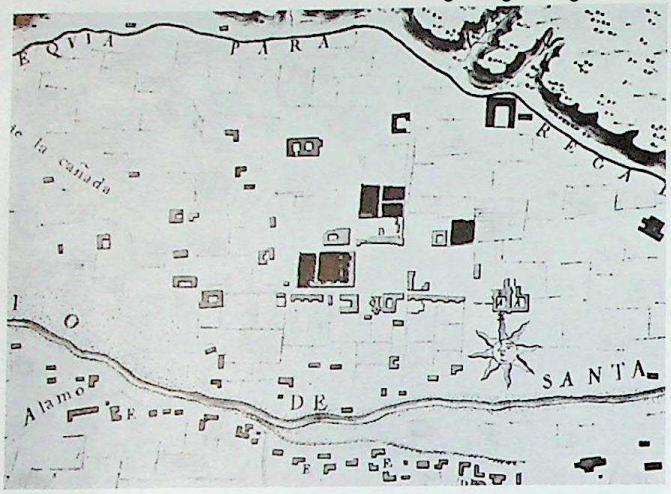


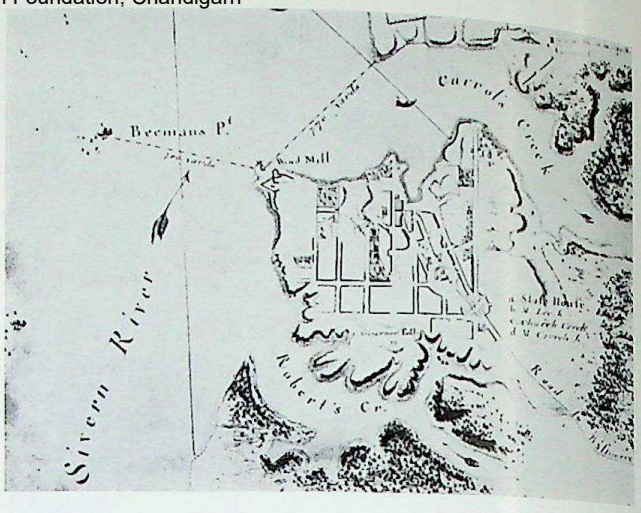


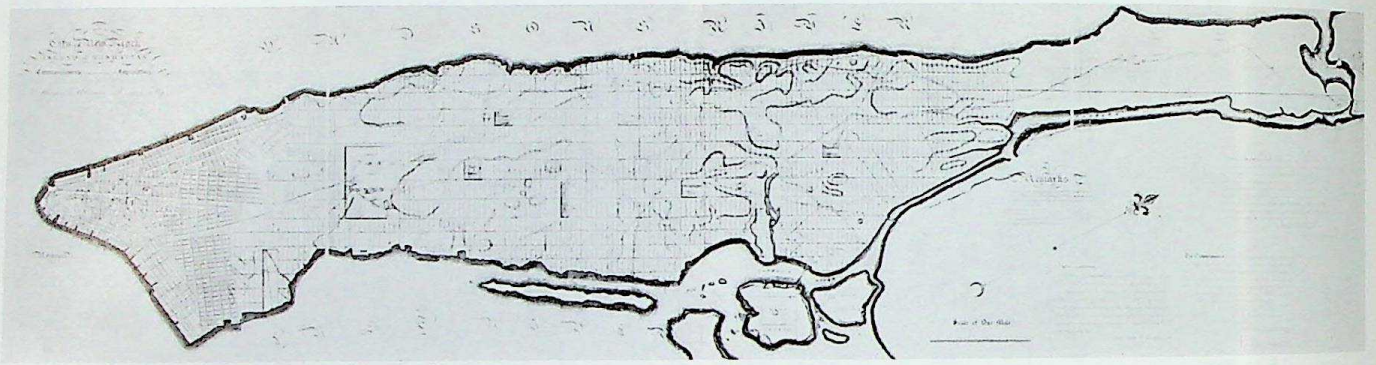


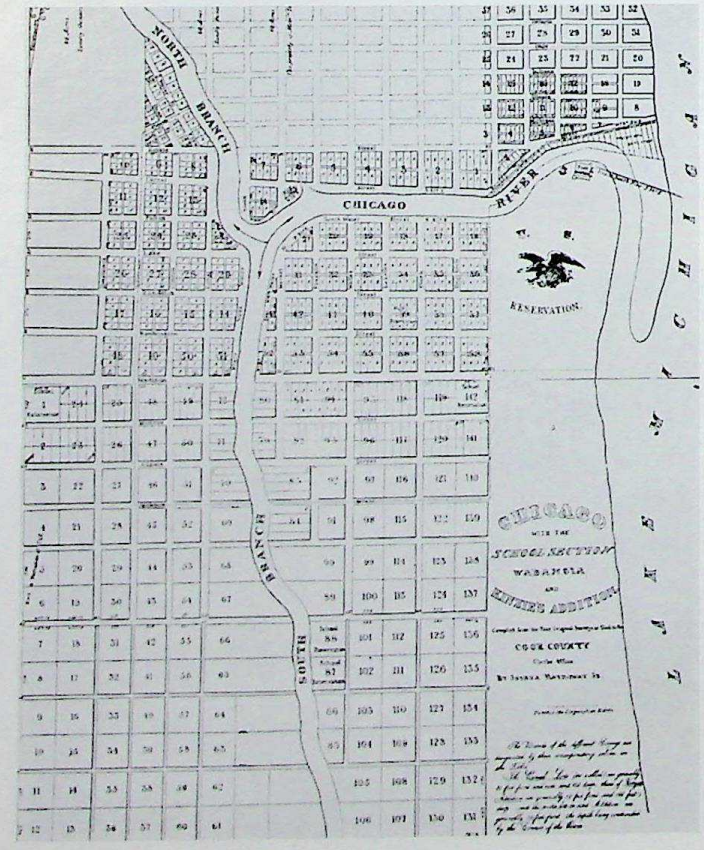
Pl. 135. The 18th and 19th centuries. *Above, left*: Copenhagen, Amalienborg district, with the four royal palaces, laid out by N. Eigtved, 1749. *Right*: Bath, England, Royal Crescent, John Wood, Jr., 1767–75. *Center, left*: Leningrad, print showing the Winter Palace and adjacent streets, 18th–19th cent. *Right*: Helsinki, center of the city, laid out by J. A. Ehrenström and C. L. Engel, first half of 19th cent. *Below, left*: Vienna, the old city within the Ring surrounded by 19th-cent. and later additions. *Right*: Paris, print showing Avenue de l'Opéra according to G. E. Haussmann's project, 1853–69.

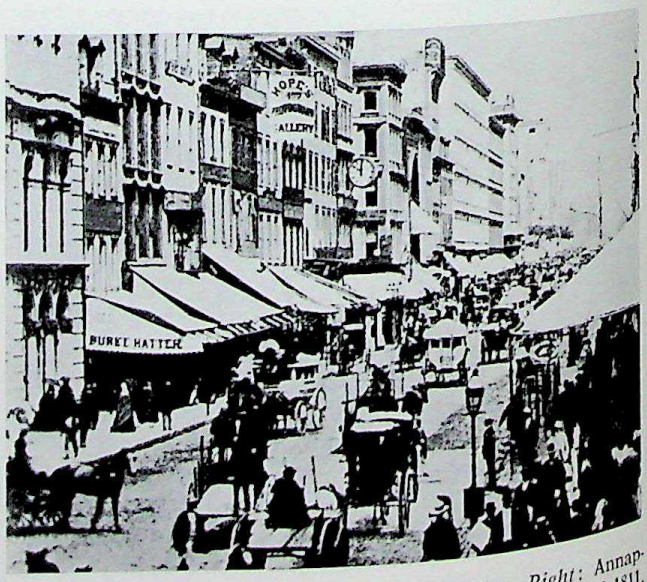
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





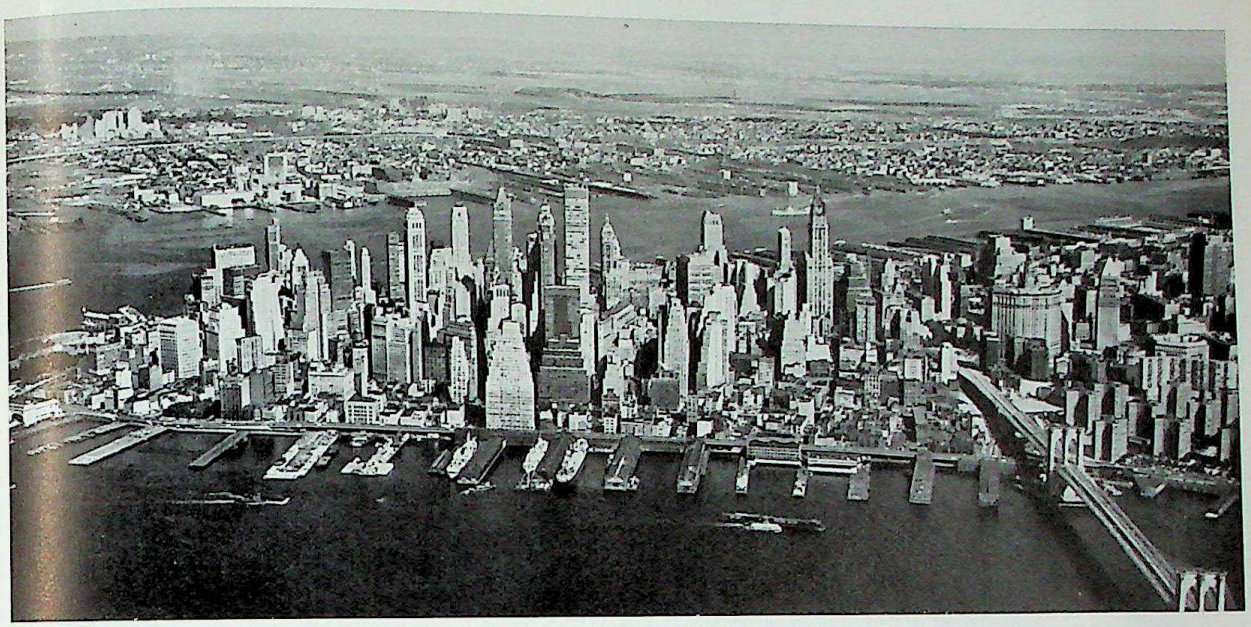






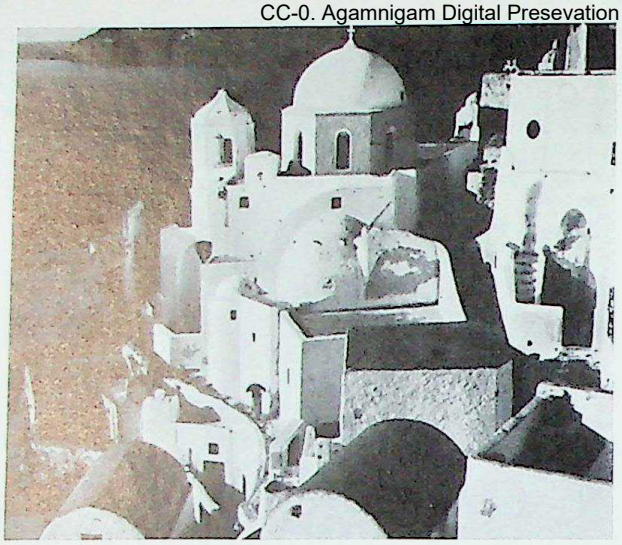
Pl. 136. The American city. *Above, left*: Santa Fe, N. Mex., plan of the city at the time of Spanish colonization. *Right*: Annapolis, plan of the city and port in the 18th cent. *Center*: New York City, Manhattan Island, commissioners' plan of 1811. *Below, left*: Chicago, plan of the city according to a survey of 1834. *Right*: Oklahoma City in 1890; New York City, photograph of Broadway in 1860.

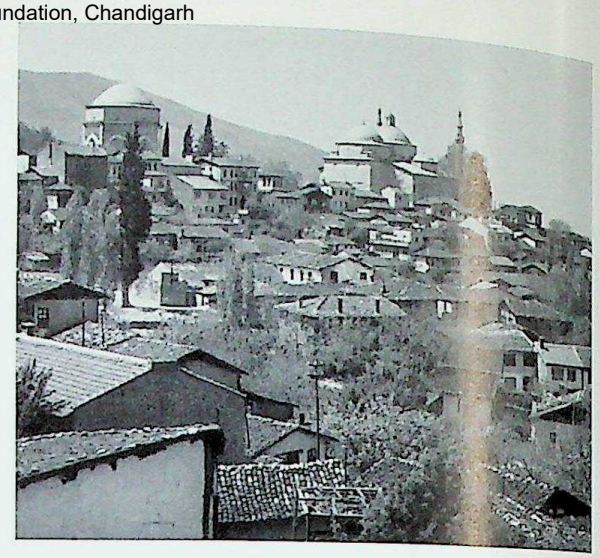
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

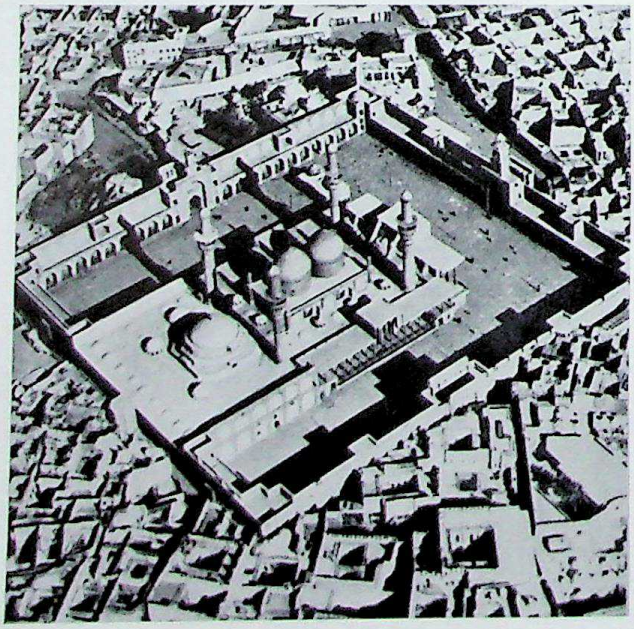


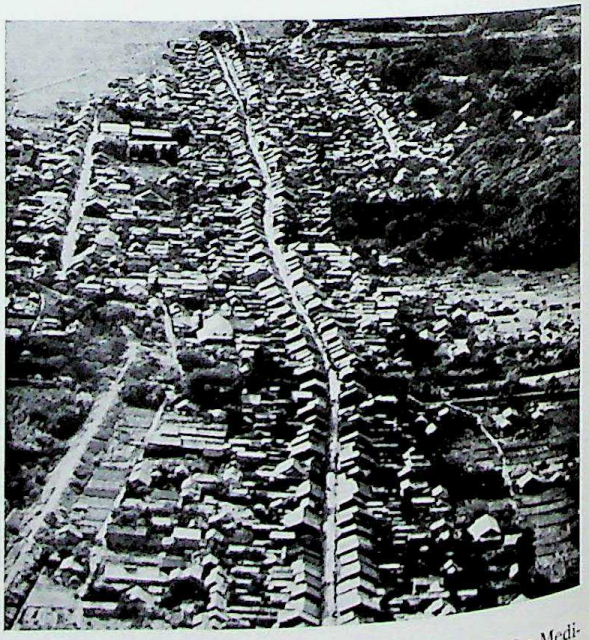
Pl. 137. The American metropolis. *Above*: New York City, lower Manhattan. *Below*: Chicago, center.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



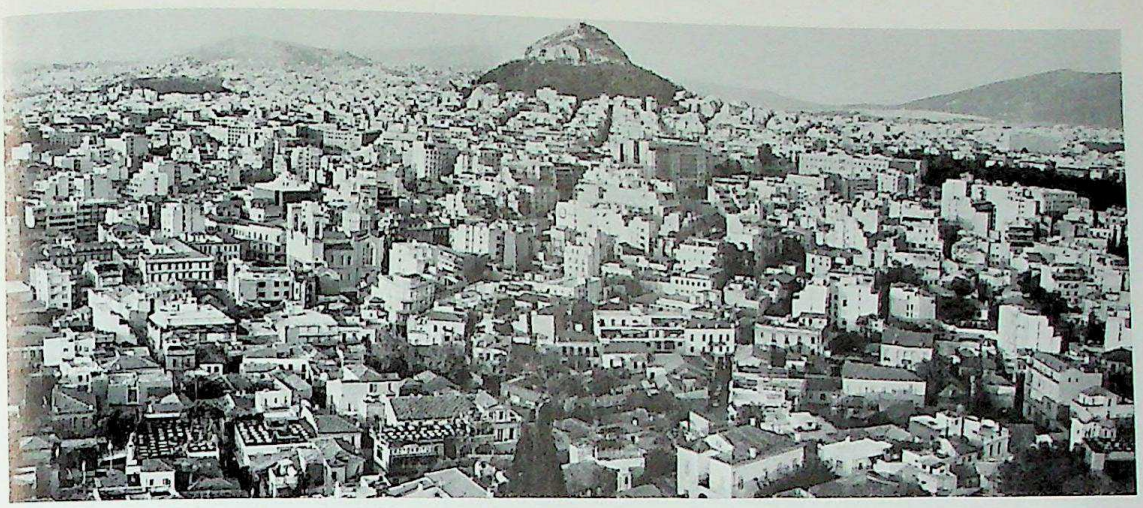






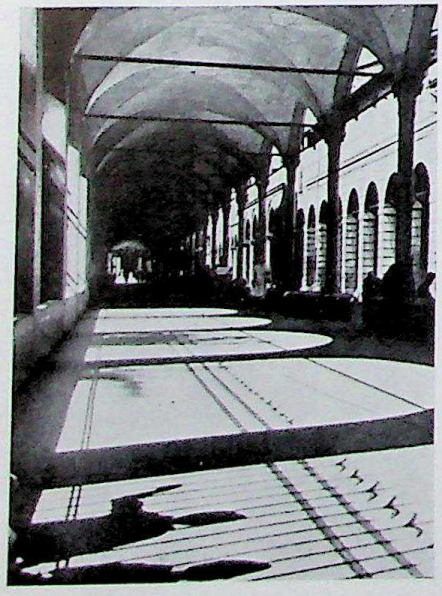
Pl. 138. The morphology of urban centers. *Above, left*: Santorin, Cyclades, Greece, a typical compact village of the Mediterranean area. *Right*: Bursa, Turkey, mosques rising above the rooftops. *Center*: Hadhramaut province, Aden, compact village cluster. *Below, left*: Baghdad, the Sanctuary of Khadimain set into the urban tissue. *Right*: Kyushu, near Nagasaki, a street or ribbon village.

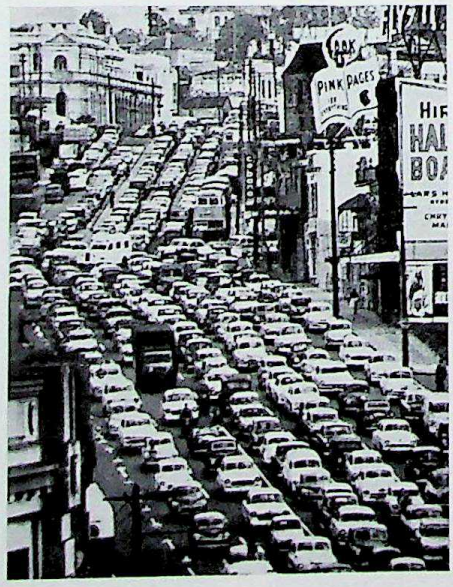
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 139. The morphology of the city. *Above*: Athens, urban sprawl seen from the Acropolis. *Center*: São Paulo, Brazil, skyscrapers set into the urban agglomerate; Stockholm, water-front architecture of the historical city. *Below, left*: Moscow, contrast between small traditional dwellings and multistoried buildings. *Right*: New York City, skyscrapers along a street in mid-town Manhattan.

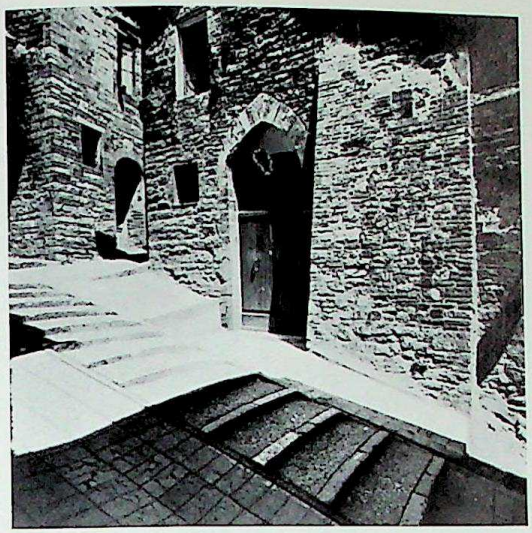
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

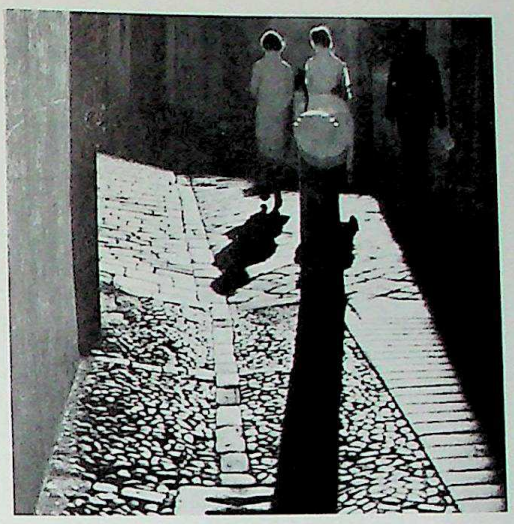


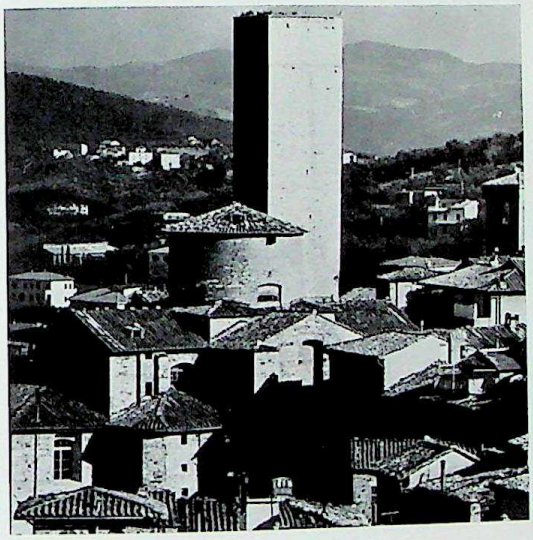


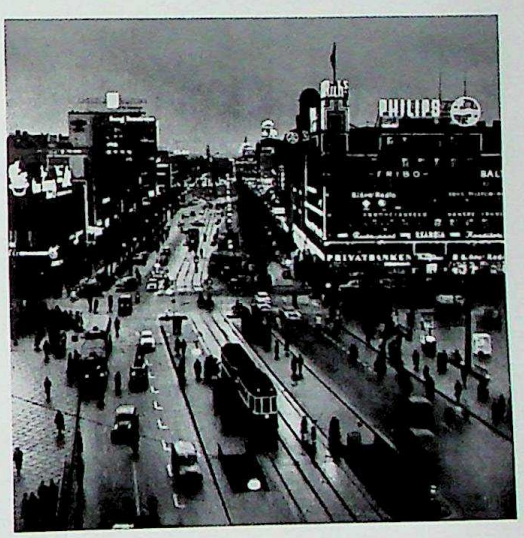
Pl. 140. Townscape. *Above, left*: The piazza (Piazza del Comune), Assisi. *Right*: Waterway, Venice. *Below, left*: Arcade, Bologna. *Center*: Thoroughfare, Sydney, Australia. *Right*: Pedestrian way, Gdańsk.

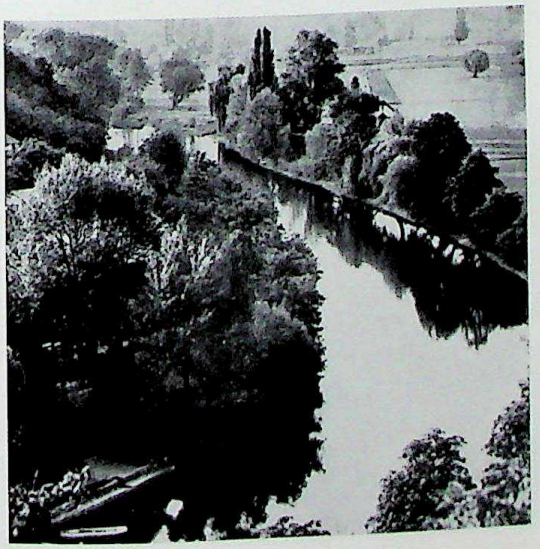
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





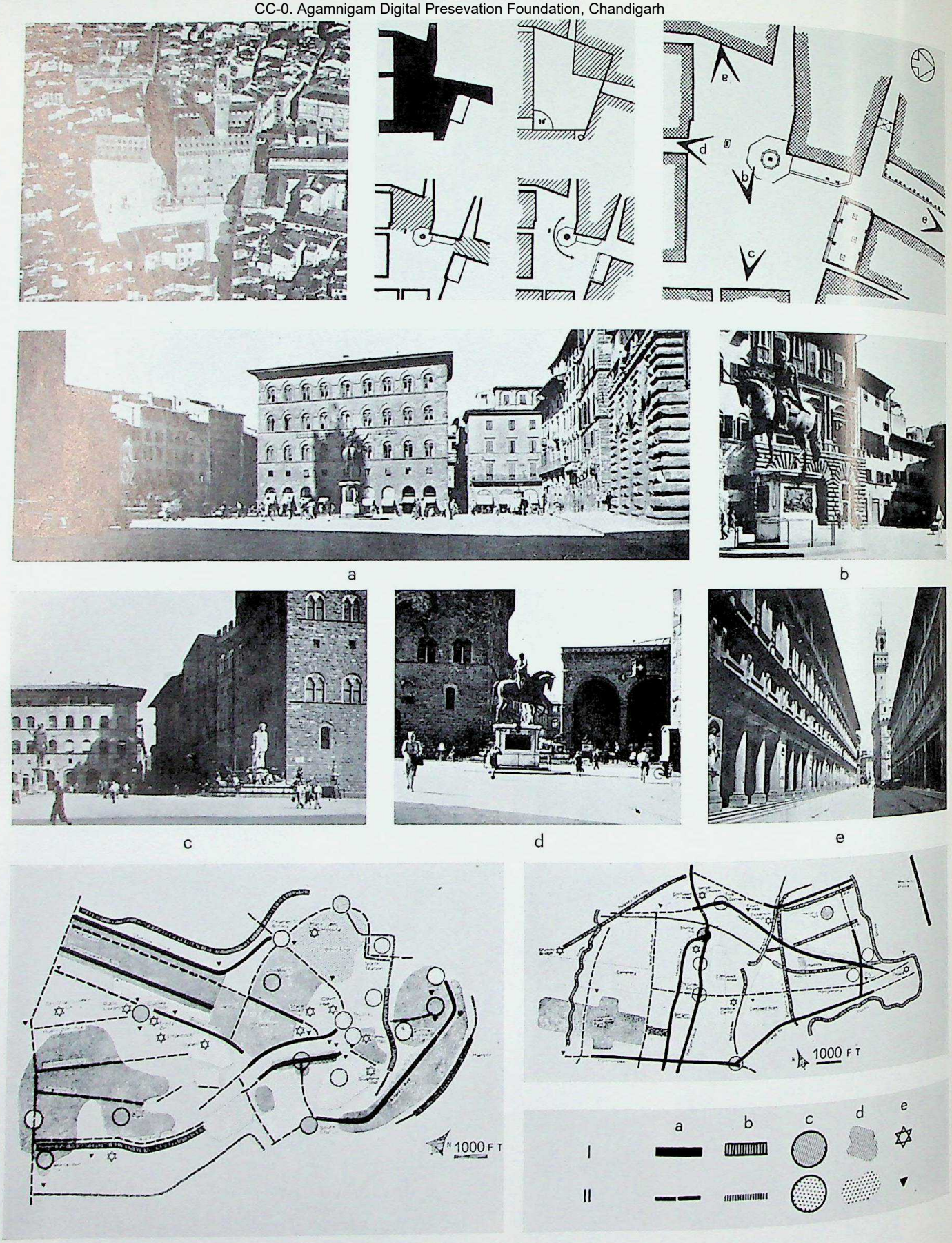






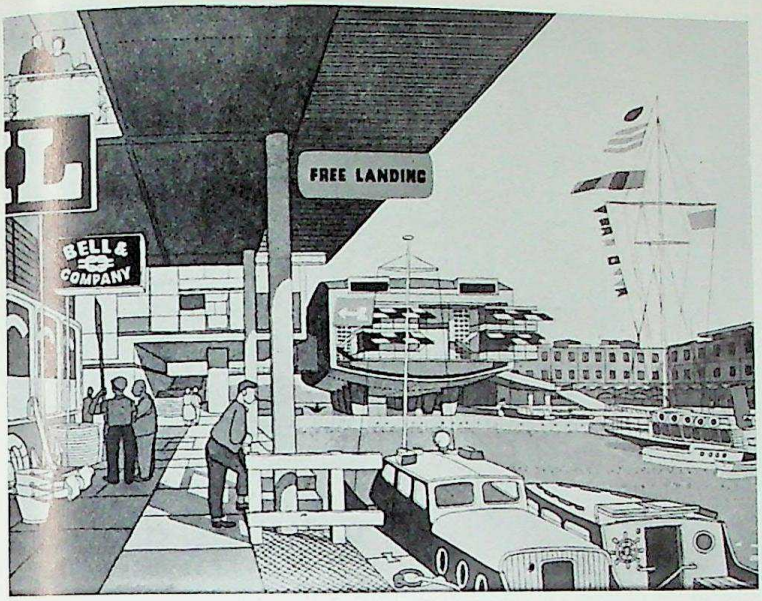
Pl. 141. Townscape. *Above, left*: Masonry, ancient walls of Assisi. *Right*: Street paving of stone, Spoleto, Italy. *Center, left*: Roofs, Perugia (Torre degli Sciri and adjacent buildings). *Right*: Lights, Copenhagen (Vesterbrogade). *Below, left*: Green spaces, suburbs of Brno, Czechoslovakia. *Right*: Publicity, Stockholm (Sergels Torg).

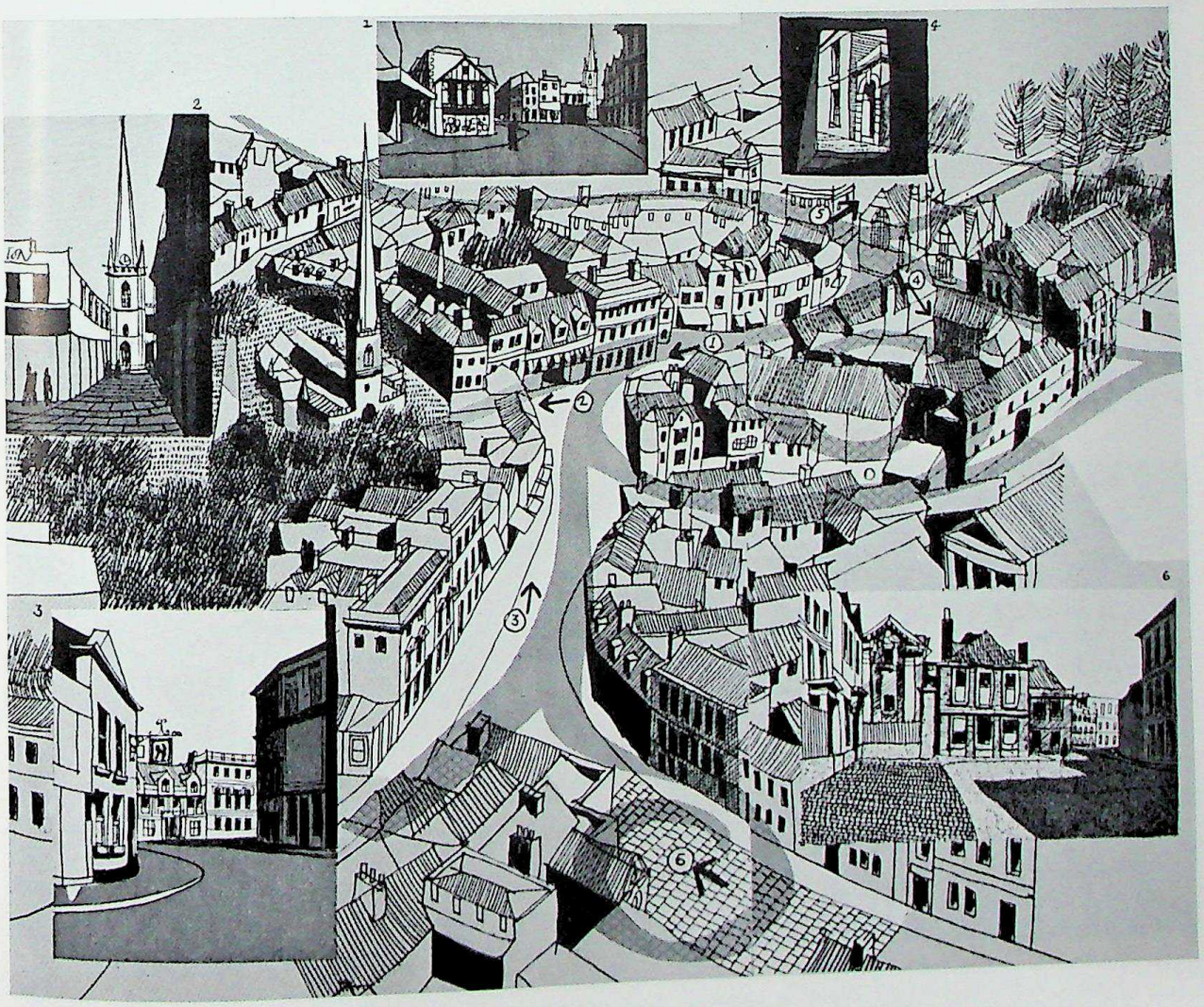
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 142. *Top three rows*: Perspective analysis by F. Gibberd of the Piazza della Signoria, Florence. *Bottom row*: Studies in "imageability" by K. Lynch, showing the visual forms of Boston (*left*) and Jersey City (*right, above*) as observed in the field, with key (*right, below*). I. Major element. II. Minor element. a. Path; b. edge; c. node; d. district; e. landmark.

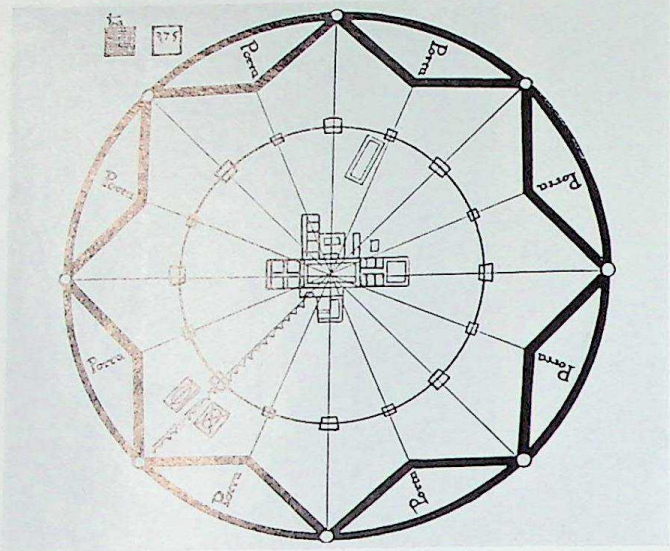
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

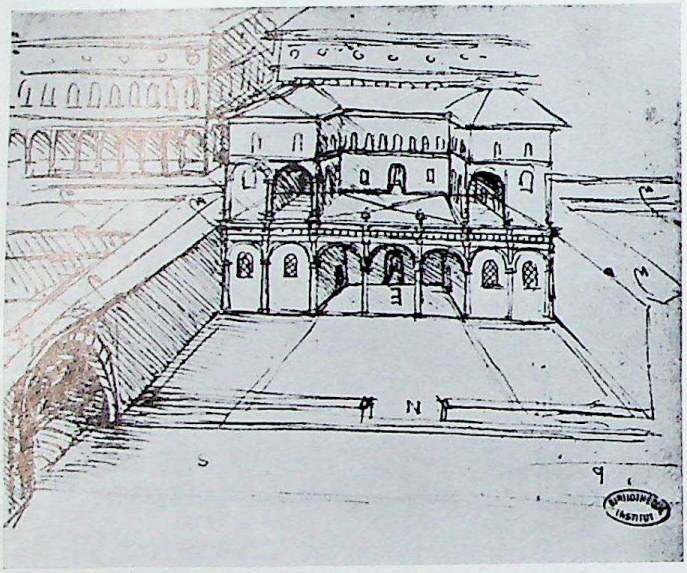


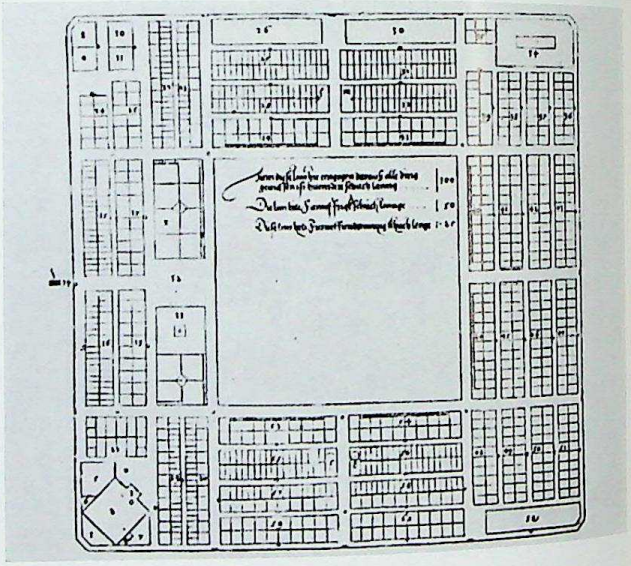


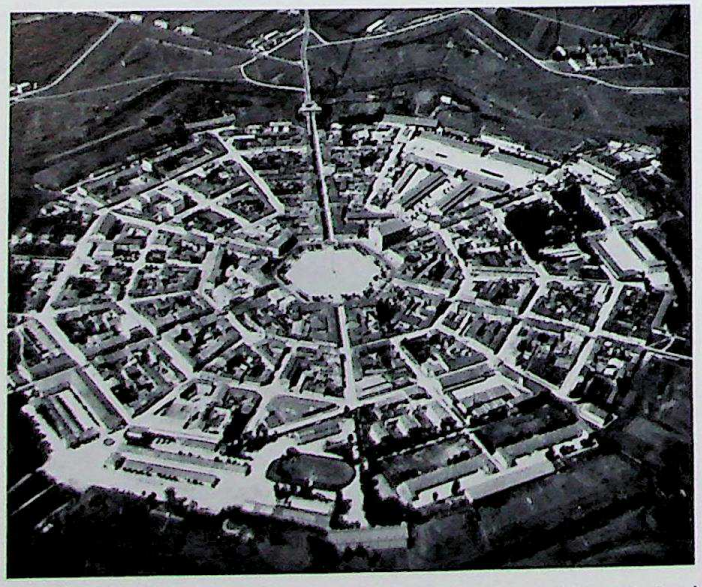
Pl. 143. Studies in townscape (England). *Above, left*: New Marlow, by G. Cullen. *Right*: Publicity in the contemporary city, by K. Browne, 1957. *Below*: Trowbridge, showing pedestrian views at given station points, by G. Cullen.

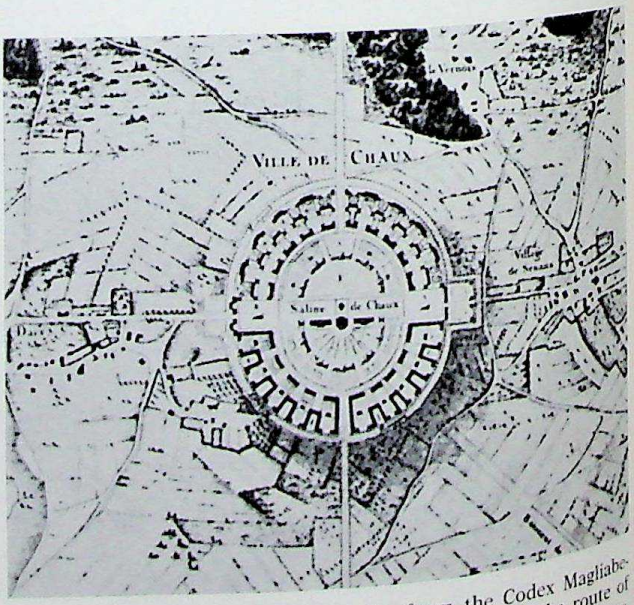
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





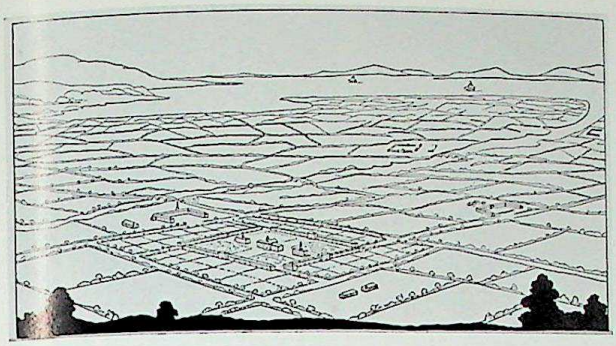


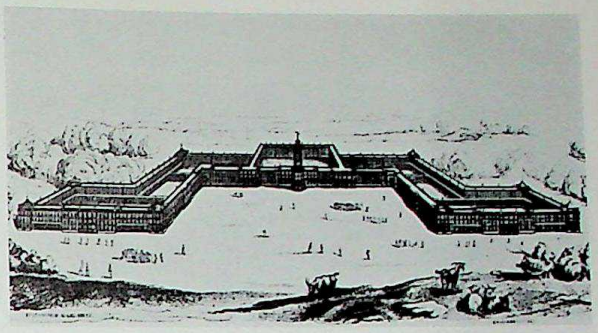


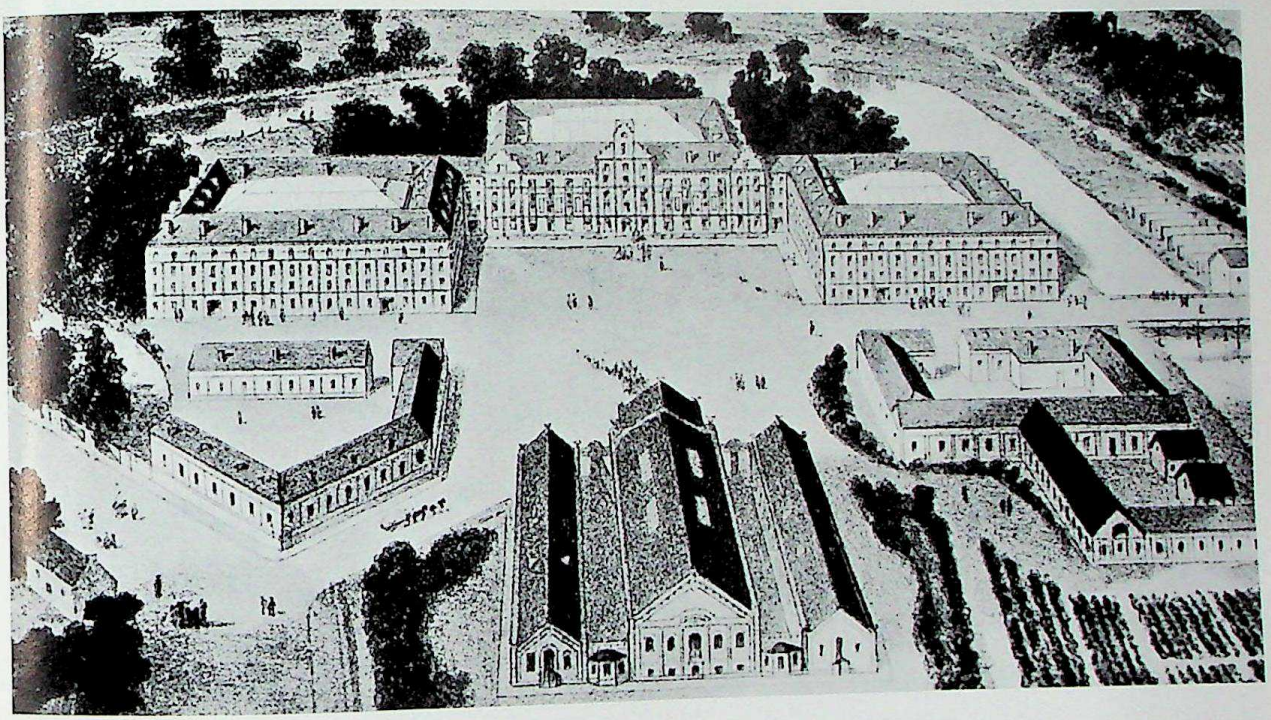


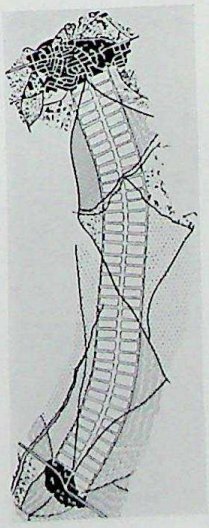
Pl. 144. The ideal city—Renaissance and baroque. *Above, left*: A. Filarete, star-shaped plan for Sforzinda, from the Codex Magliabechianus, ca. 1457–64. Florence, Biblioteca Nazionale. *Right*: Leonardo da Vinci, map of the Val d'Arno showing the route of a hypothetical canal issuing from and reentering the Arno River, 1503. Windsor, England, Royal Library (no. 12279). *Center, left*: Leonardo da Vinci, drawing of a multilevel city. Paris, Institut de France (Ms. B). *Right*: A. Dürer, fortress city, from *Etliche unterricht zu Befestigung der Statt*, Nürnberg, 1527. *Below, left*: G. Savorgnan, Palmanova, Italy, designed 1593, aerial view. *Right*: C. N. Ledoux, plan for the city of Chaux, published 1804.

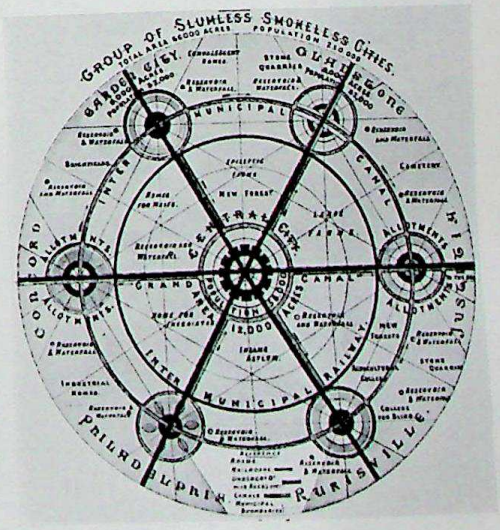
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





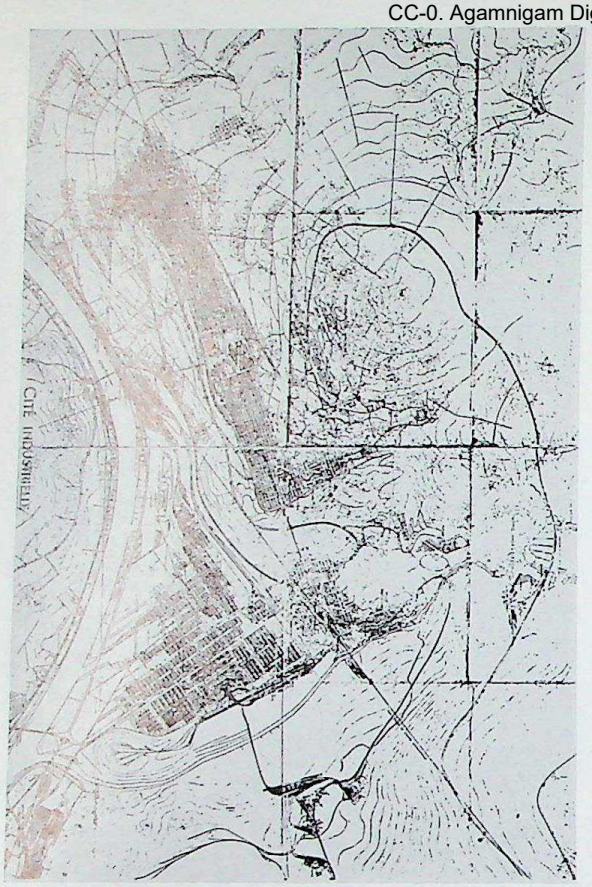


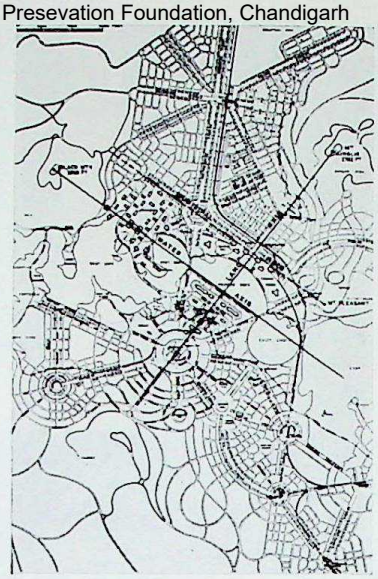


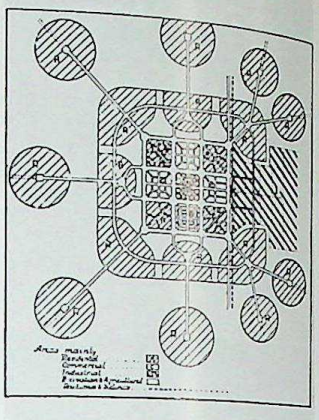


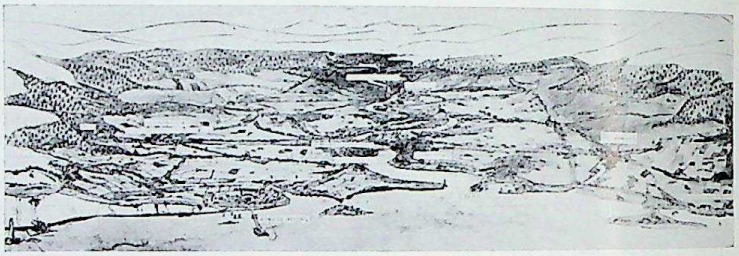
Pl. 145. Utopias of the Industrial Revolution. *Above, left*: R. Owen, "Agricultural and Manufacturing Villages of Unity and Mutual Co-operation," plan, 1817. *Right*: F. M. C. Fourier, phalanstery, 1822. *Center*: J. B. A. Godin, familistery, realized at Guise in 1859. *Below, left*: T. Salt, project for the English manufacturing community Saltaire, begun 1851. *Middle*: A. Soria y Mata, plan of a linear city (*La Ciudad Lineal*) for the outskirts of Madrid, 1882. *Right*: E. Howard, forecast of the garden city, 1898.

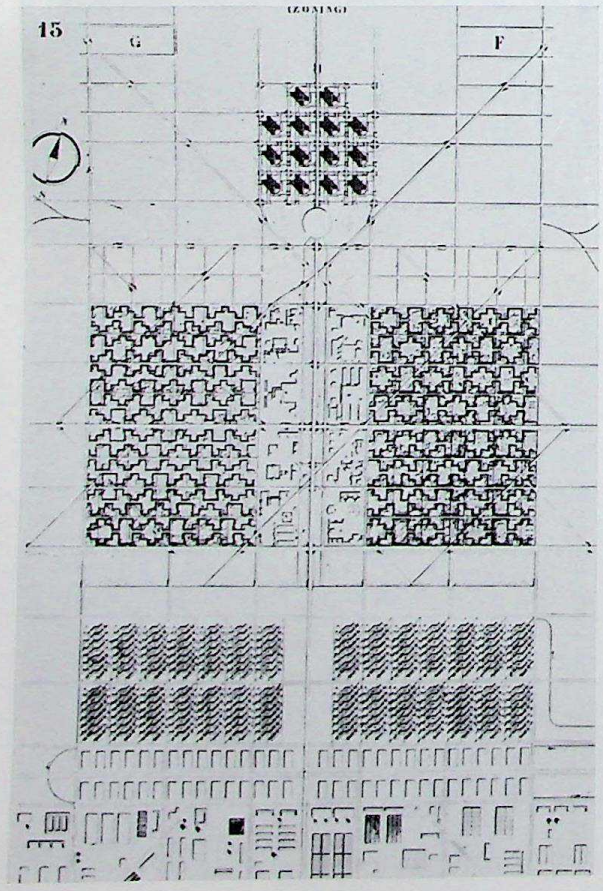
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

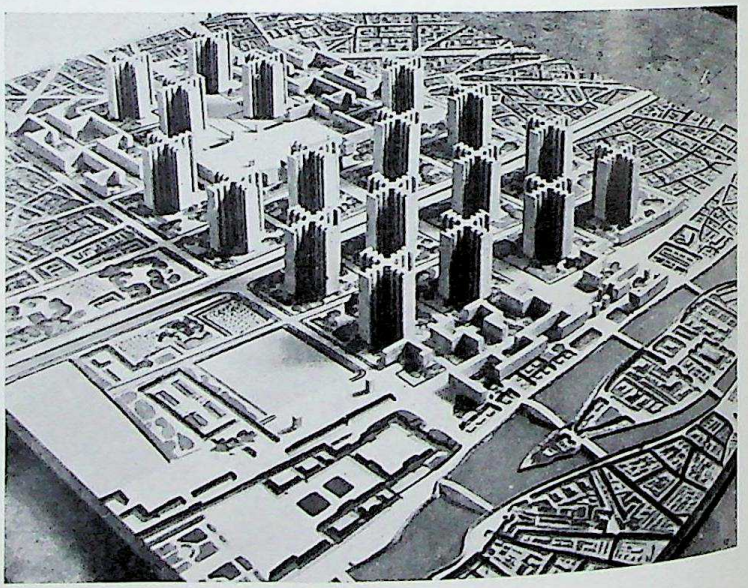


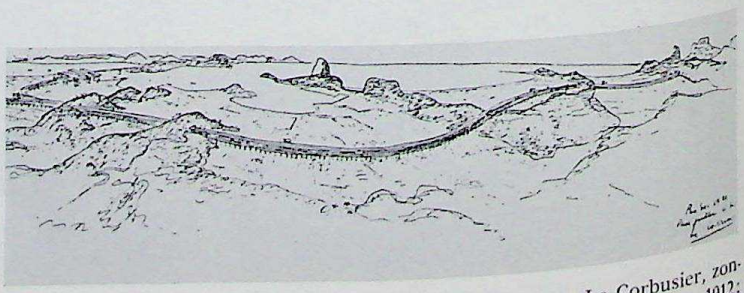






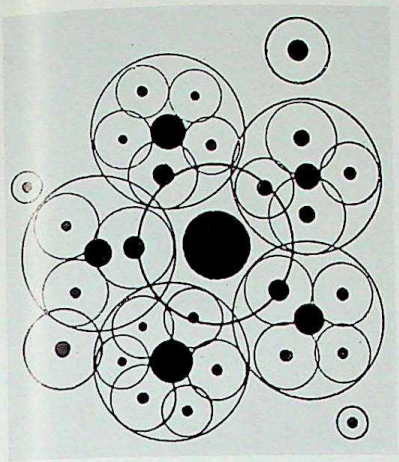


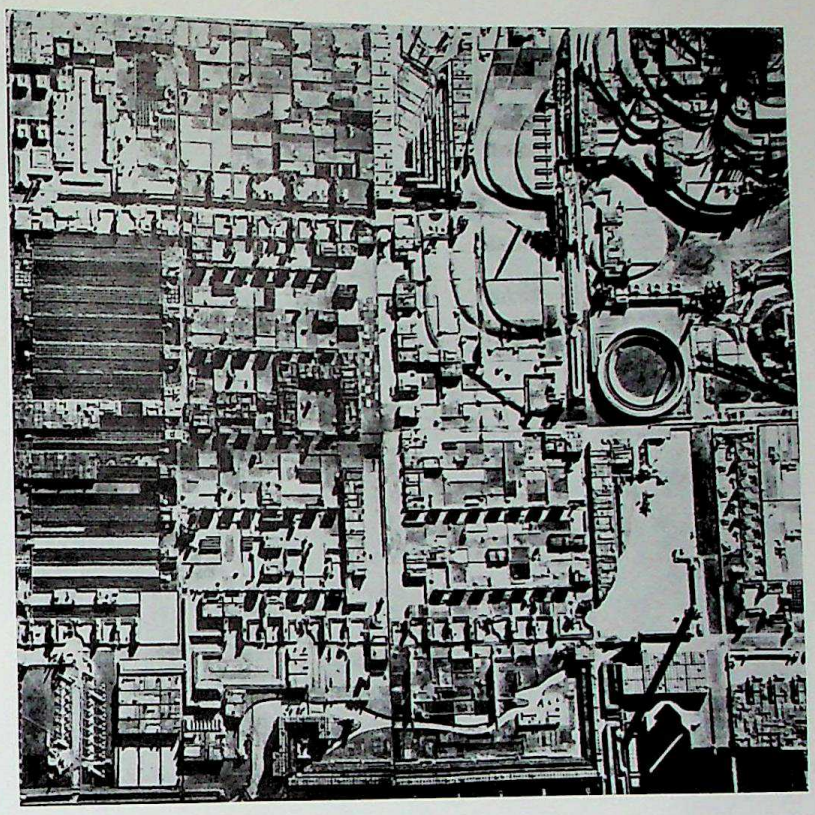


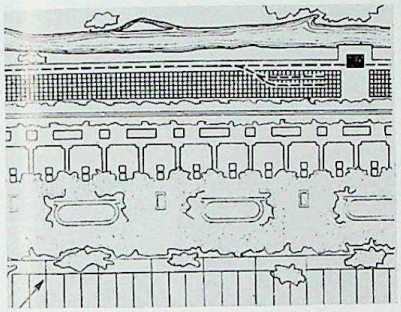


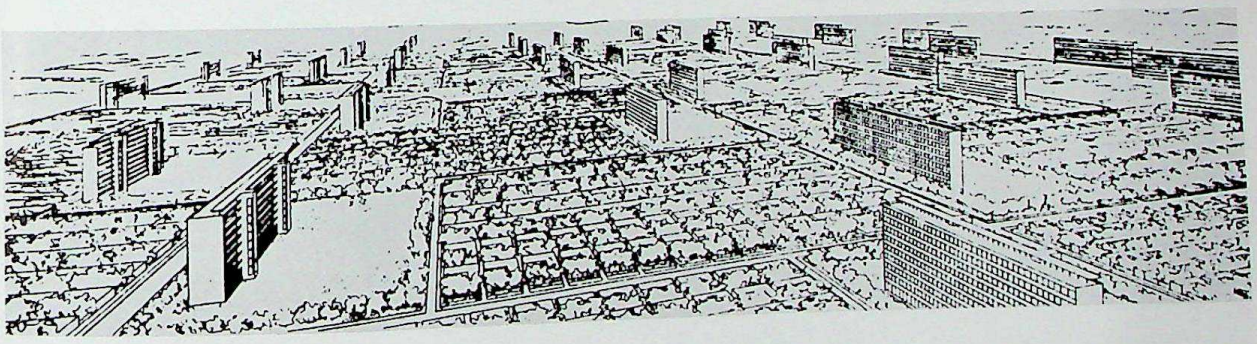
Pl. 146. Modern Utopias. *Left, above*: T. Garnier, industrial city (Une Cité Industrielle), projected 1901–04. *Below*: Le Corbusier, zoning plan for the Ville Radieuse, exhibited 1930. *Right, above*: W. B. Griffin, revised project for Canberra, Australia, ca. 1912; R. Unwin, project for a city, 1919–27. *Center*: P. Geddes, regional survey, ca. 1915. *Below*: Le Corbusier, Plan Voisin for Paris, 1925, and study for Rio de Janeiro, highway elevated on a continuous row of apartment houses, 1929.

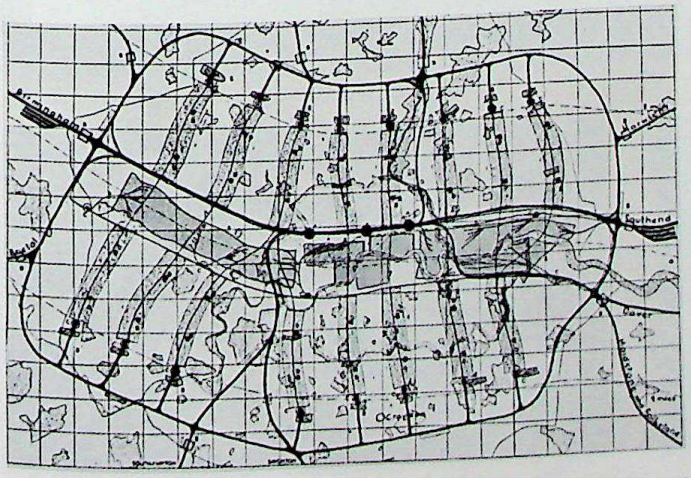
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

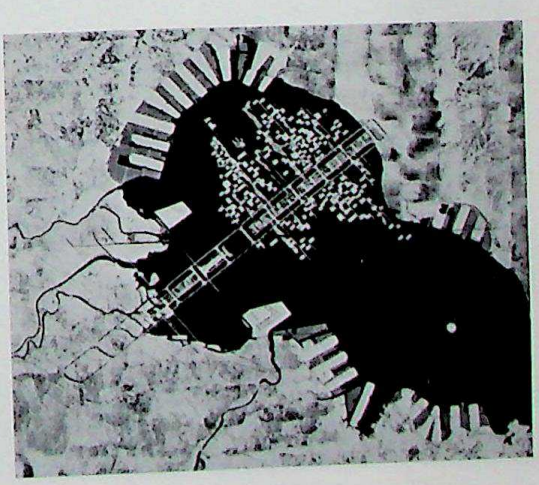






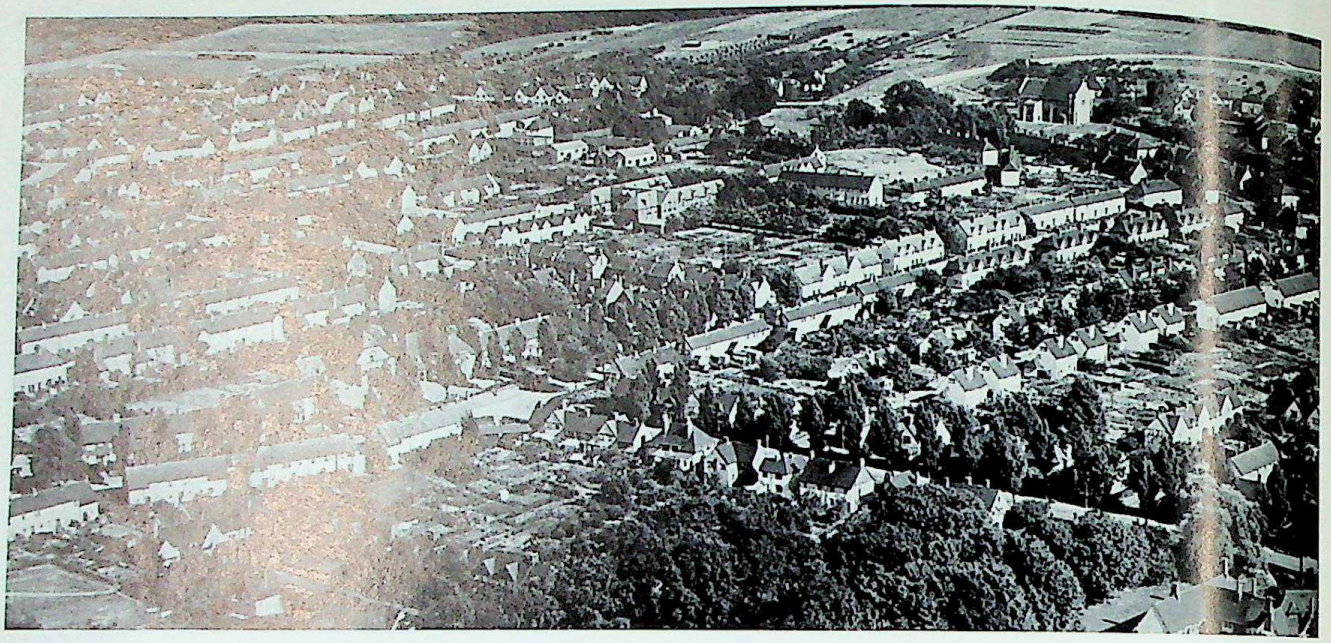


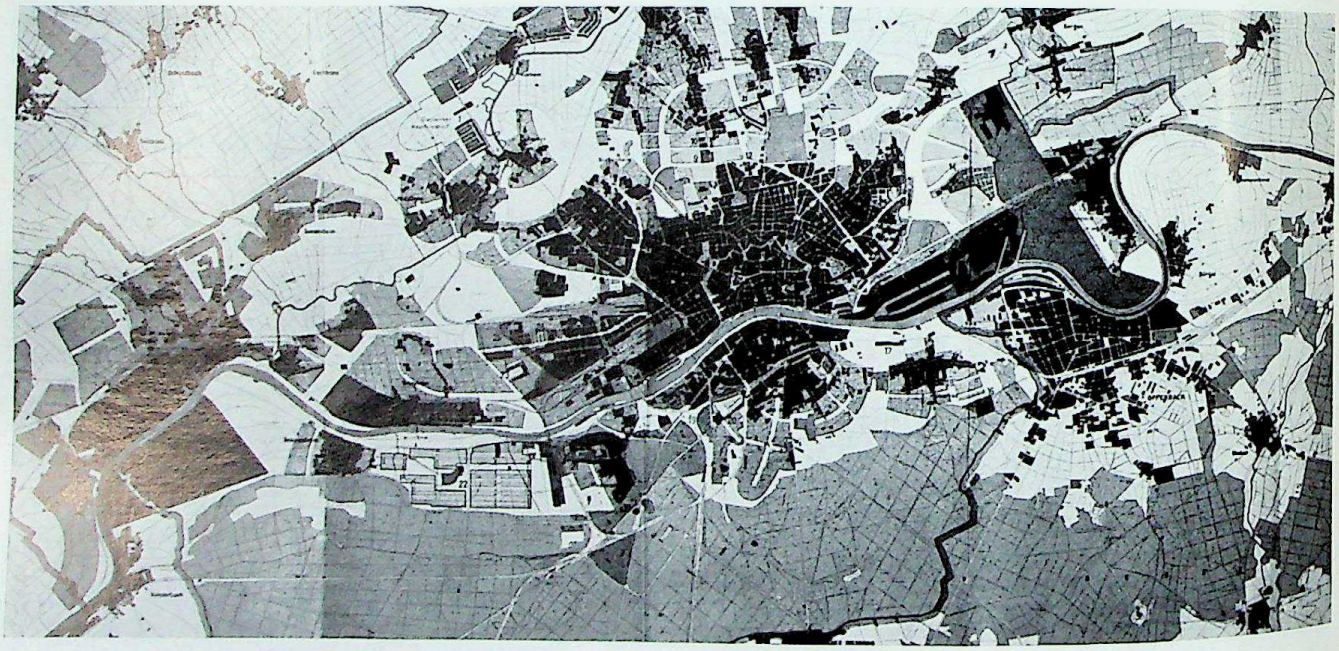


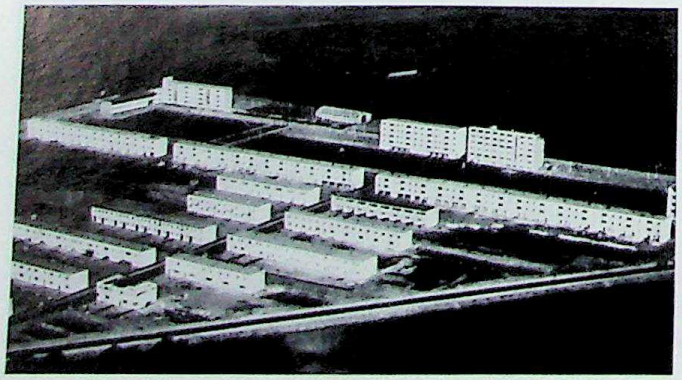


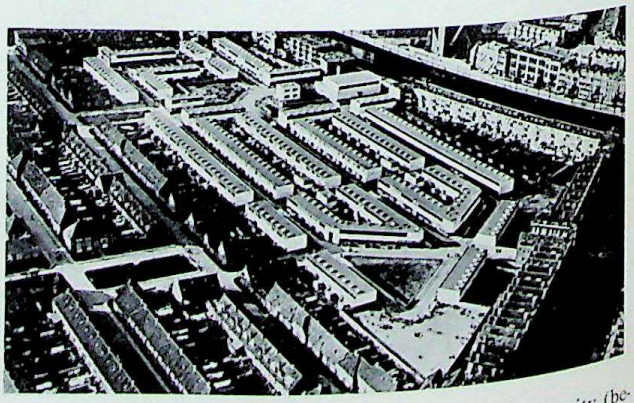
Pl. 147. Contemporary urban studies. *Left, above*: L. P. Abercrombie, the polycentric city, diagram for Greater London, 1944; Miljutin, the linear city, plan for Stalingrad, 1930. *Right*: F. L. Wright, the continuous horizontal city, model of Broadacre City, 1934. *Center*: L. Hilberseimer, the rationalistic city, 1933. *Below, left*: MARS group, ideal scheme for the reconstruction of London, 1938. *Right*: Kenzō Tange, plan for the linear expansion of Tokyo along a civic axis bridging Tokyo Bay, 1960.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



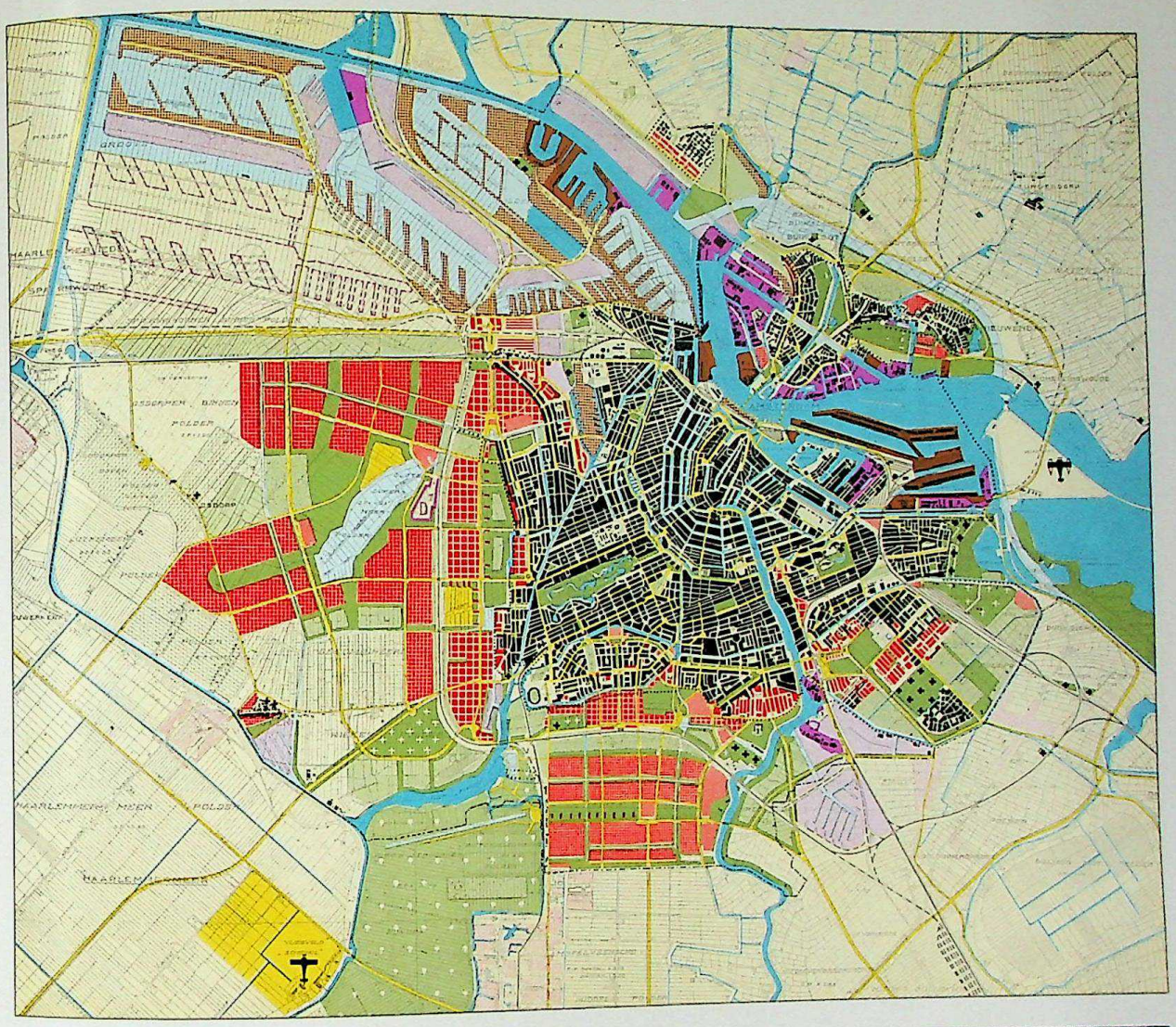


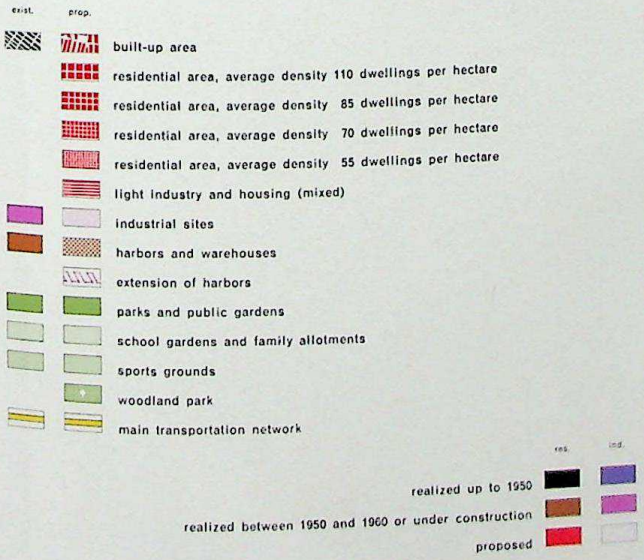


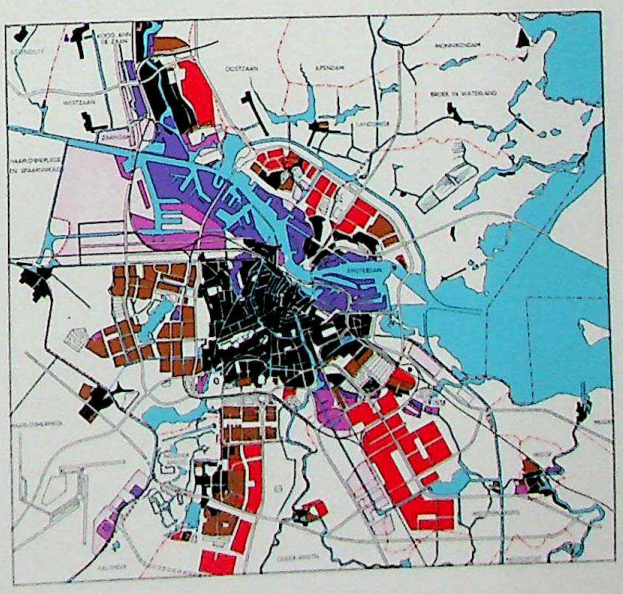


Pl. 148. Twentieth-century planning (1900–30). *Above*: B. Parker and R. Unwin, Letchworth, Hertfordshire, England, garden city (begun 1903), view toward southeast, early 1930s. *Center*: Frankfurt am Main, plan of the city with new residential districts, 1928. *Below, left*: W. Gropius, Karlsruhe, Dammerstock housing development, ca. 1928. *Right*: J. J. P. Oud, Rotterdam, Kiefhoek housing estate, 1925.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

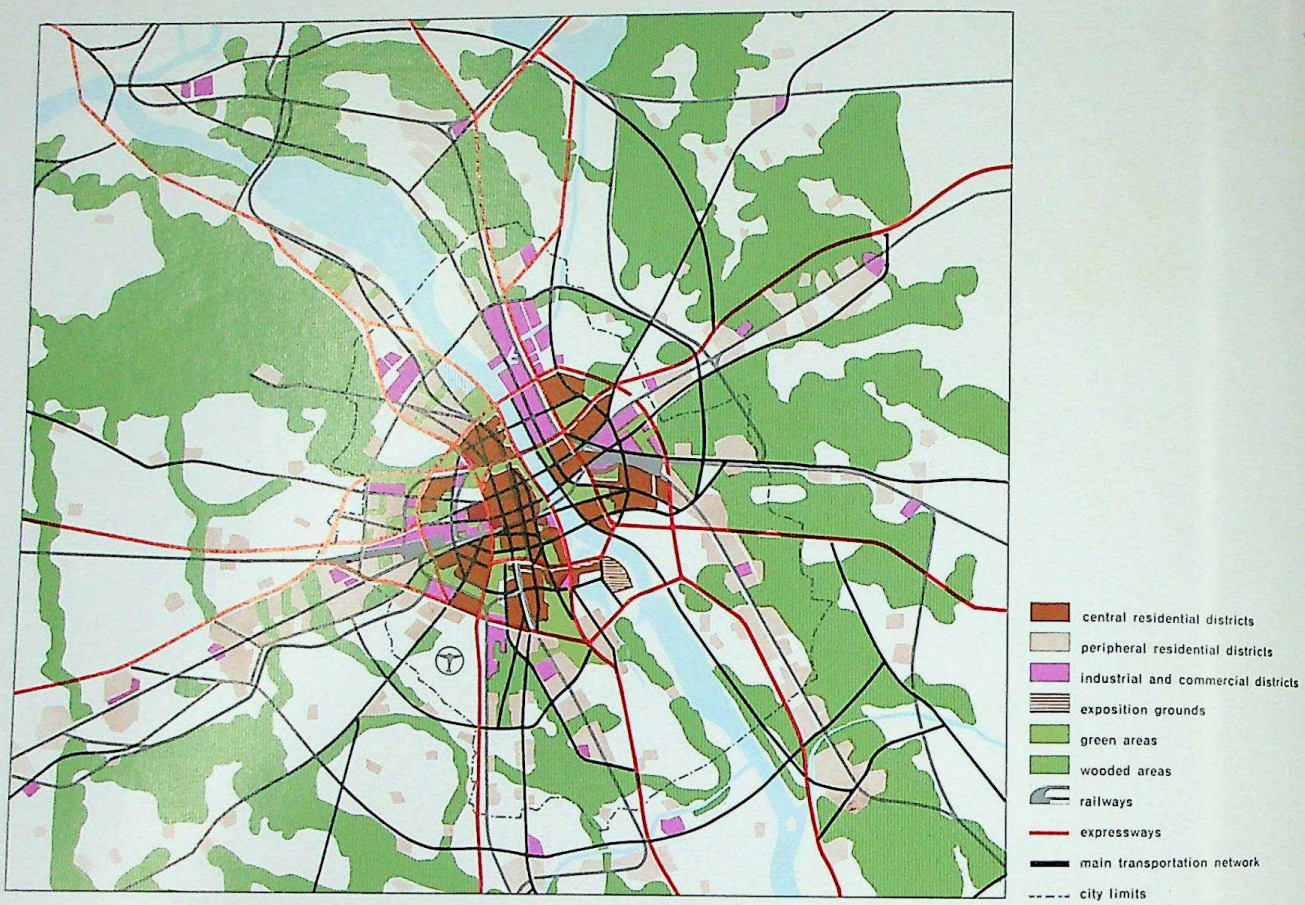


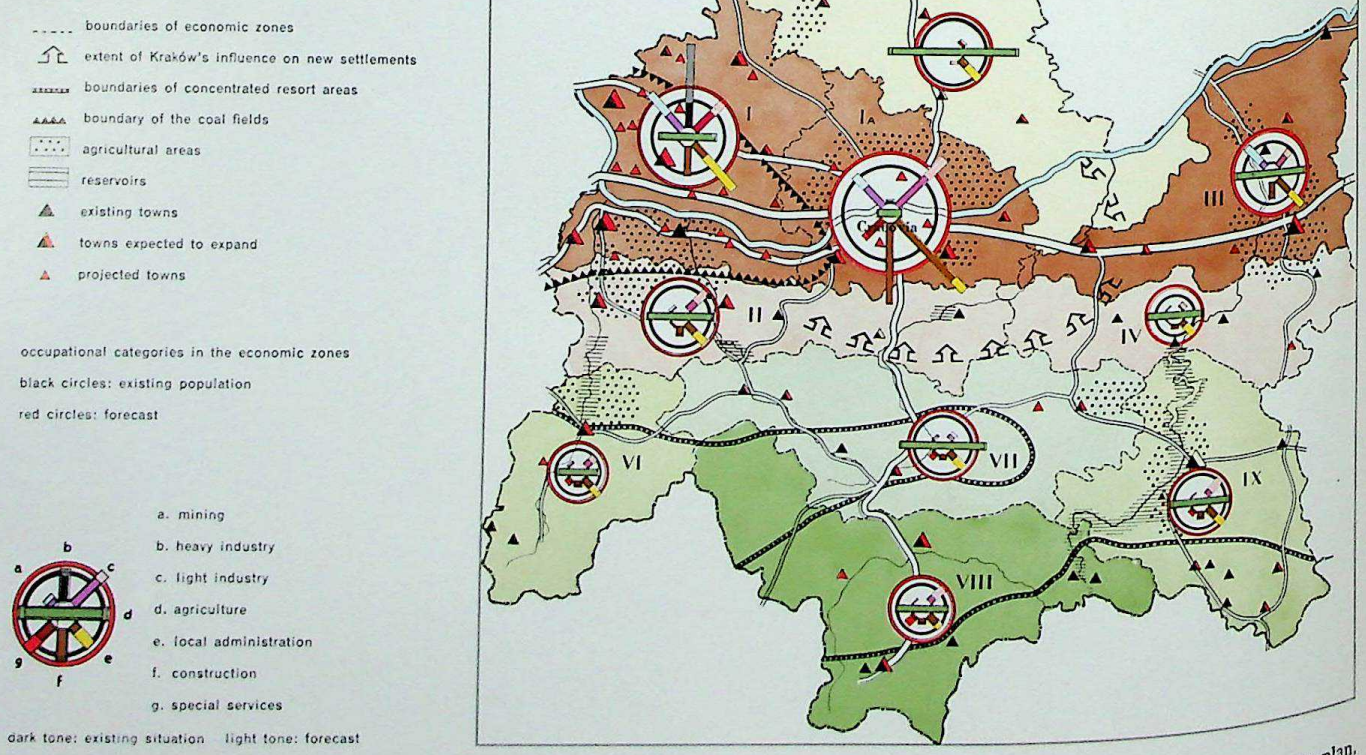




Pl. 149. Amsterdam. *Above*: Master extension plan, 1928–35. *Below*: Greater Amsterdam, 1960, showing residential and industrial areas.

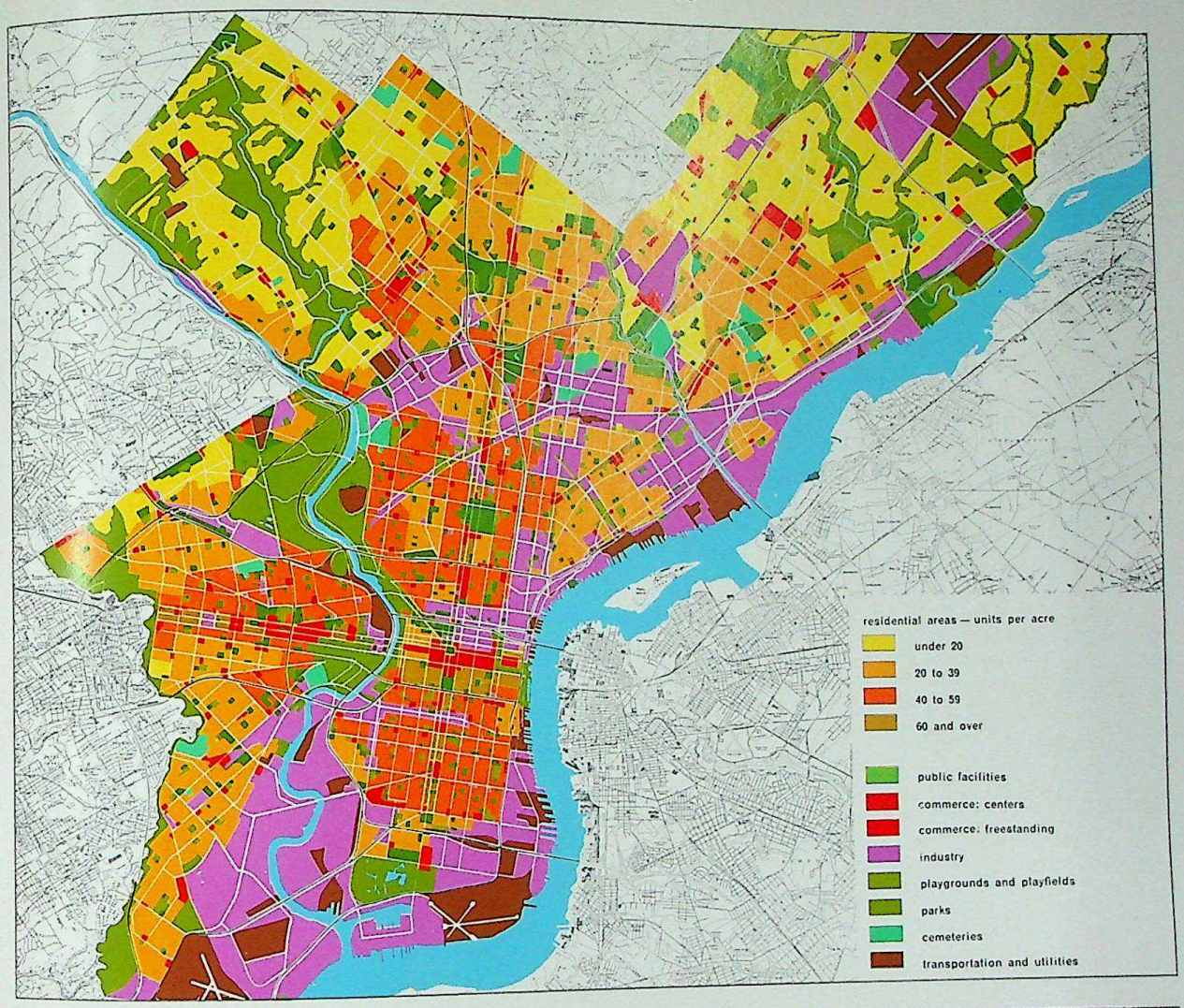
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

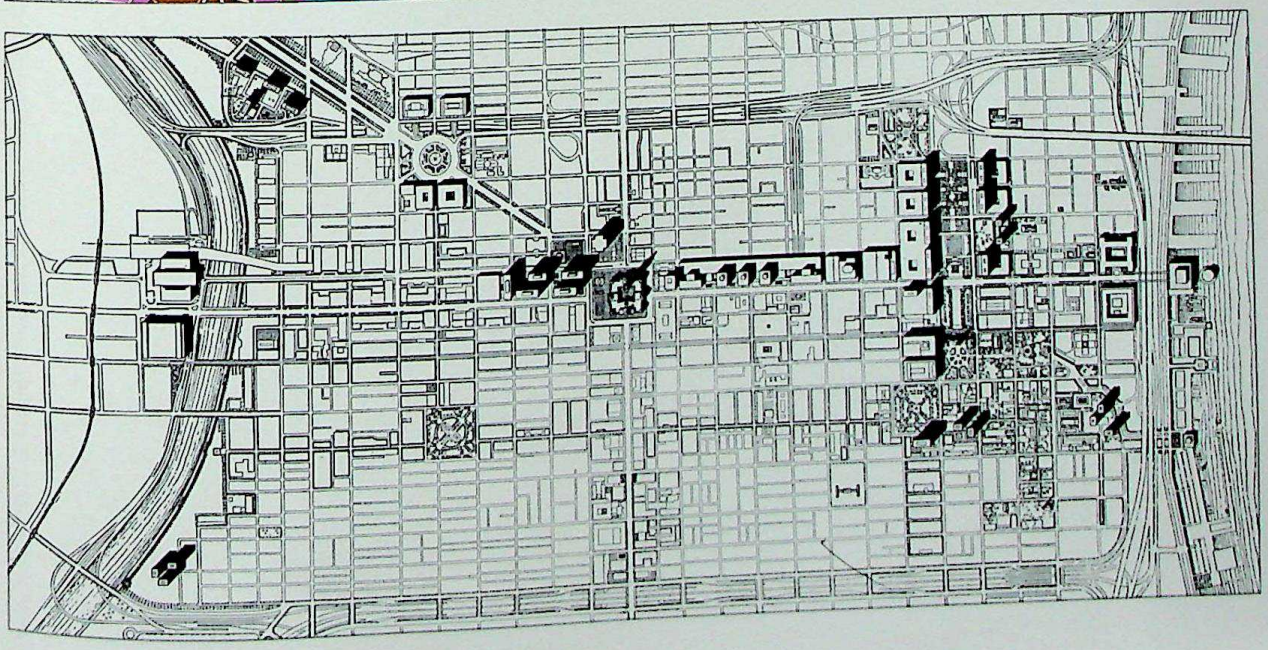




Pl. 150. *Above*: Warsaw, master extension plan, showing city and environs, 1959. *Below*: Department of Kraków, development plan, 1956.

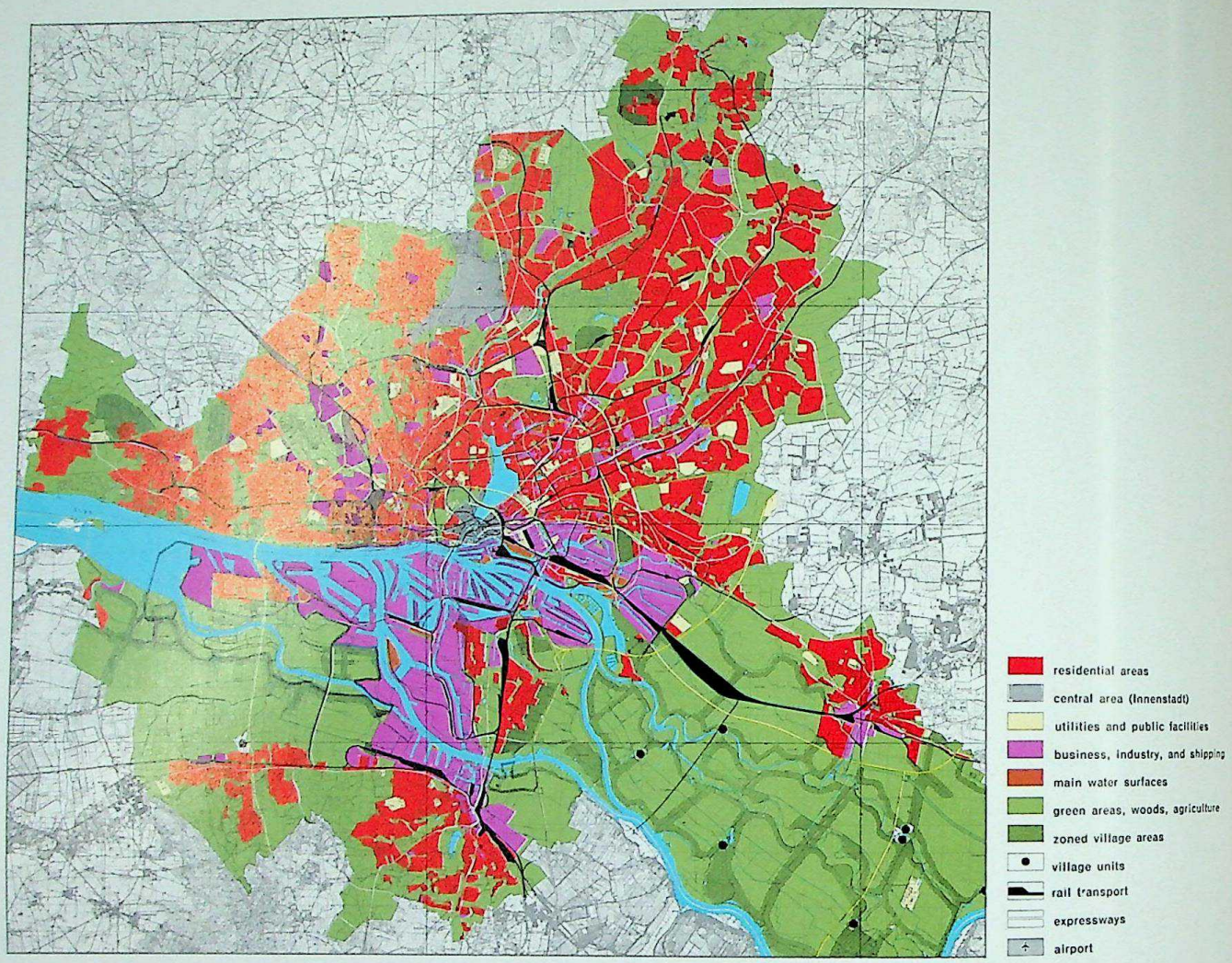
.CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

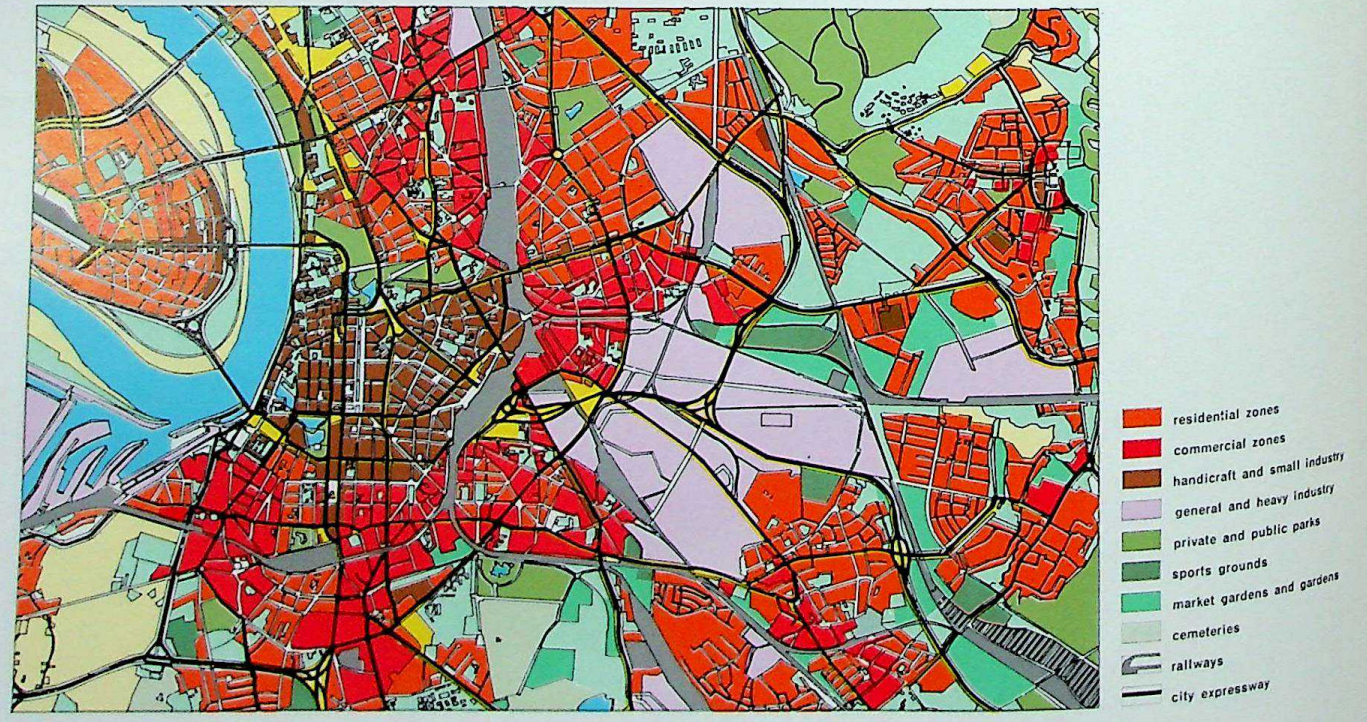




Pl. 151. Philadelphia. *Above*: The comprehensive physical development plan, 1960. *Below*: The downtown district, 1960.

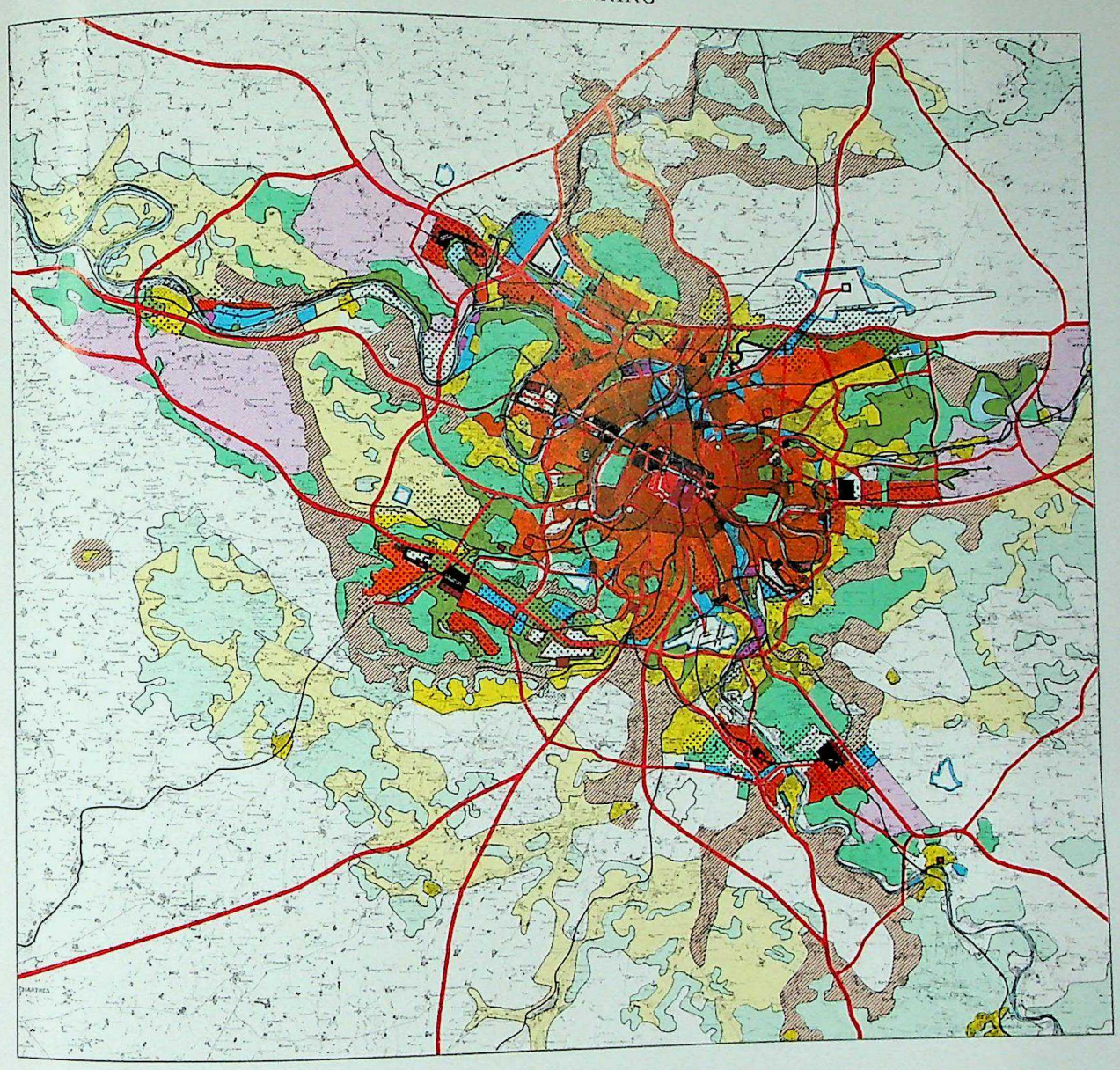
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 152. *Above*: Hamburg, general development plan, 1960. *Below*: Düsseldorf, general development plan, 1957.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



urban centers
administrative centers
university and cultural areas
higher education — research center
high-population residential zones
medium-population residential zones
low-population residential zones

zone for immediate urbanization
zone for urbanization (use to be established)
zone reserved for future planning
public utilities
areas of principal activity
urban green zones
urban wooded areas

woodlands
rural green zones
expressways and main highways and roads
railway
airport and zoned area
ZUP (priority development areas)
ZAD (deferred development areas)

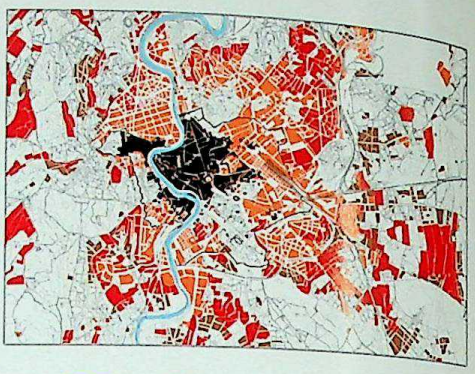
Pl. 153. Paris region, general plan for reorganization and urbanization, 1965.

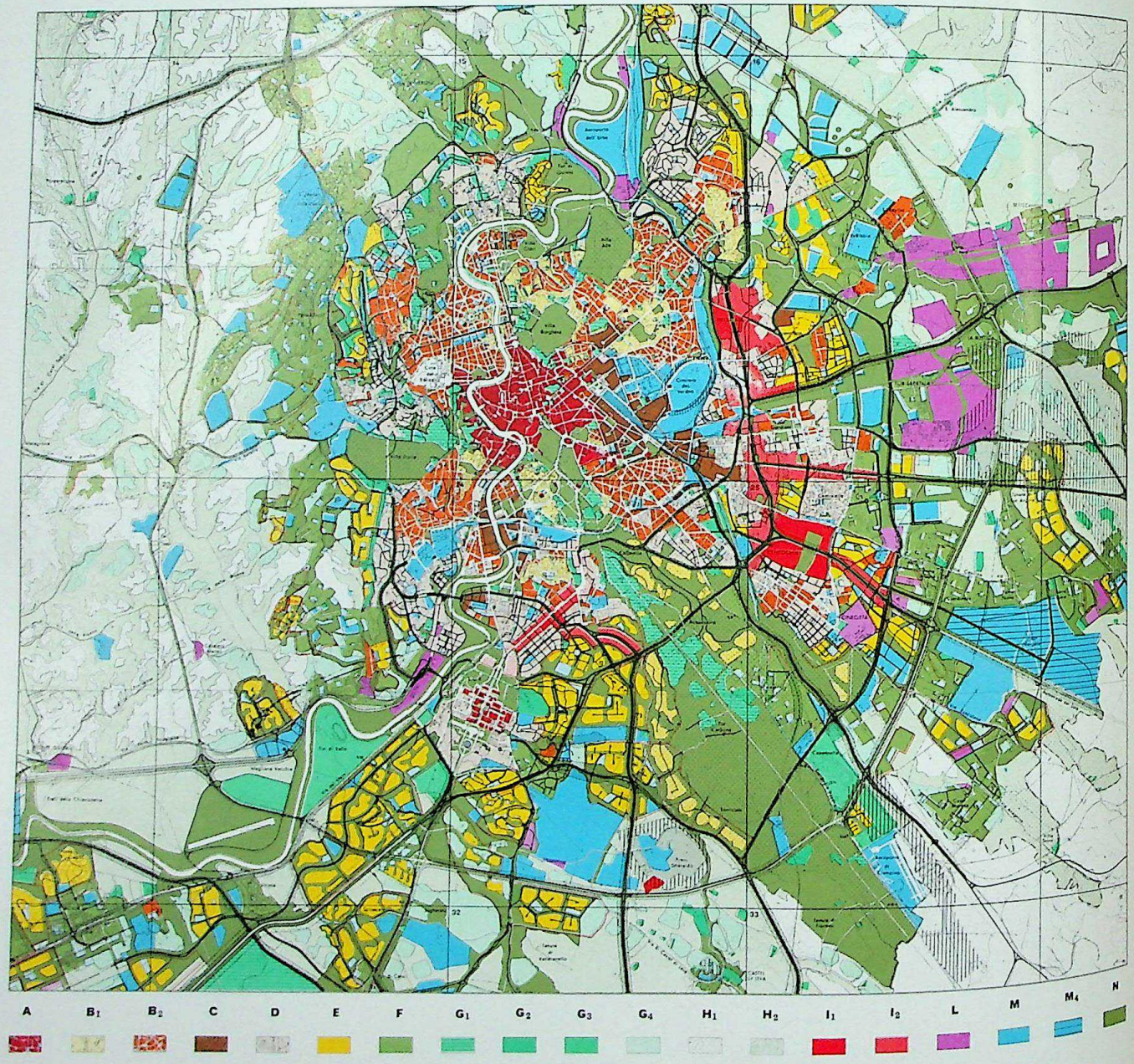
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

1

2

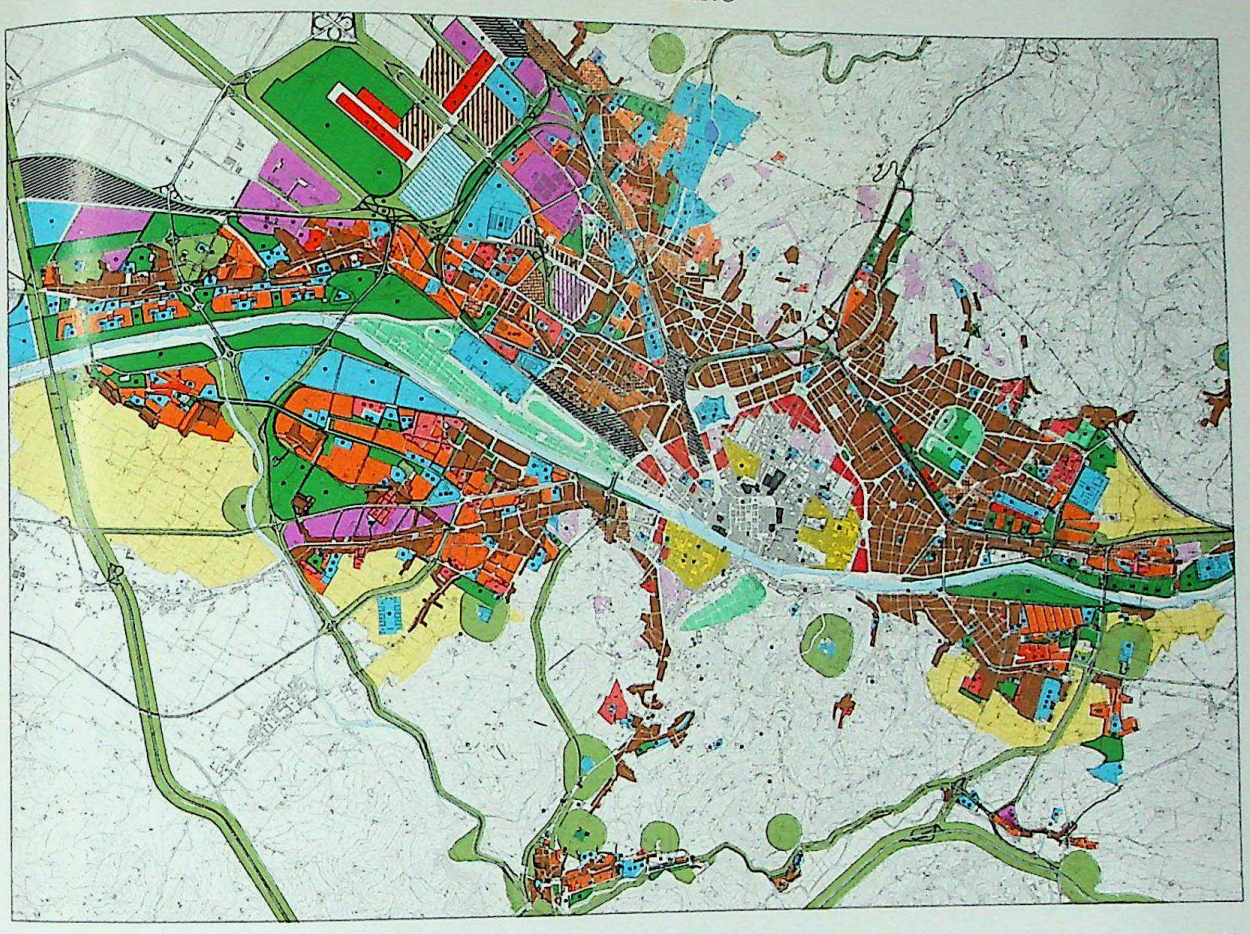
3

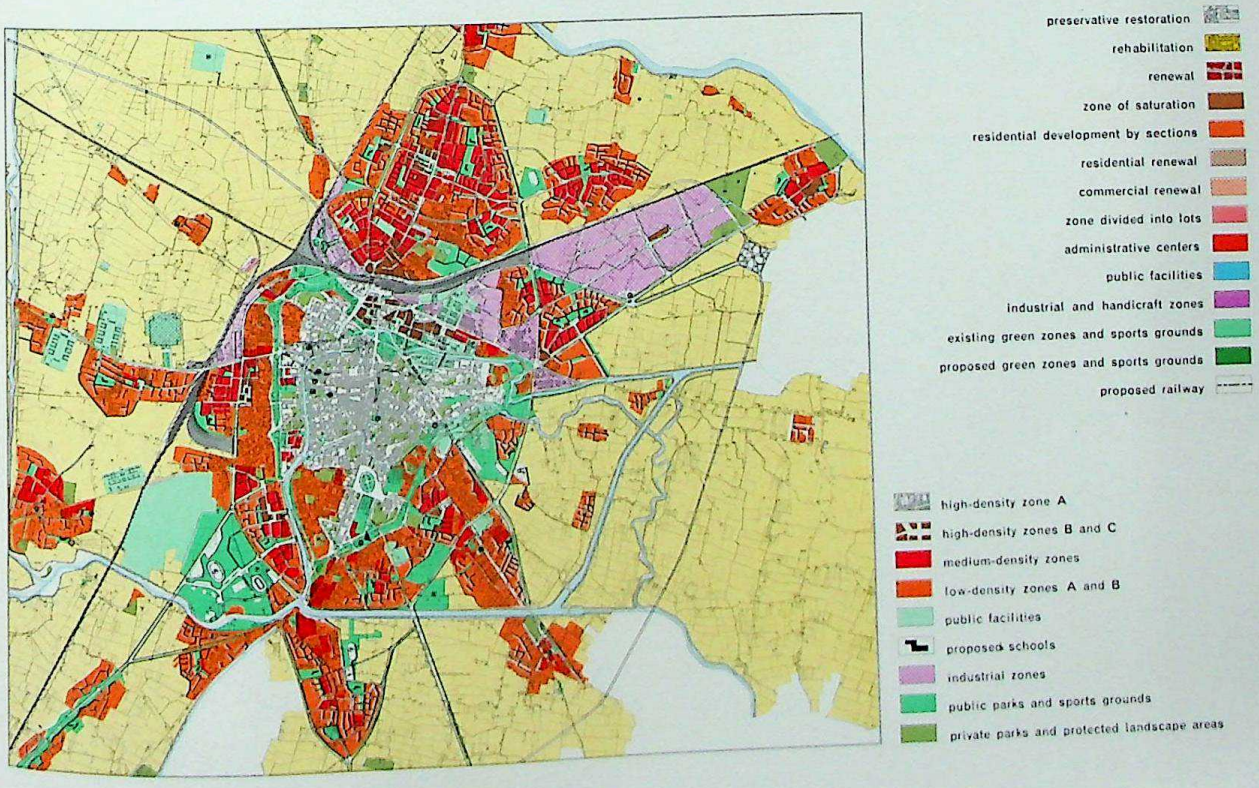

4



Pl. 154. Rome. *Above*: Stages in the development of the city. (1) Under the Empire, showing city walls and principal monuments. (2) The plan under Pope Sixtus V (1585–90). (3) The plan of G. B. Nolli (1748). (4) The phases of development after 1870: in 1930, in 1950, and in 1957. *Below*: Master plan of the central sector, approved 1962. (A) preservation, restoration, and rehabilitation; (B_1 B_2) buildings restricted to existing volume, plot coverage, and (for B_1) silhouette; (C) construction, and reconstruction in varying scale; (D) completion according to regulations of 1931; (E) development within various restricted categories; (F) urban renewal; (G_1) zoned private parks; (G_2) private parks; (G_3) private gardens; (G_4) one-family houses with garden; (H_1) rural area; (H_2) zoned rural area; (I_1) main business centers; (I_2) special construction; (L) industry; (M) public facilities; (M_4) new university city; (N) public parks and sports areas.

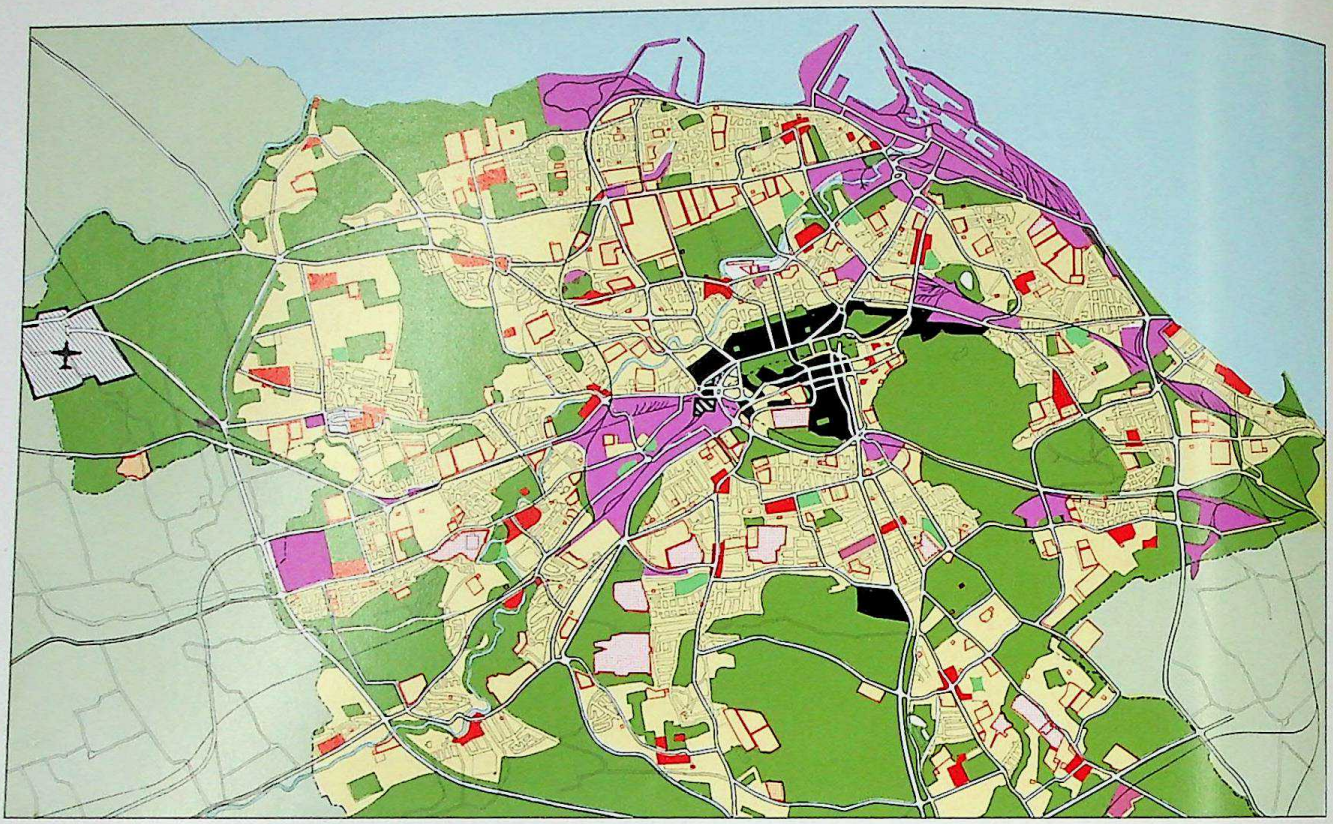
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



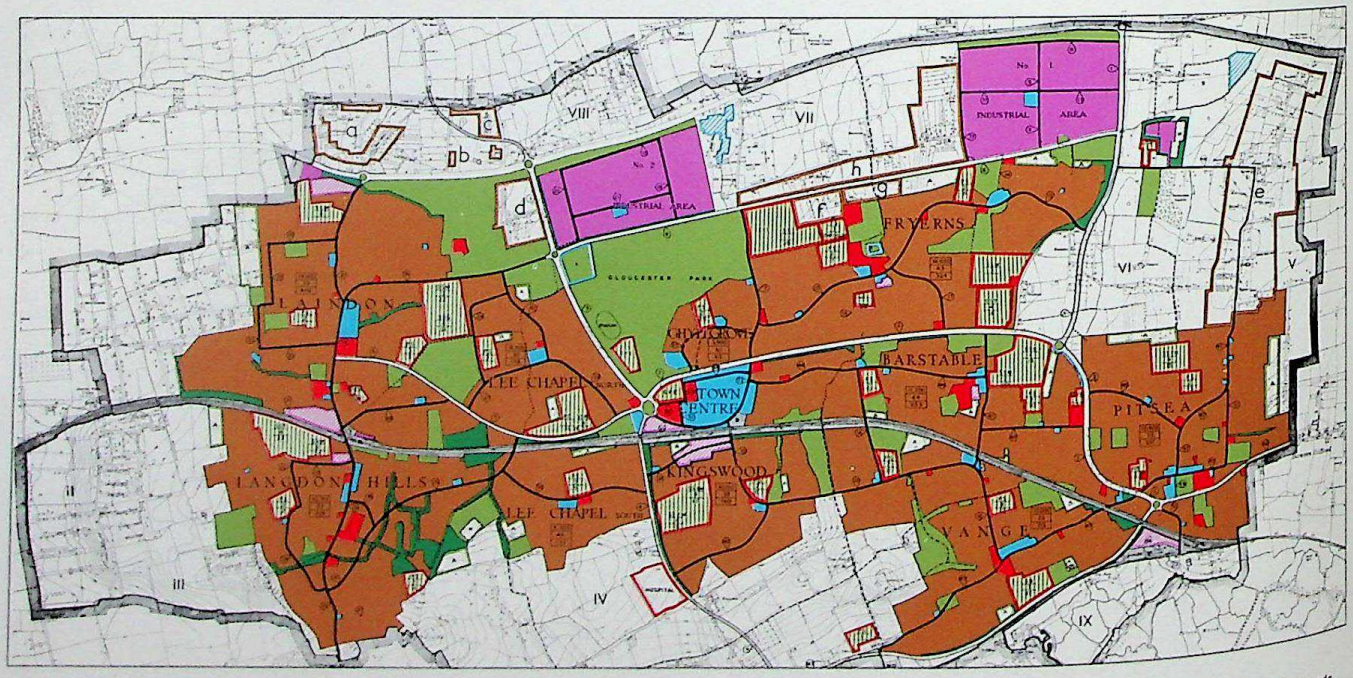


Pl. 155. *Above*: Florence, master plan, approved 1962. *Below*: Padua, master plan by L. Piccinato, approved 1964.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



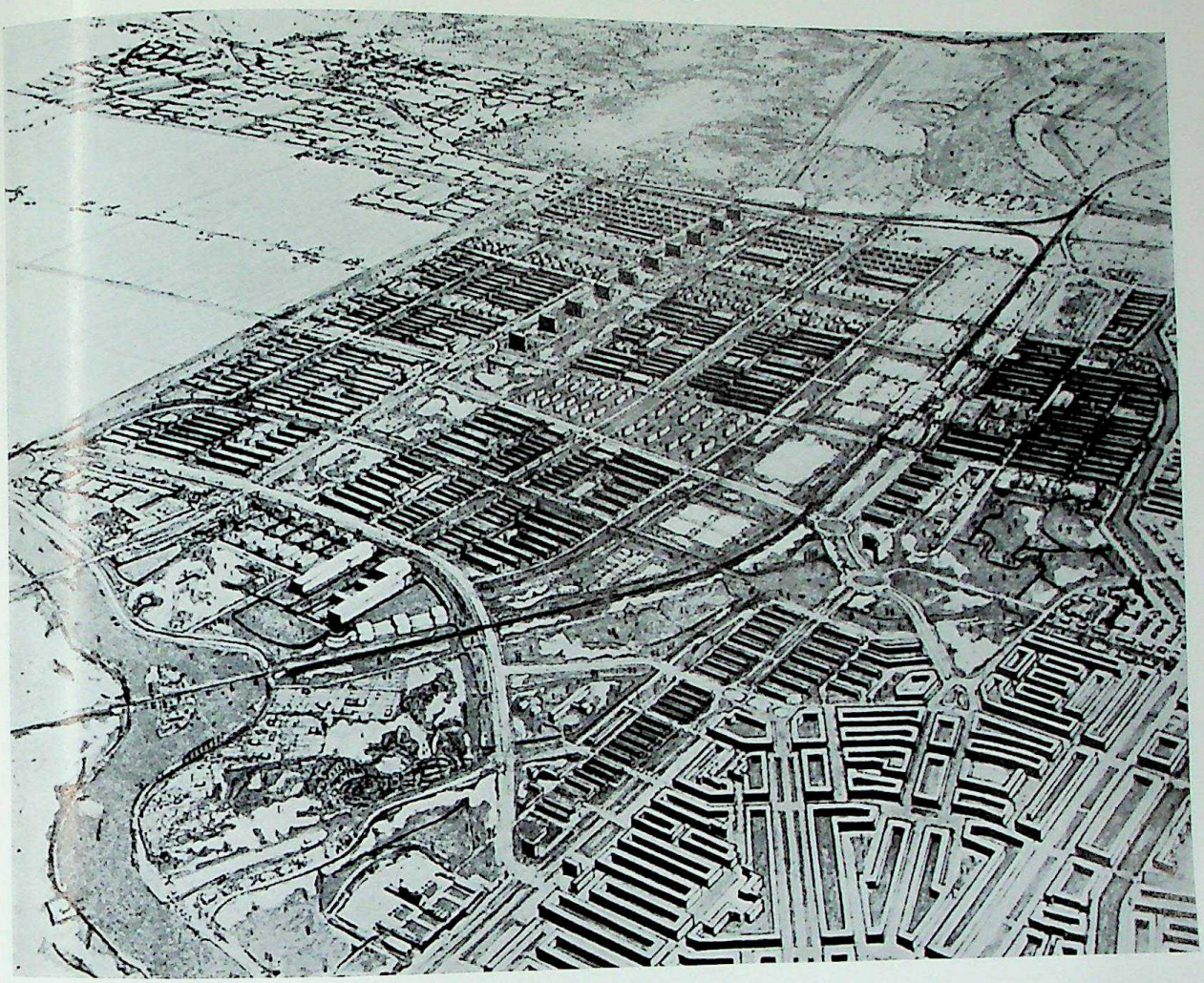
residential expansion
neighborhood centers and other proposed facilities
proposed cultural and administrative centers
school facilities
hospitals and public facilities
industrial areas
green zones
rural zones beyond city boundary
proposed railway station

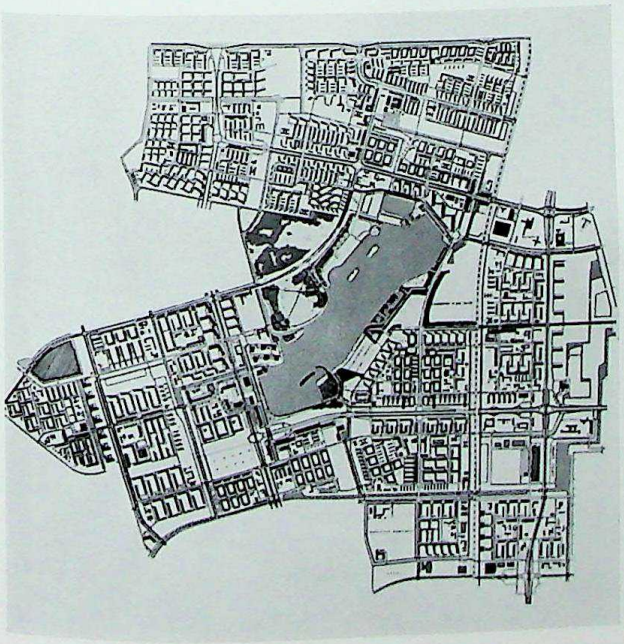


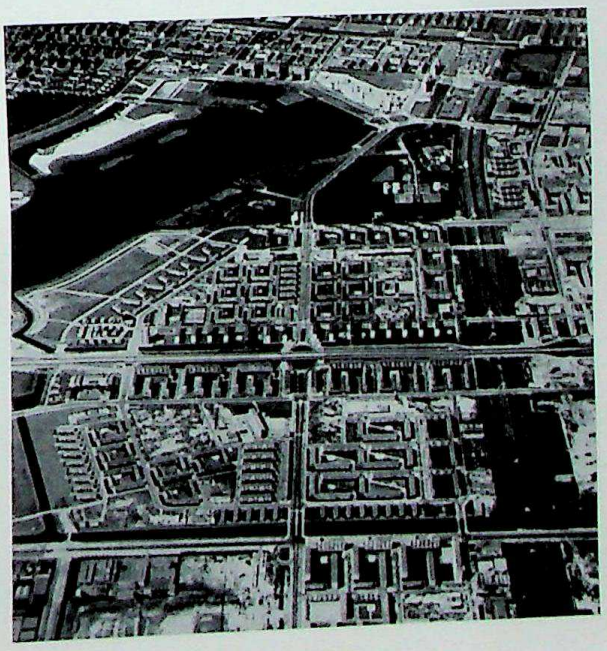
residential areas
cultural and administrative buildings
school facilities
shops and business
industrial areas
service industry
open spaces and games areas
market gardens
woodlands and planting
small rural holdings
sewage purification plants
major roads
secondary roads
cycle tracks
footpaths

Pl. 156. *Above*: Edinburgh, proposals for general development by L. P. Abercrombie and D. Plumstead, 1947. *Below*: Basildon New Town, Essex, England, city plan by A. B. Davies, 1949. Indicated in the residential areas: (1) the population; (2) the net residential density; (3) the net area per inhabitant.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

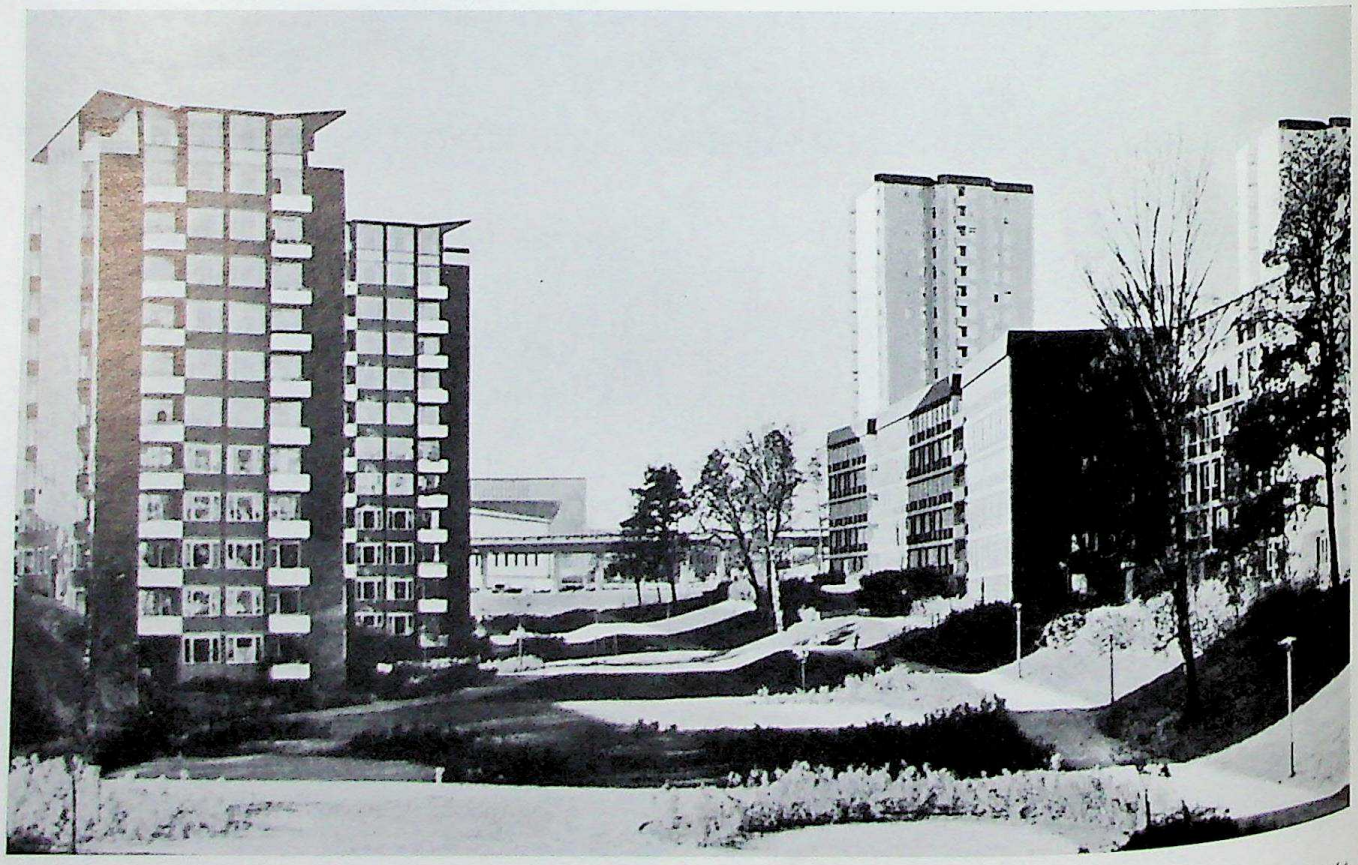






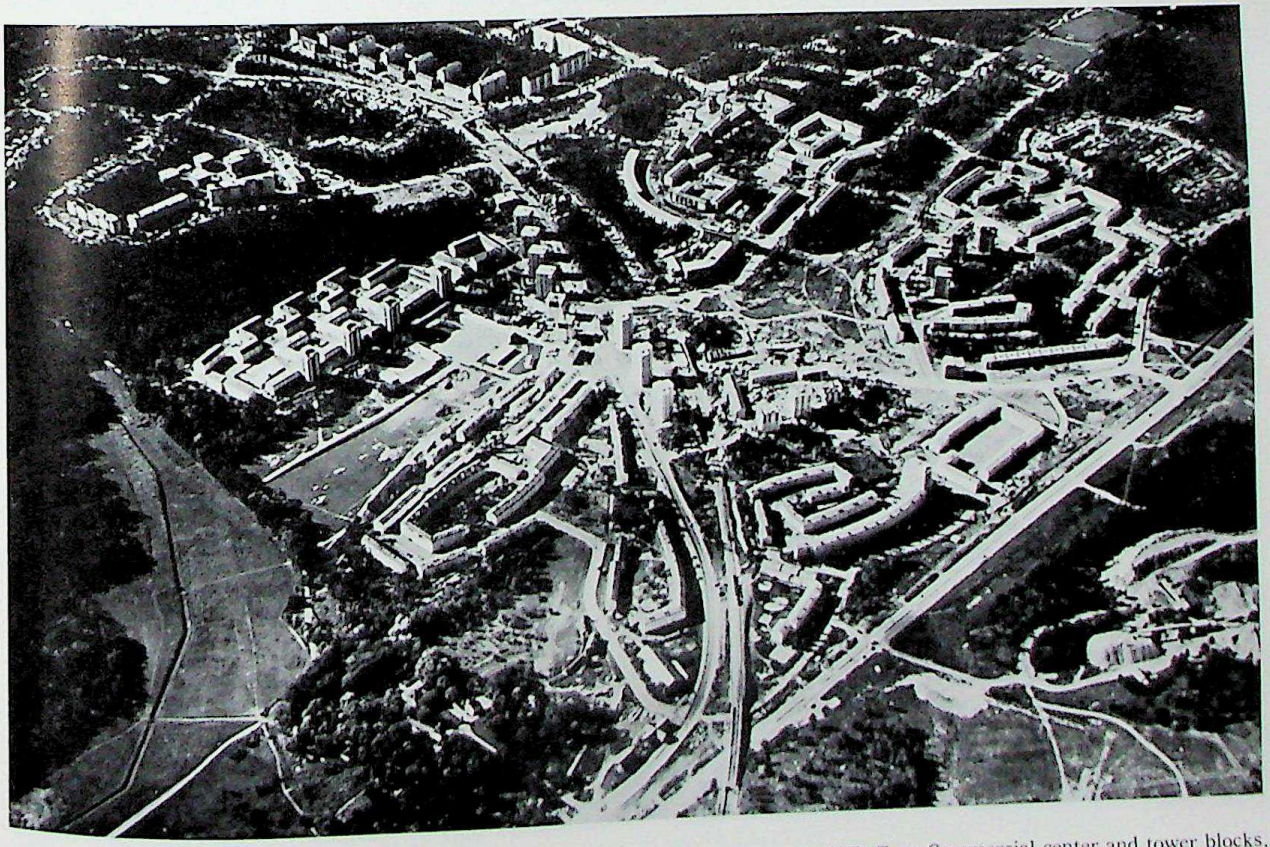
Pl. 157. Amsterdam, master extension plan (cf. Pl. 149). *Above*: Plan for Amsterdam South, 1935. *Below, left*: Detailed plan for the expansion of Amsterdam West, realized 1950–64. *Right*: Slotervaart district, 1954.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



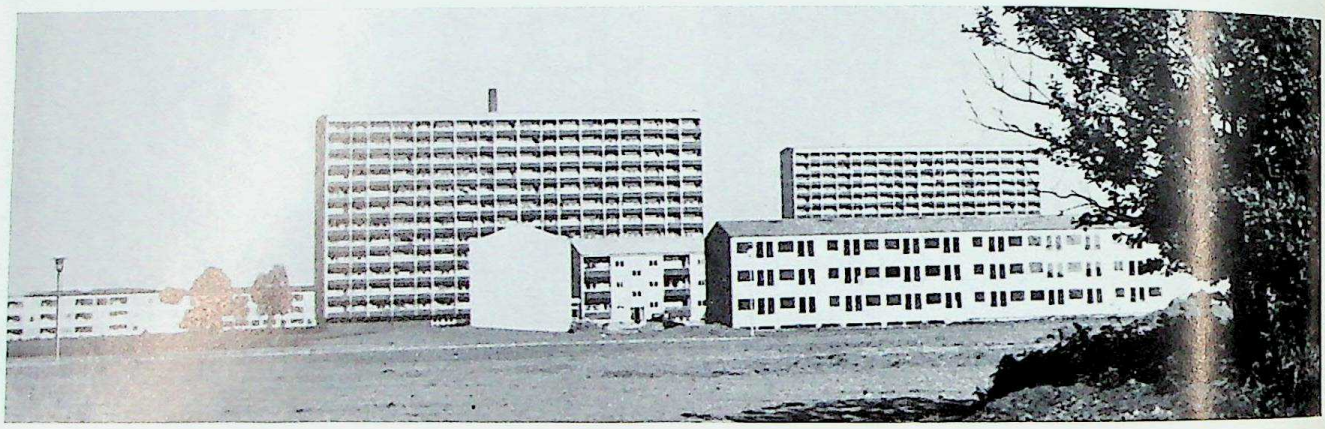
Pl. 158. Sweden. *Left, above*: Lidingö, view of a district projected 1945–46 by S. Ancker, B. Gate, and S. Lindegren. *Left, center; right, above; and below*: Farsta, "town section" of Stockholm. Commercial center, projected by S. Backström and L. Reinius; quatrefoil 16-story apartment buildings; view from northeast.

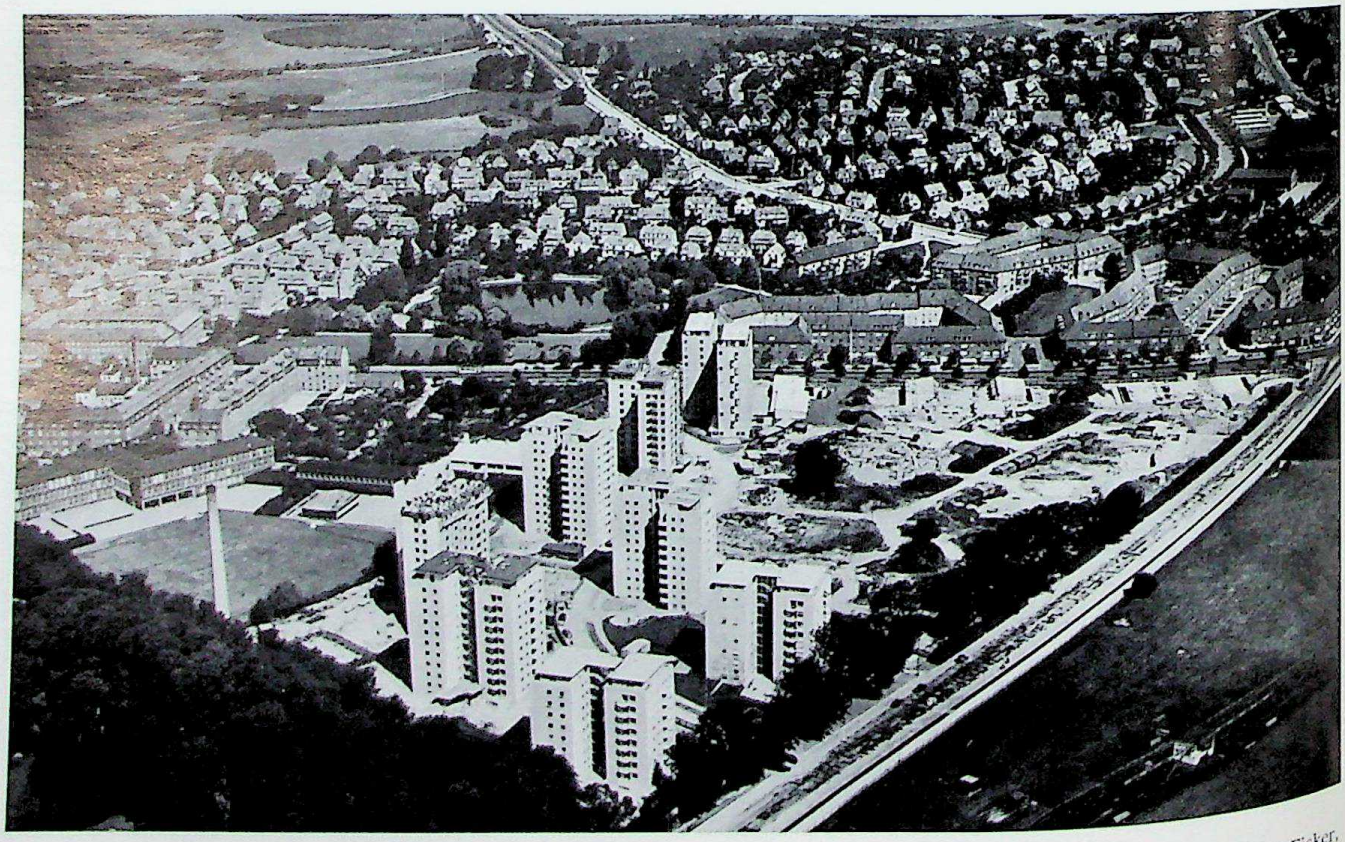
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 159. Sweden, "town sections" of Stockholm. *Above and center*: Vällingby, begun 1953. *Top*: Commercial center and tower blocks, projected by S. Backström and L. Reinius. *Center, left*: The Atlantis residential center, by Höjer, Ljungqvist, Stäck, and Karlen. *Right*: Apartment houses in the northern sector, by P. Hedqvist. *Below*: Hässelby Gård, aerial view.

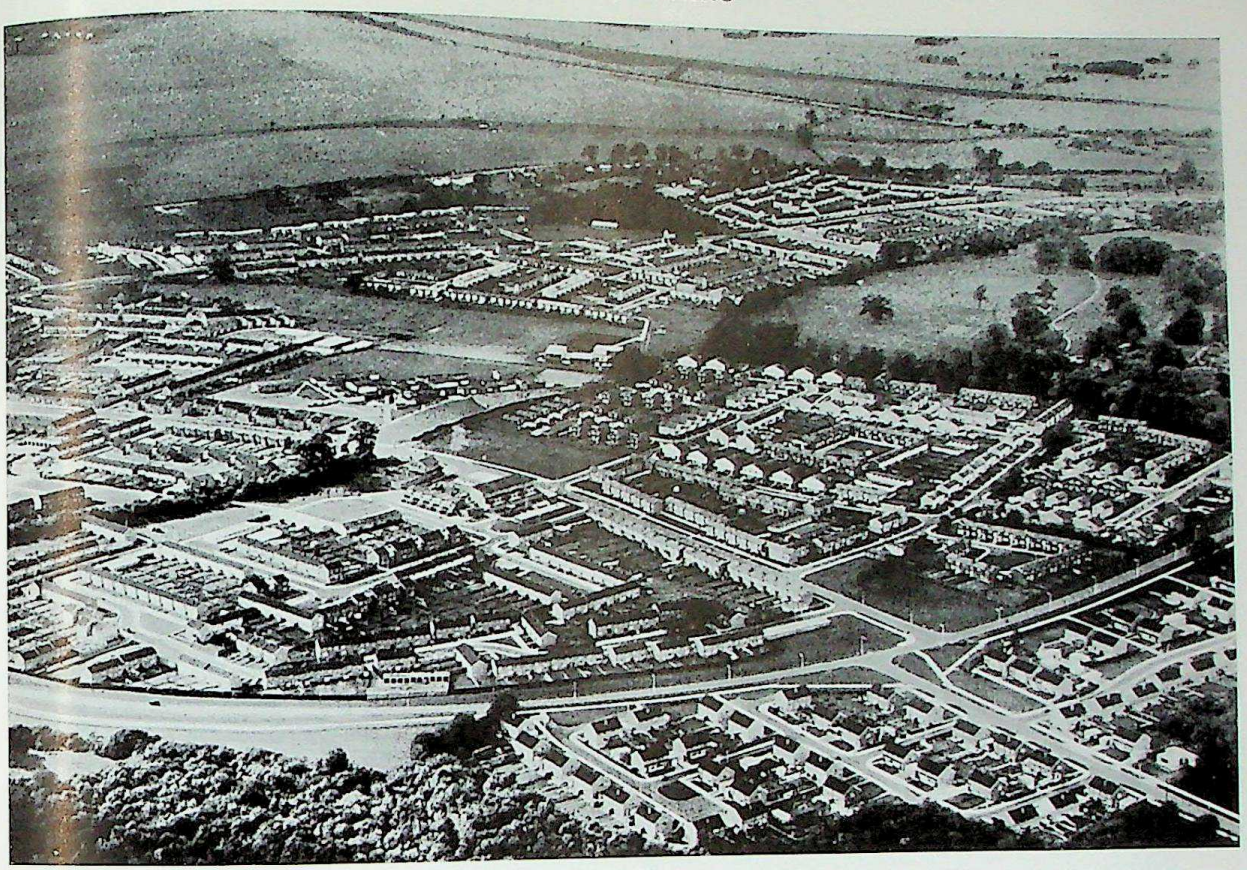
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

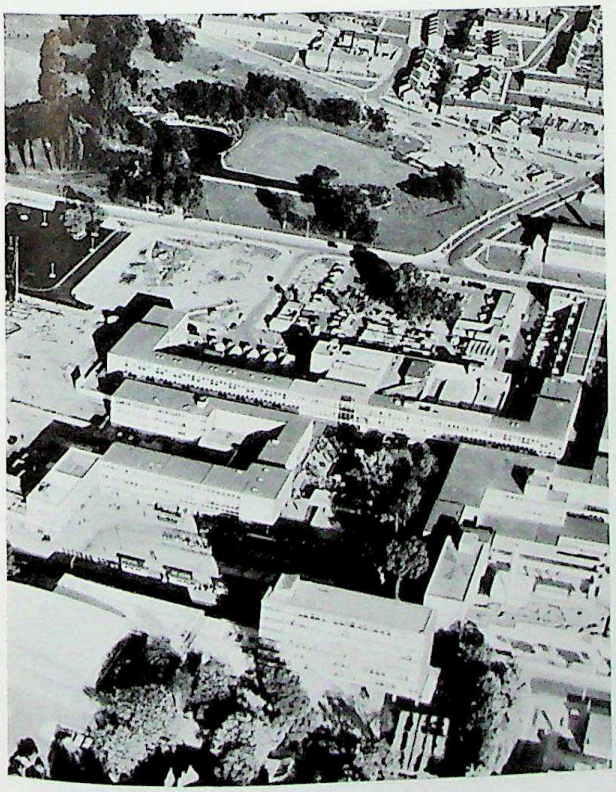




Pl. 160. Copenhagen. *Above*: Bredalsparken, projected 1949 by E. Kristensen. *Center*: Nygårdsparken, projected 1955 by Fisker, Högsbroe, Kristensen, Milthers, Möller, Ramneskow, and Sörensen. *Below*: Bellahöy, view showing prefabricated apartment houses, 1951.

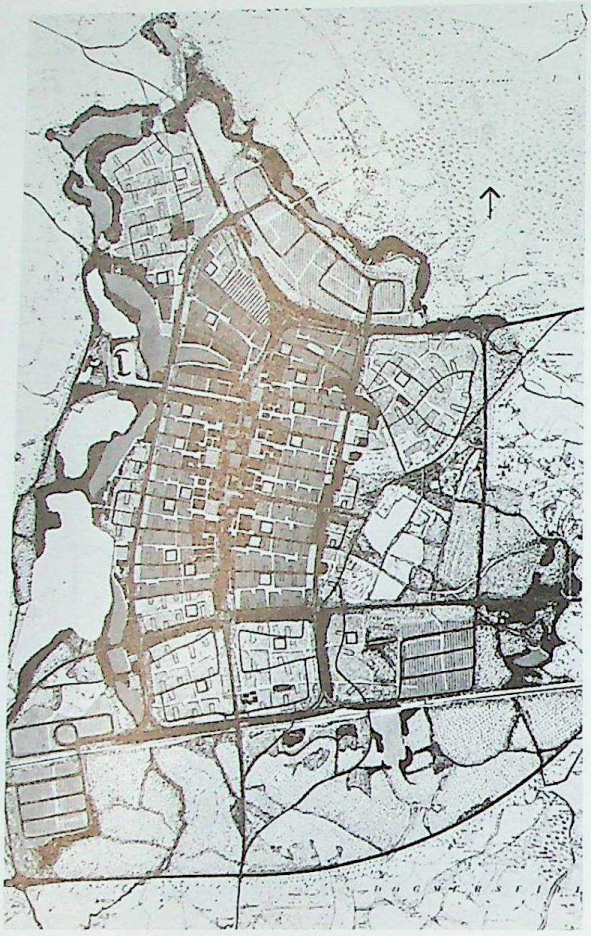
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

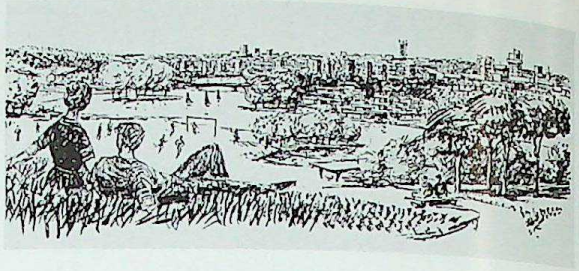


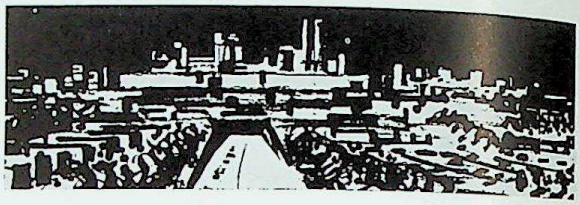


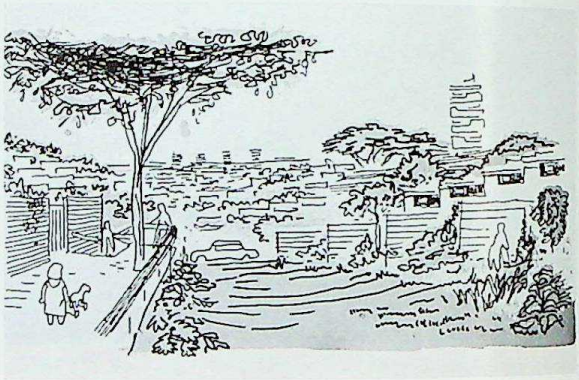
Pl. 161. Stevenage New Town, Hertfordshire, England, by L. G. Vincent, begun 1946. *Above*: Residential area. *Below, left*: Civic center with warehouses and shops. *Right*: Town Square.

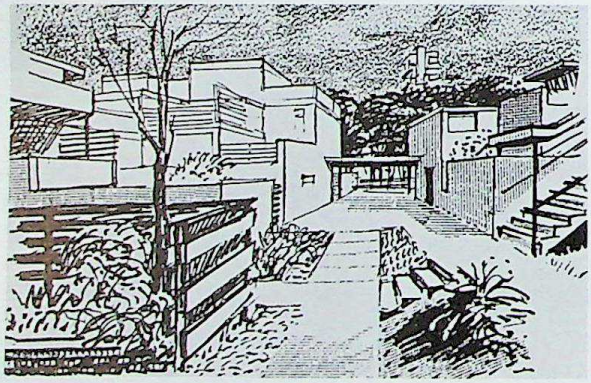
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





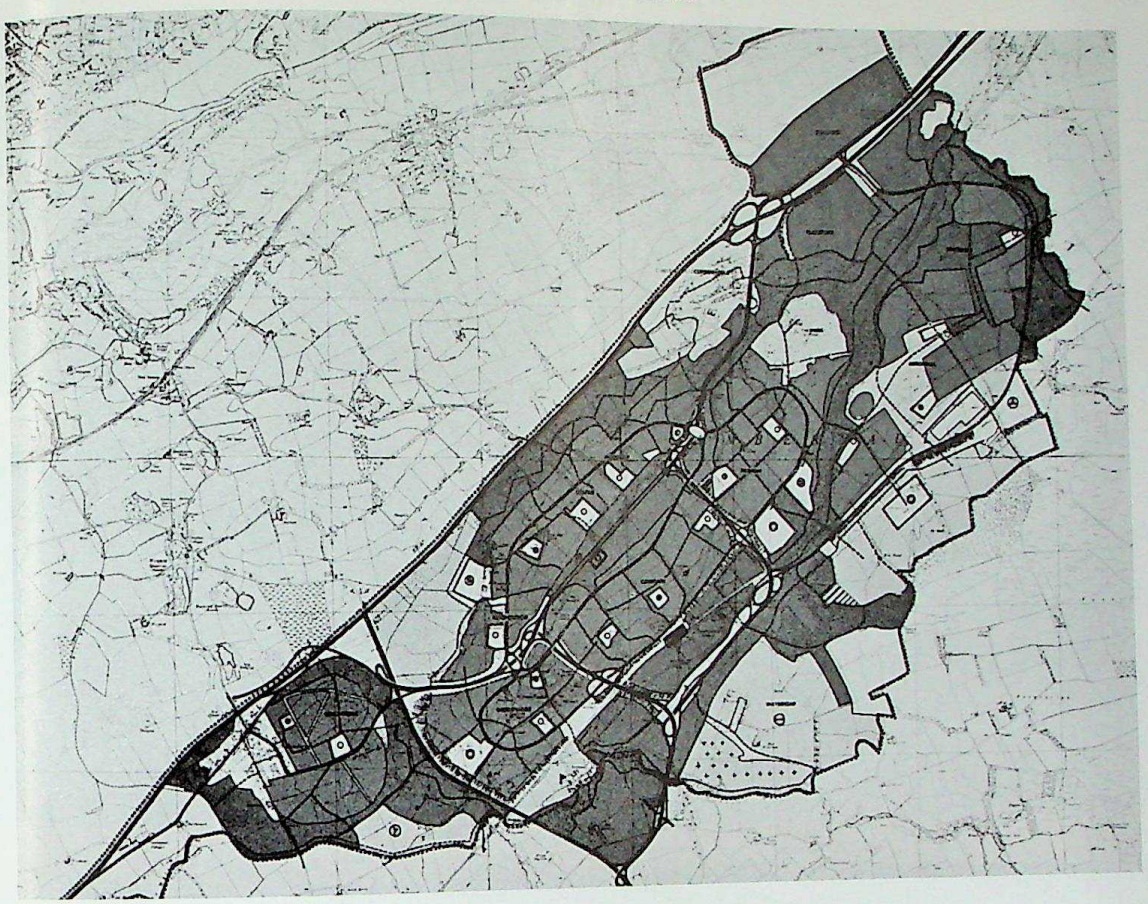


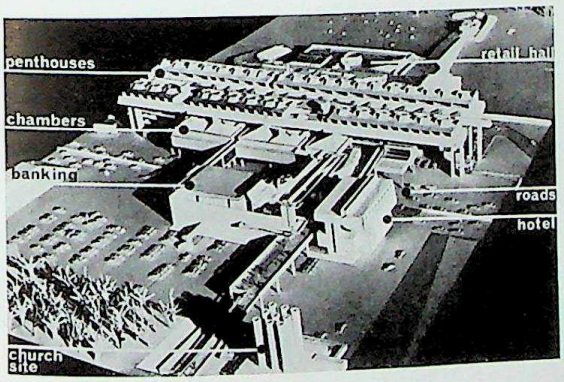


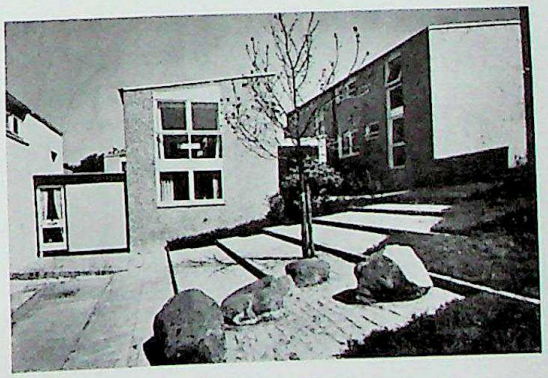


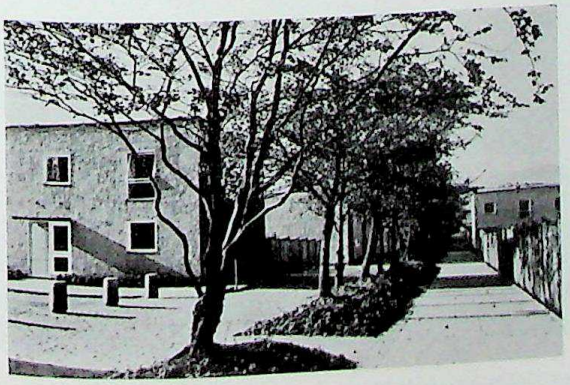
Pl. 162. England. *Above and center*: Hook, New Town projected in the 1950s by the London County Council, over-all plan and prospects. *Below*: Roehampton Estate, London, low-cost housing development, built by the London County Council, 1952–55.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



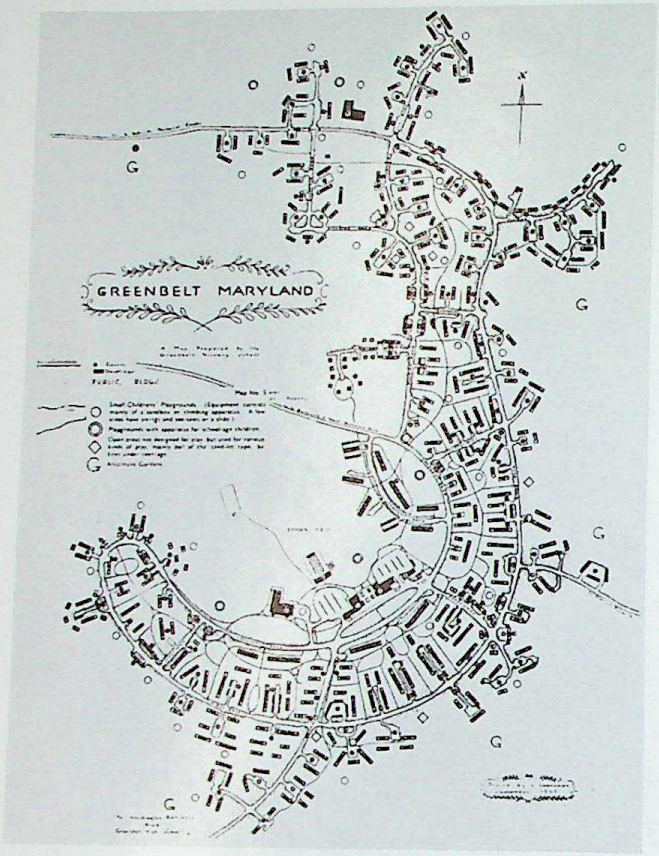


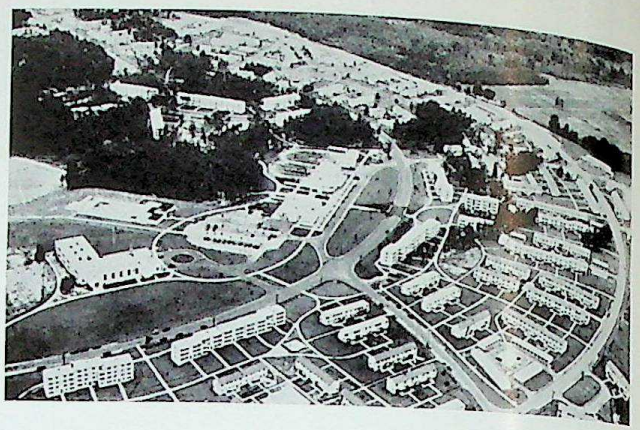


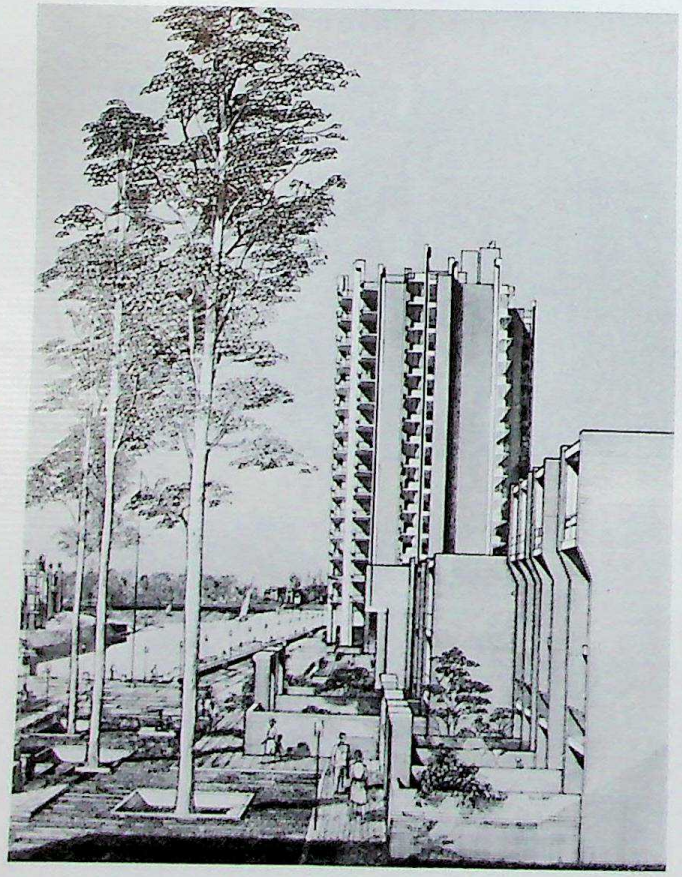


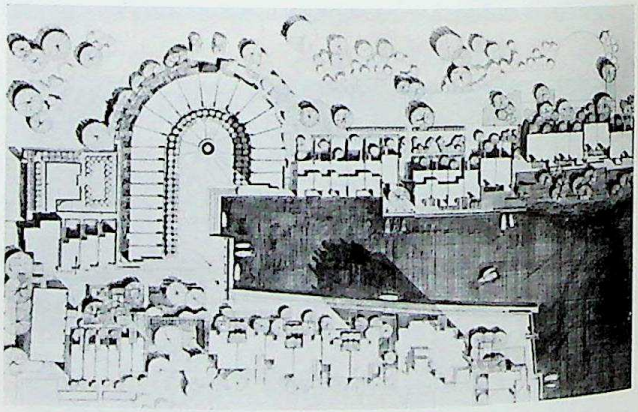
Pl. 163. Cumbernauld, Scotland. *Above*: General plan, 1956. *Center, left*: Model of the first phase of the realization of the urban center. *Right, and below*: Three views of the residential districts.

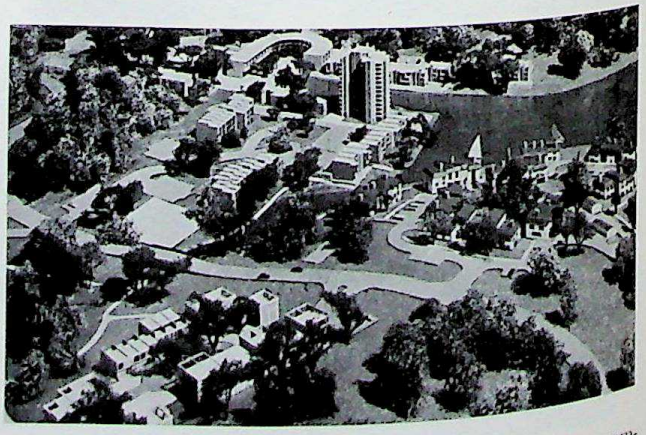
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





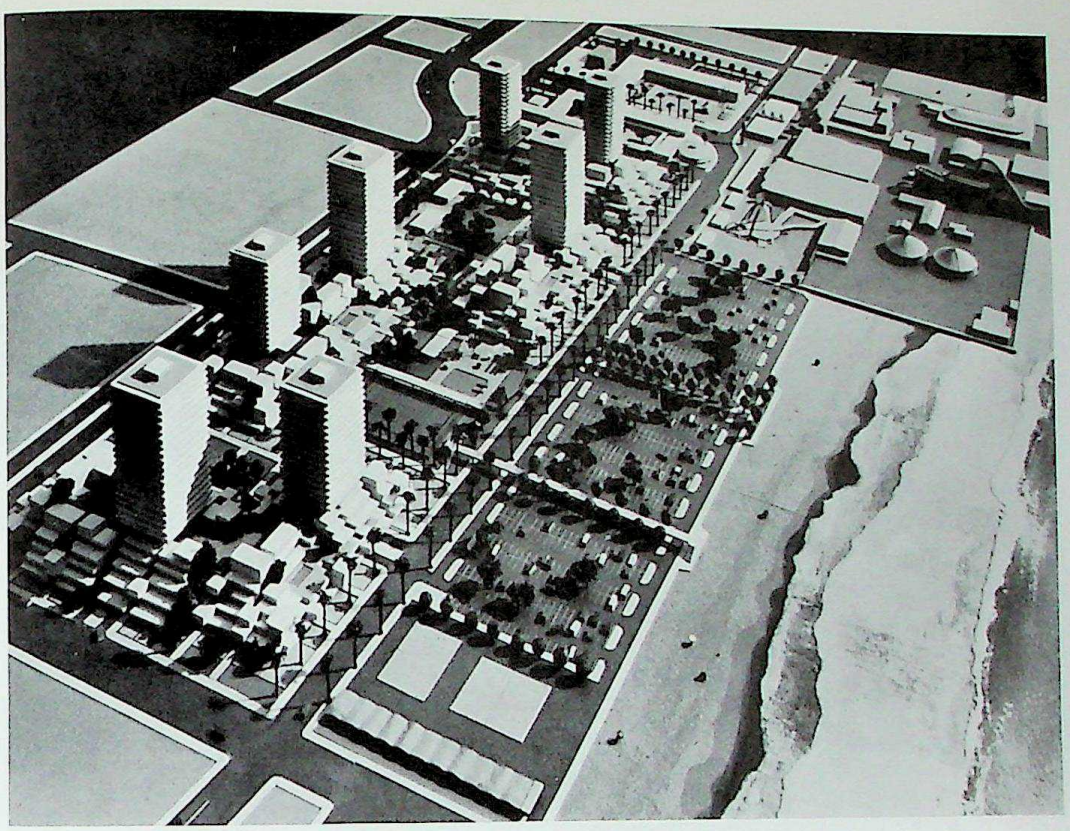


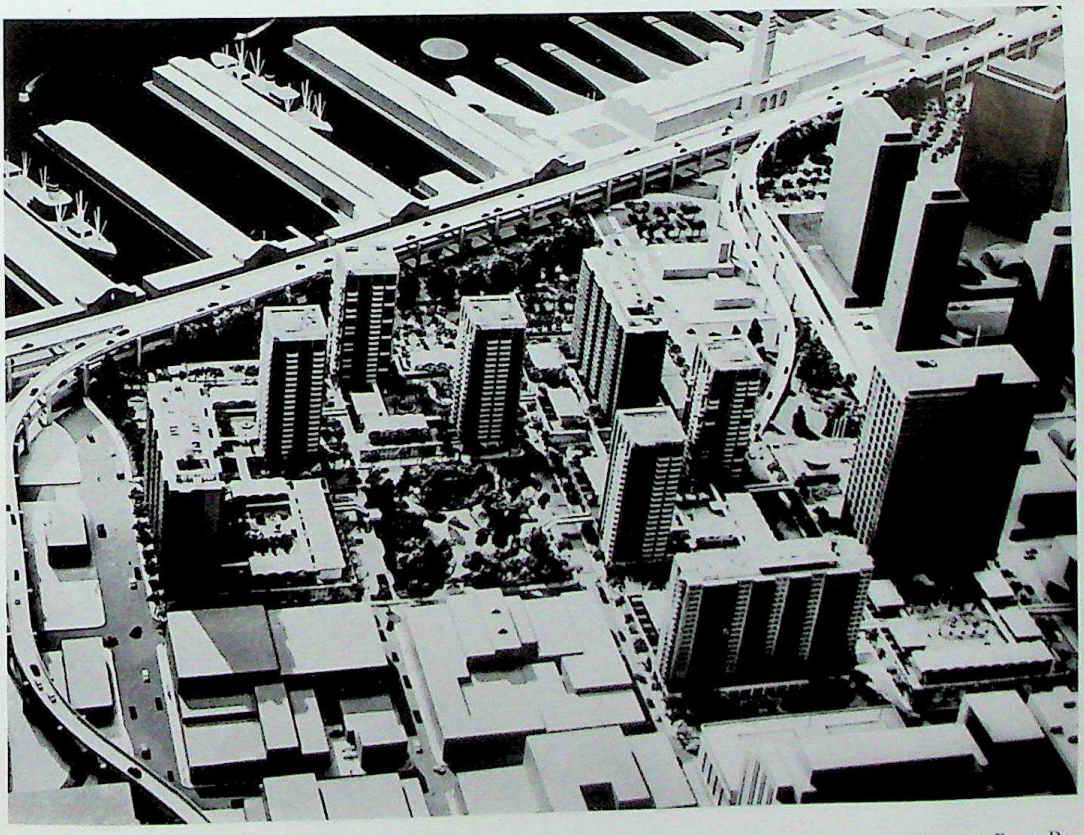




Pl. 164. American New Towns. *Above*: Greenbelt, Md., projected 1935 by H. Walker. *Left*: General plan. *Right*: Aerial view after completion and detail of a residential area, 1935–38. *Below*: Reston, Va., projected by Whittlesey and Conklin, begun 1963. *Left*: Shopping plaza and high-rise apartment tower on the lagoon. *Right*: Plan and model of First Village Center.

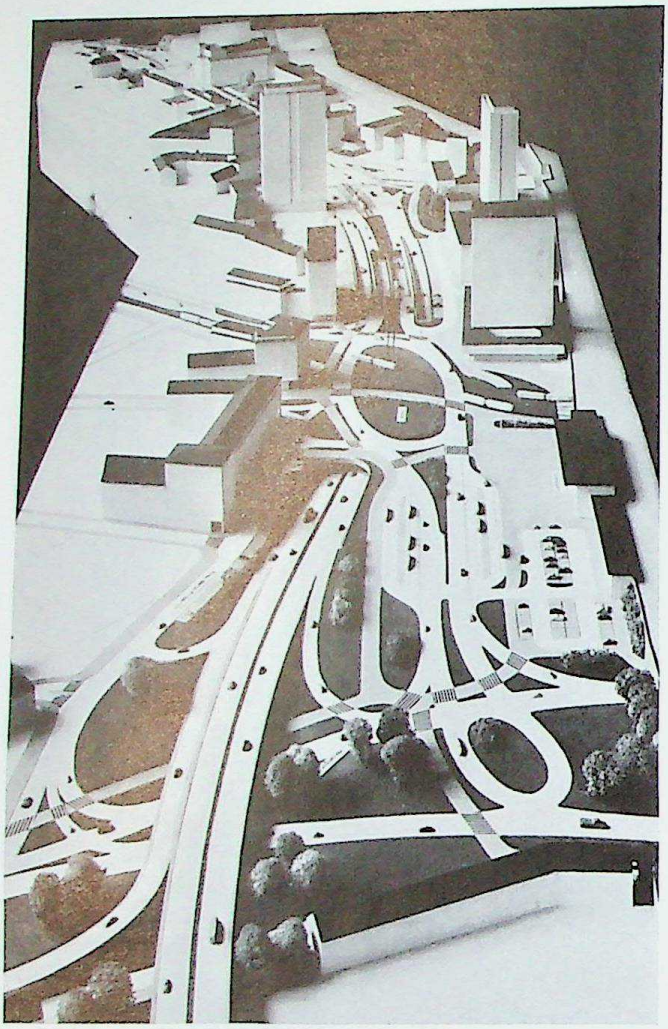
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

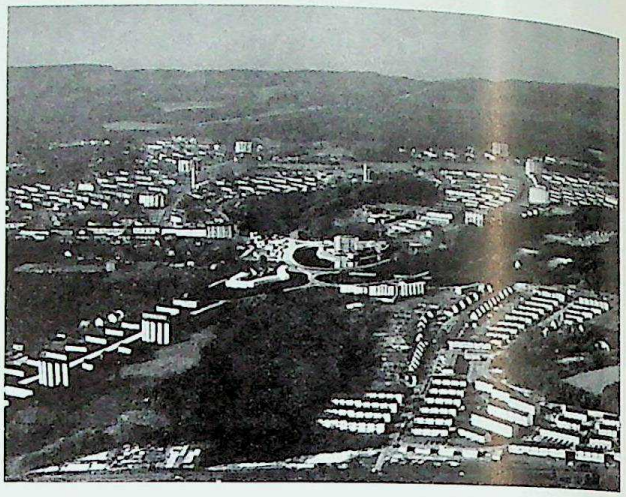




Pl. 165. *Above*: Santa Monica, Calif., model of a redevelopment project for the southern seashore by Reay Demars, submitted 1960. *Below*: San Francisco, model of the Golden Gateway apartment and town house project by Reay Demars, ca. 1962.

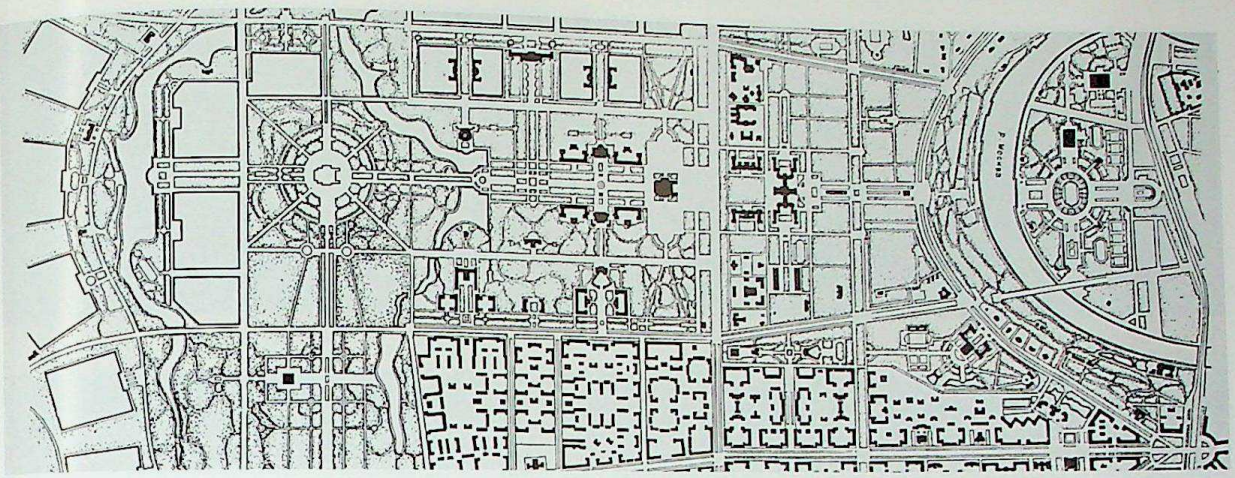
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

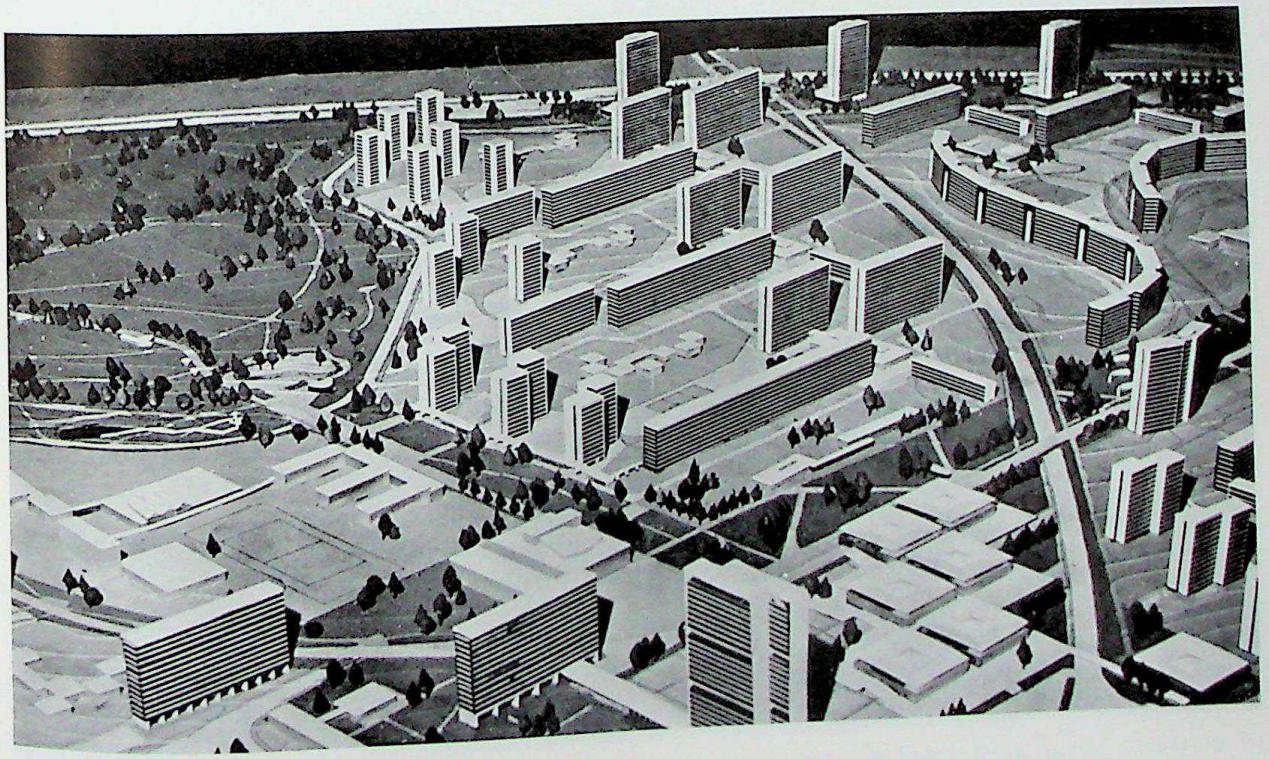




Pl. 166. Germany. *Left, above*: Essen, model showing approaches and exits of Ruhr expressway in area of central railroad station, prior to project revision in 1963. *Below*: Cologne, residential district of Volkspark, built 1951. *Right, above*: Sennestadt, near Bielefeld, projected by H. B. Reichow, photomontage made during construction in 1959. *Center*: Hamburg-Harburg, Denickestrasse area, projected 1958 by F. and I. Spengelin. *Below*: Cologne, residential district of Vingst, projected 1960 by H. Neubert.

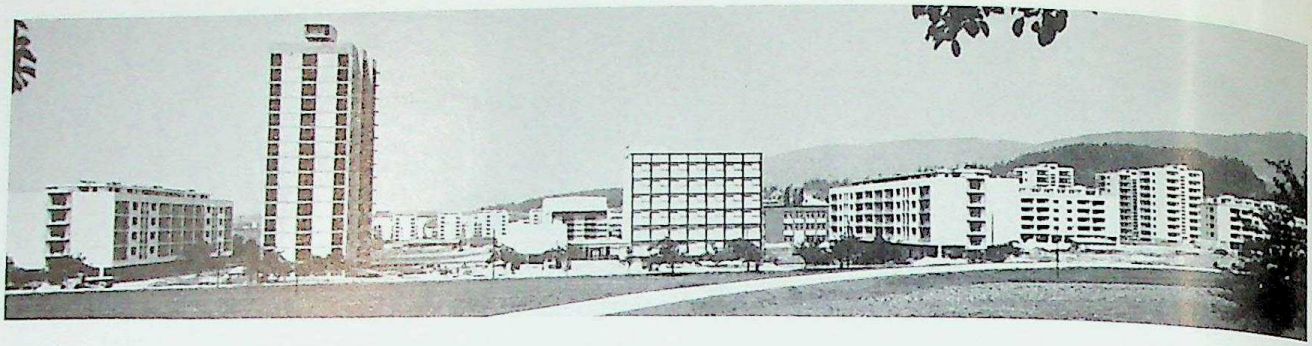
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

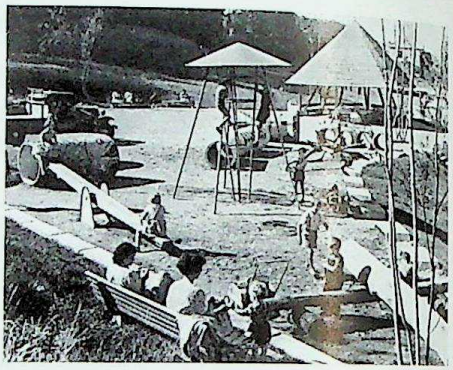




Pl. 167. Moscow. *Above*: Plan of development in the southwest district, 1954–56. *Center, left*: Residential zone of Novye Cheremushky, 1956. *Right*: Residential zone of the southwest district, 1954–56. *Below*: Model of an experimental housing development in the southwest district, begun 1958.

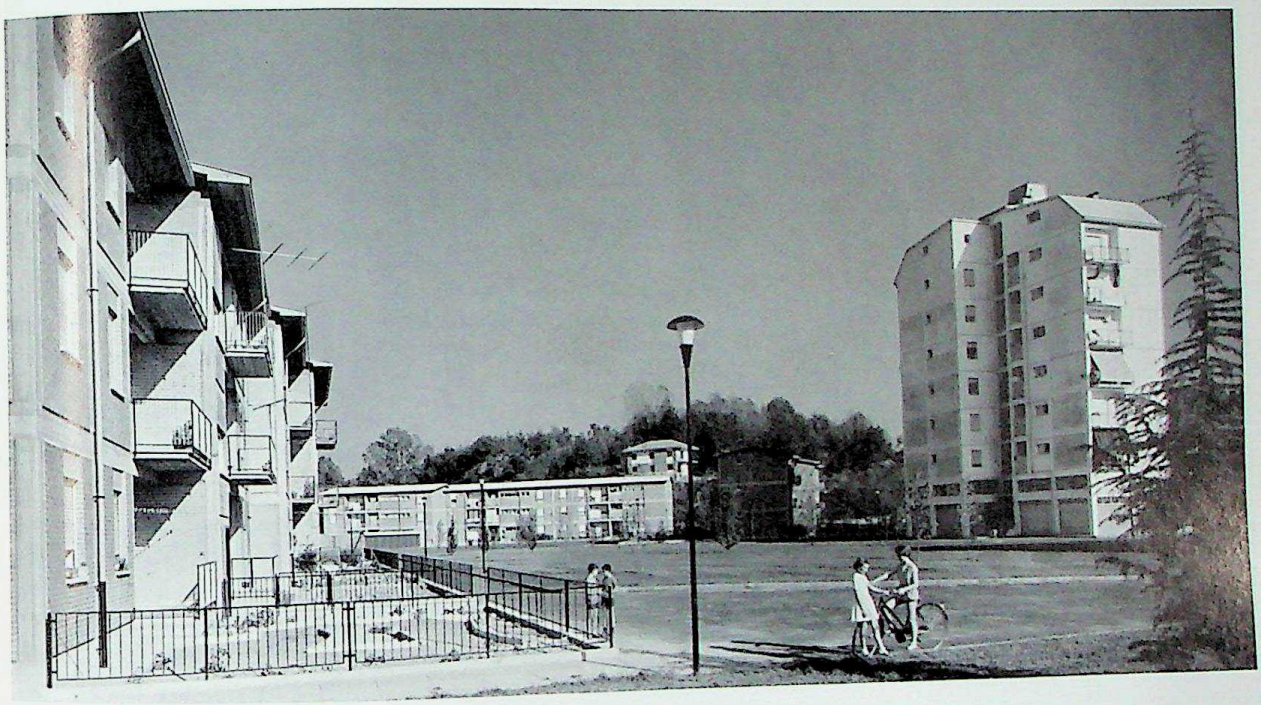
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

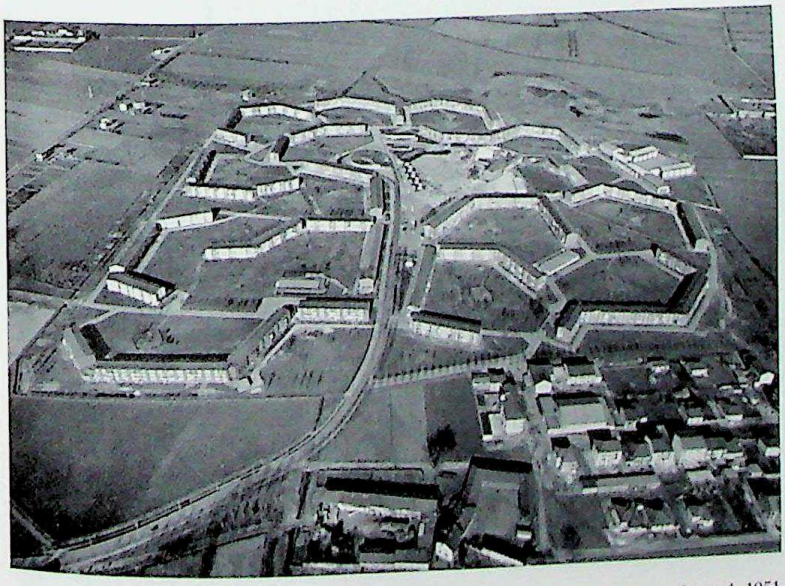


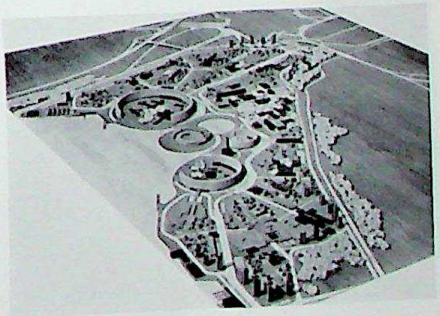


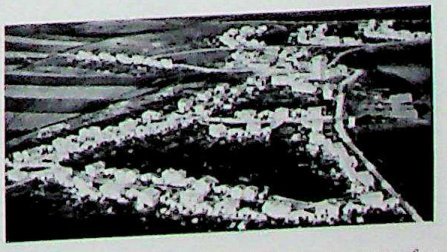
Pl. 168. *Above*: Velenje, Yugoslavia, view of the new center. *Center and below*: Zurich. *Center, left*: One-family dwellings on the Adolf Lüchingerstrasse, by H. Müller and F. Sommerfeld, 1952. *Right*: Playground of the Sonnengarten cooperative, by A. Trachsel, 1951–52. *Below*: Heiligfeld III, by A. H. Steiner, 1955.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



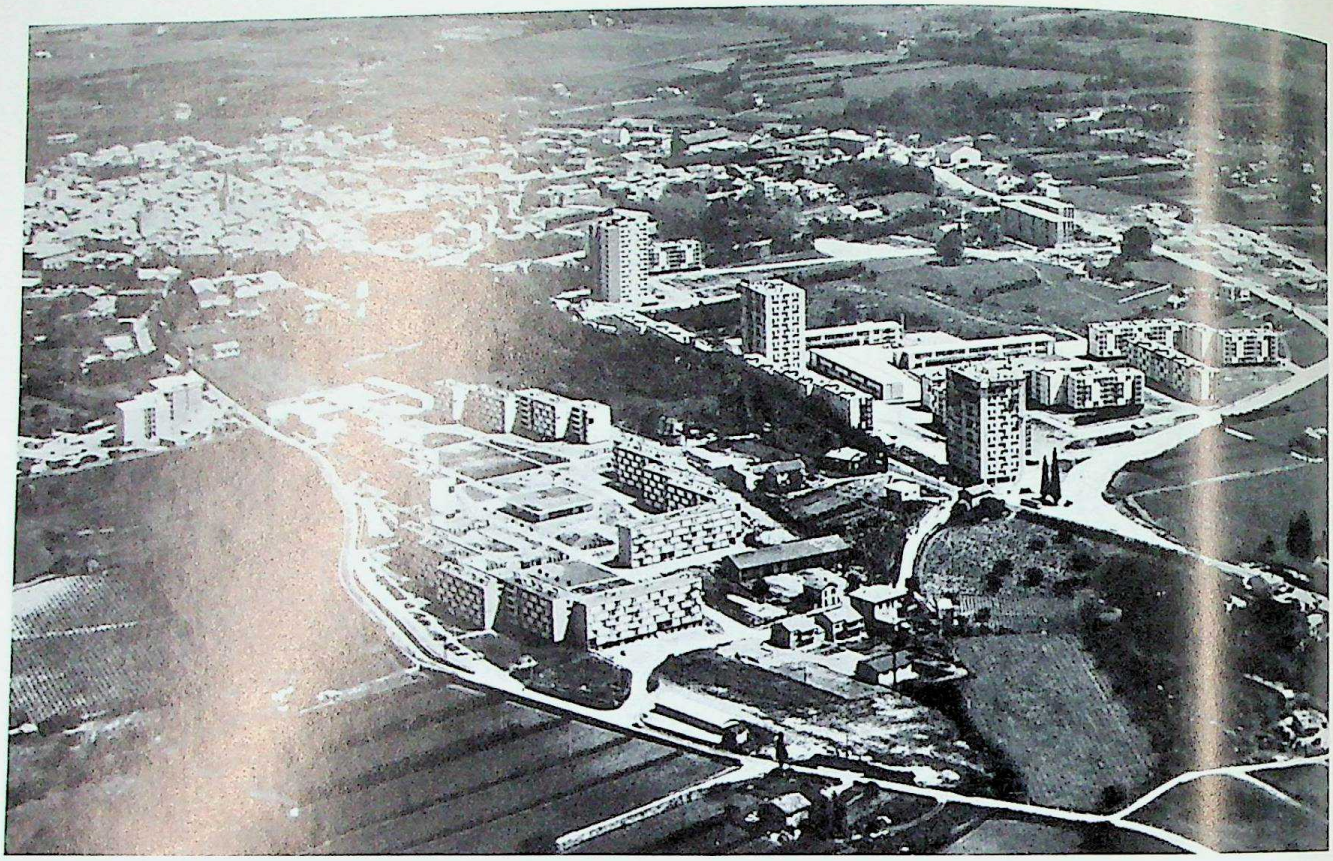


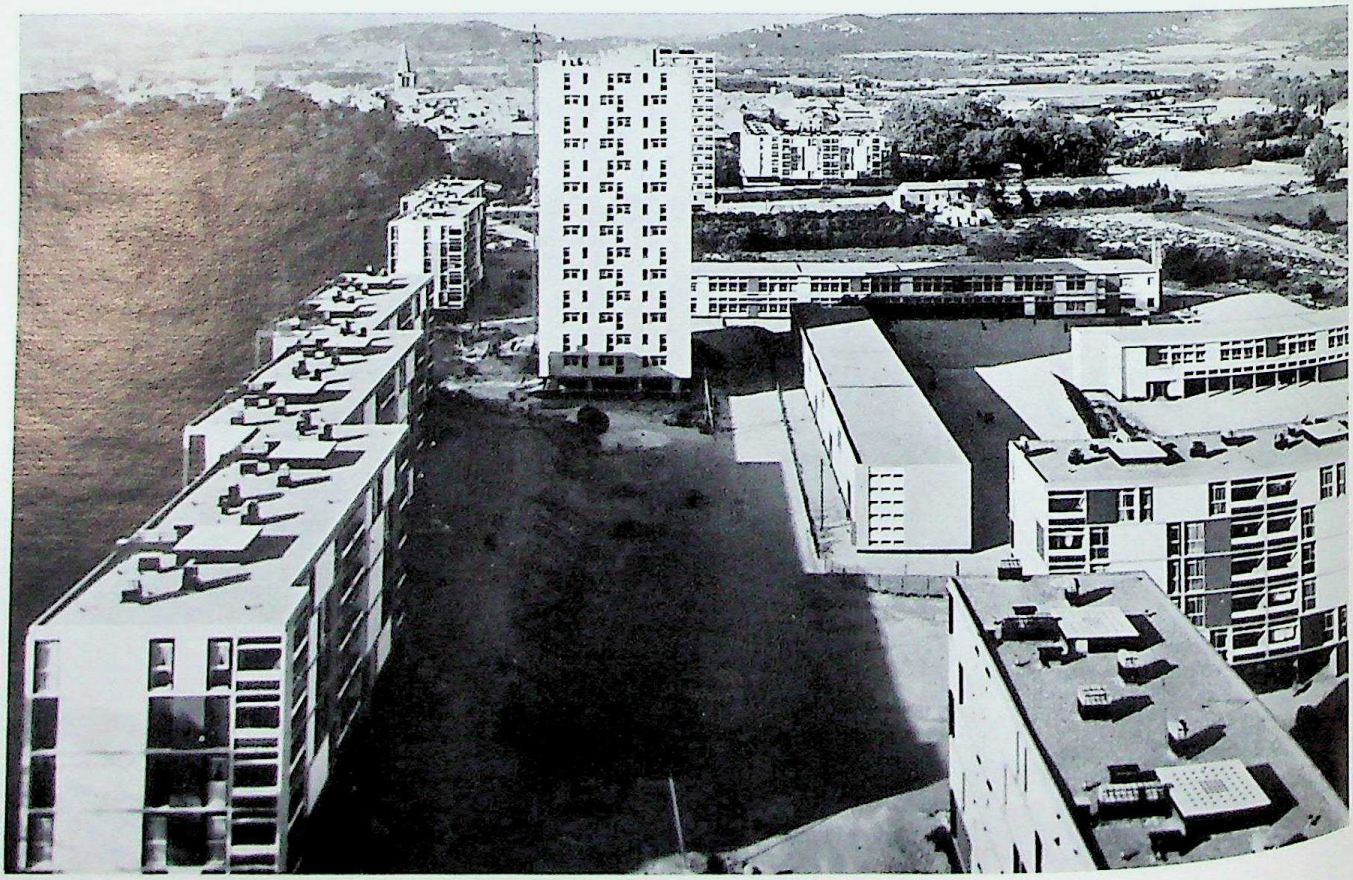




Pl. 169. Italy. *Above*: The Bernabò Brea INA-Casa development, projected 1951. *Center*: Bellavista, Ivrea, housing development for Olivetti employees, 1959. *Below, left*: Falchera, Turin, INA-Casa development, 1951. *Right*: Barene di San Giuliano, Mestre, project for a residential district on the shores of the lagoon, 1959; La Martella, Matera, UNRRA-Casa rural resettlement development, 1951.

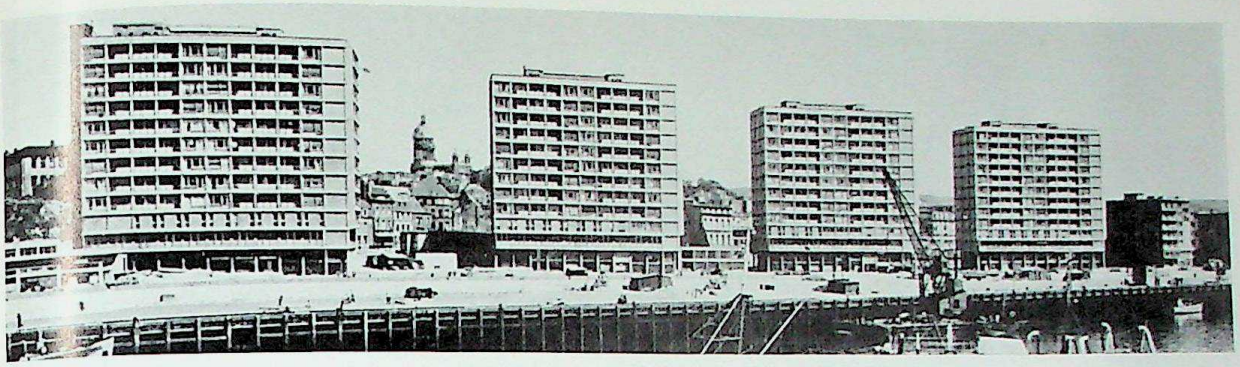
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

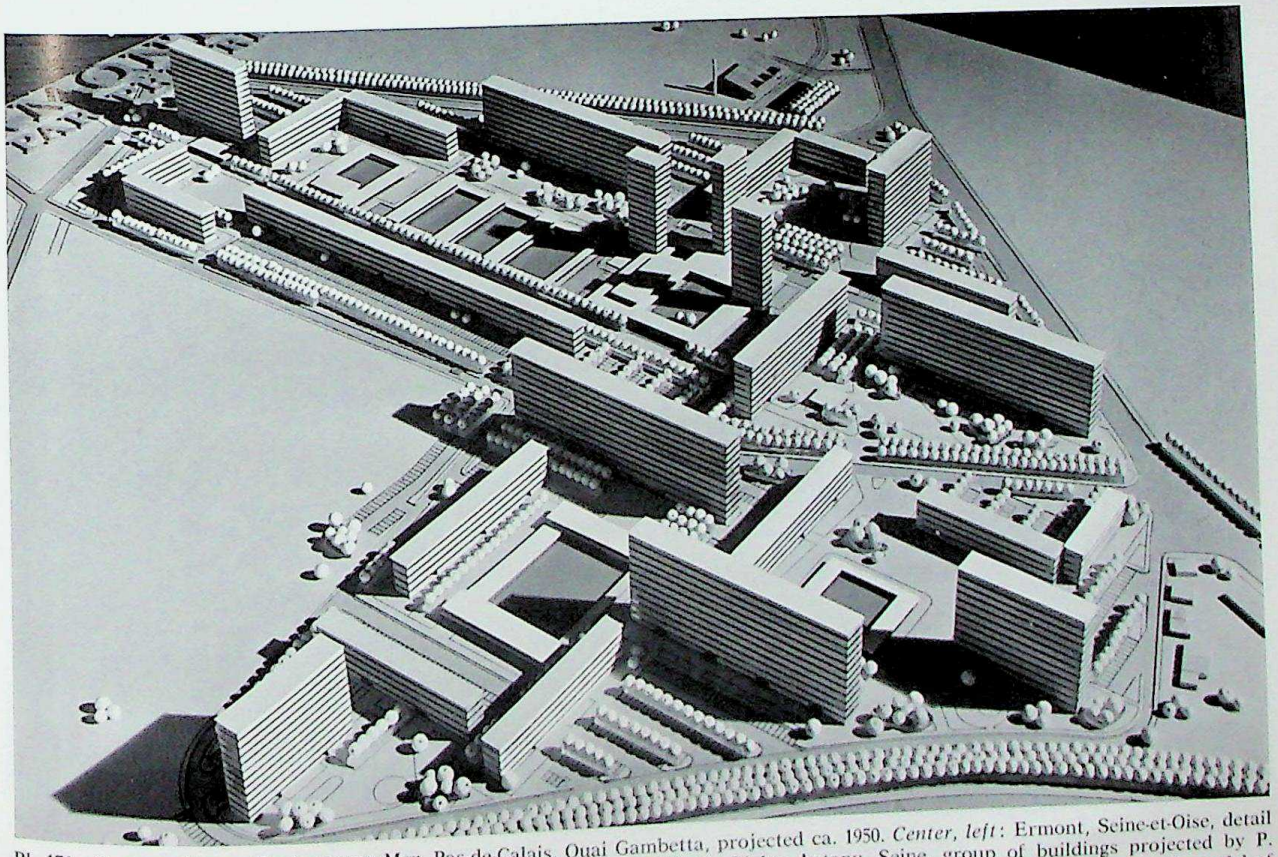




Pl. 170. Bagnols-sur-Cèze, Gard, France, housing developments for the atomic center of Marcoule, by G. Candilis, projected 1956. *Above*: View showing complexes of La Citadelle (in foreground) and Escanaux. *Below*: Escanaux.

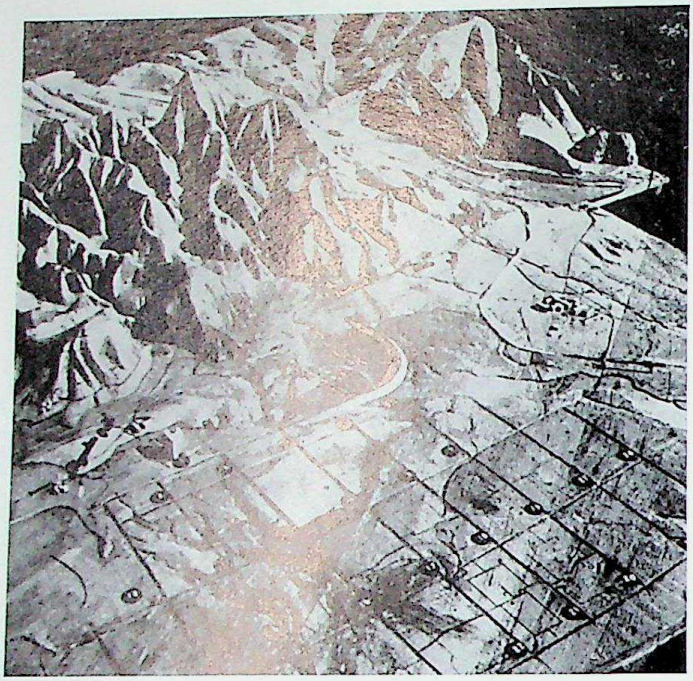
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

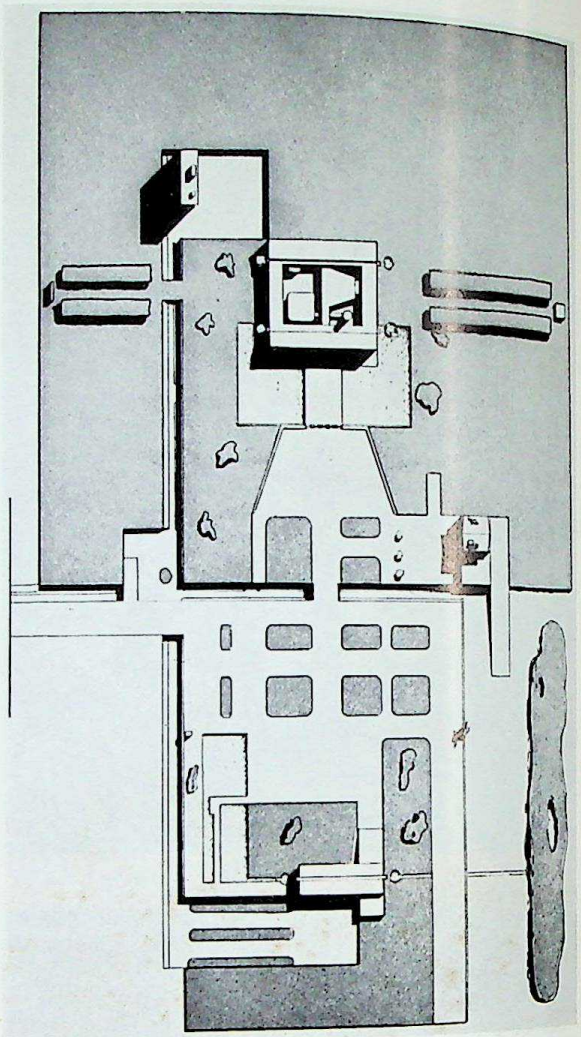


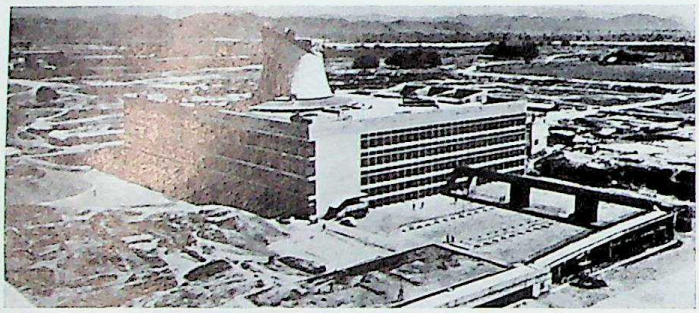


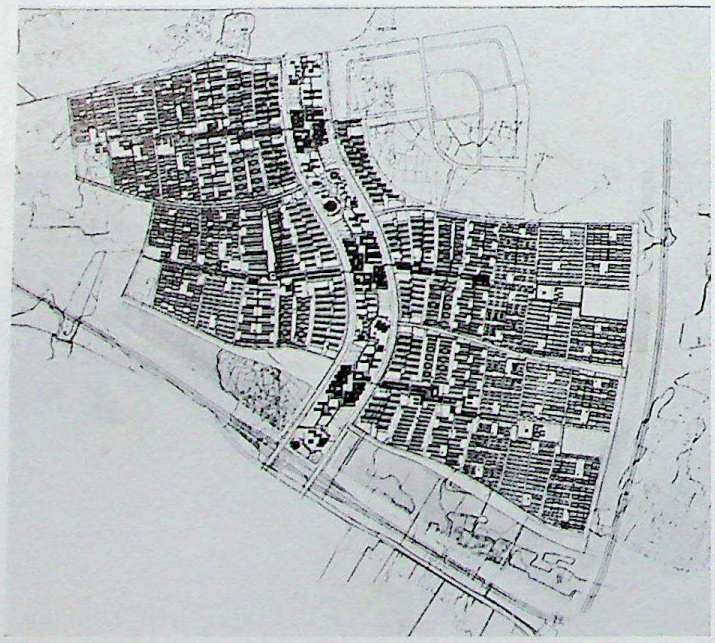
Pl. 171. France. *Above*: Boulogne-sur-Mer, Pas-de-Calais, Quai Gambetta, projected ca. 1950. *Center, left*: Ermont, Seine-et-Oise, detail of the Cité des Chênes, by P. Herbé and J. Le Couteur, 1959–63. *Right*: Antony, Seine, group of buildings projected by P. Herbé, J. Bocquillon, and A. Méry, 1960. *Below*: Clermont-Ferrand, Puy-de-Dôme, ZUP (priority development area), model of a project by D. Michelin, ca. 1962.

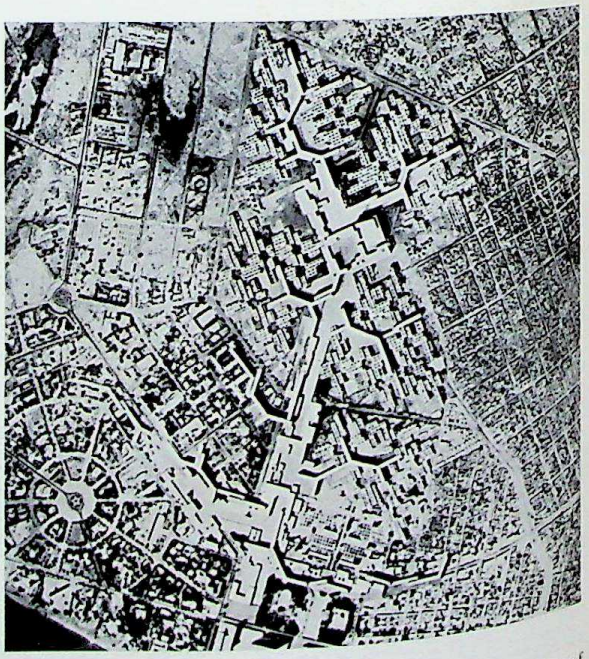
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





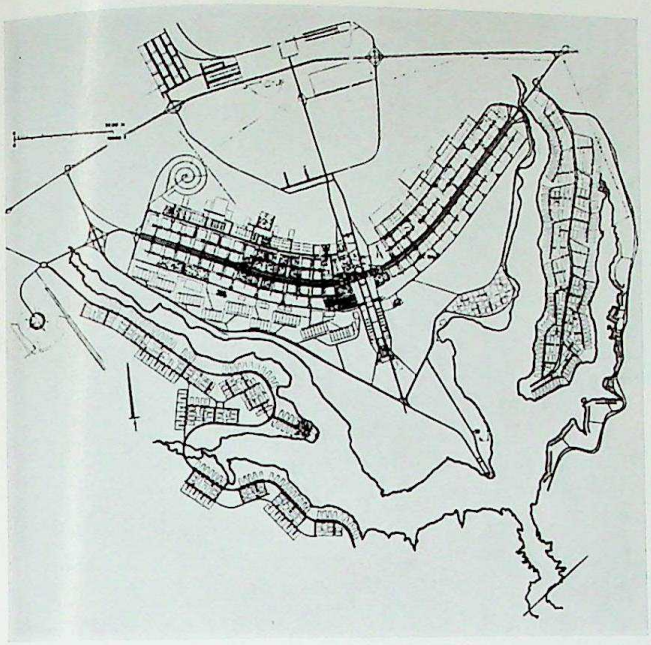


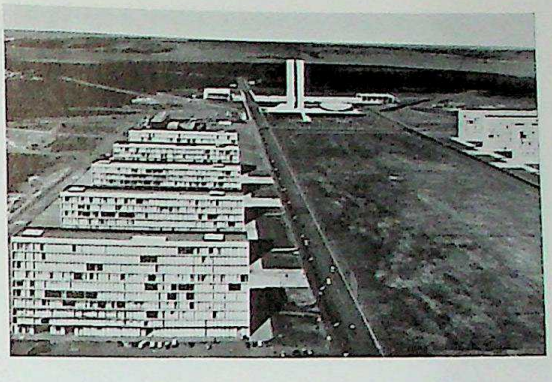


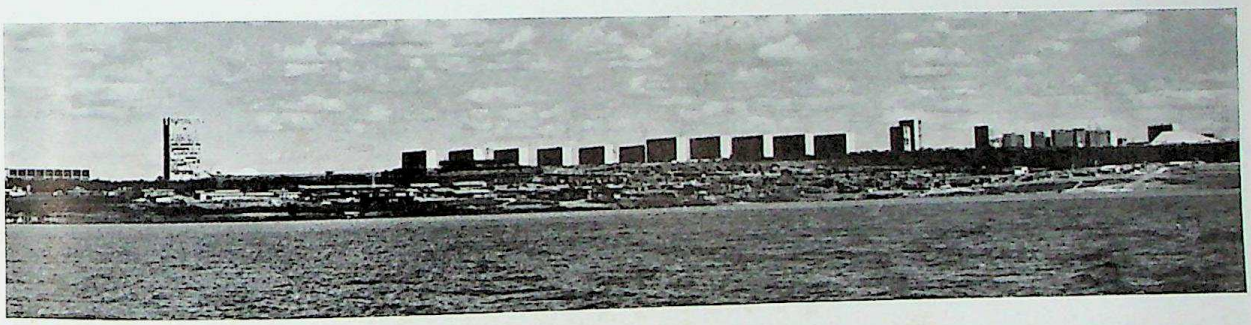


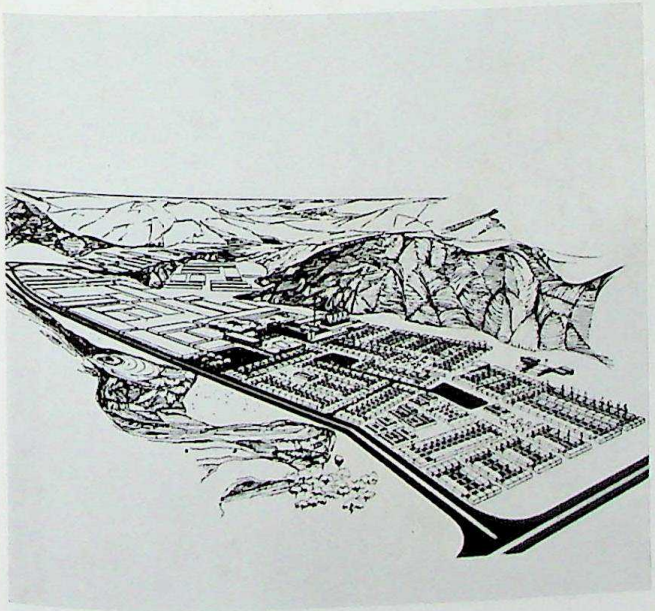
Pl. 172. New cities in underdeveloped countries. *Above and left, center*: Chandigarh, Punjab, India, planned under the direction of Le Corbusier, begun 1953. *Above, left*: Topographical model with general plan of the city. *Right*: Plan of the center. *Center*: The Assembly Chambers, shown under construction, early 1960s. *Below, left*: Pulau Mas, Java, Indonesia, projected plan, 1963. *Right*: Fort-Lamy, Chad, photomontage with a model of the new plan by Candilis, Josic, and Woods, 1963.

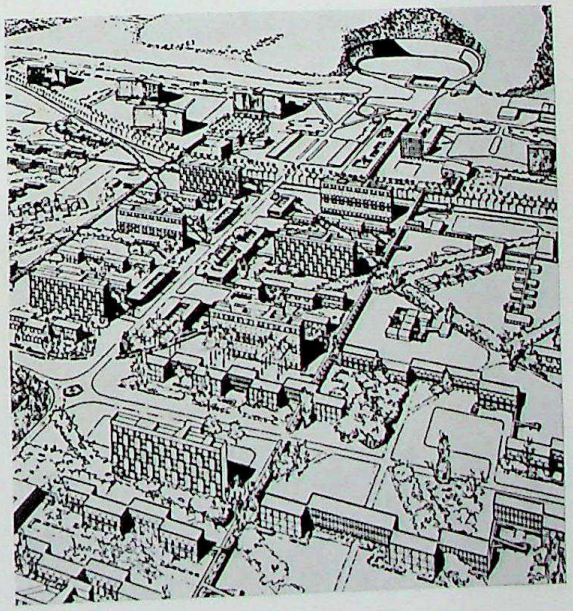
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





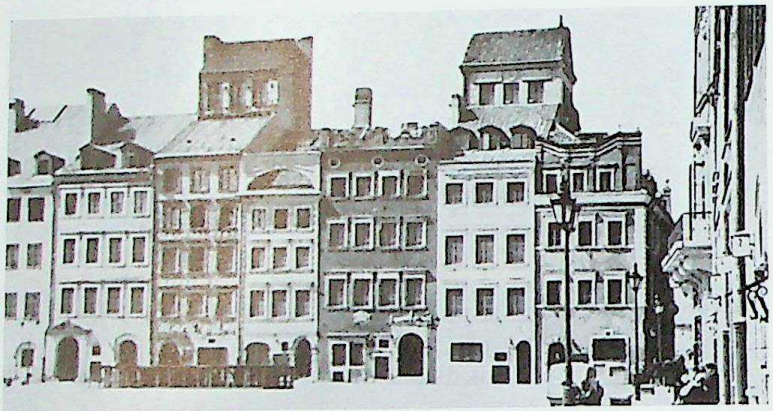


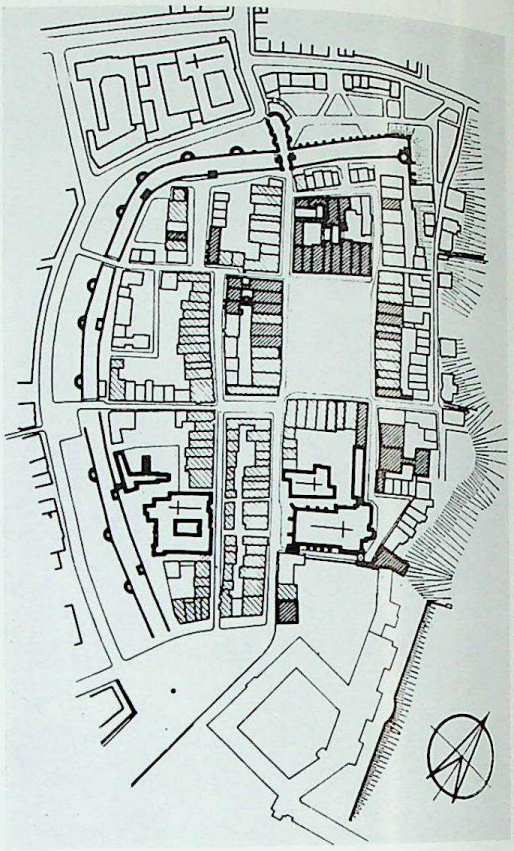


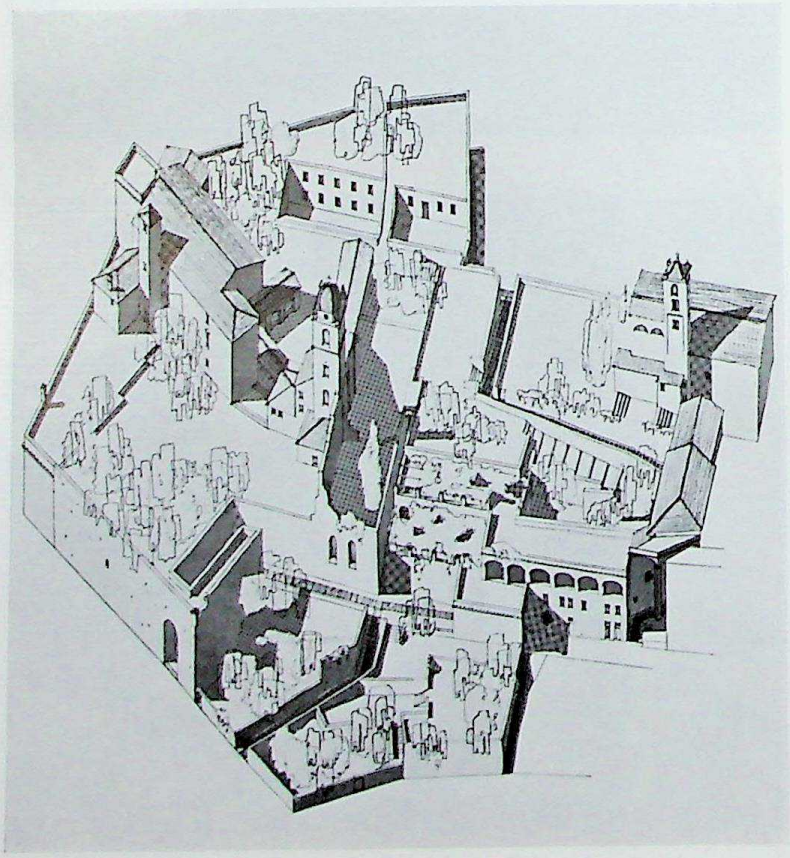


Pl. 173. South America. *Above and center*: Brasília. *Above, left*: Master plan by L. Costa, 1957. *Right*: View of the mall and ministry buildings, looking toward the Plaza of the Three Powers; a residential superblock. *Center*: Profile of the monumental axis, with artificial lake in foreground. *Below, left*: Lima, Peru, general plan for new sector of Ventanilla, projected 1963. *Right*: Brazil, unexecuted plan for Cidade dos Motores, P. L. Wiener and J. L. Sert, projected 1944.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

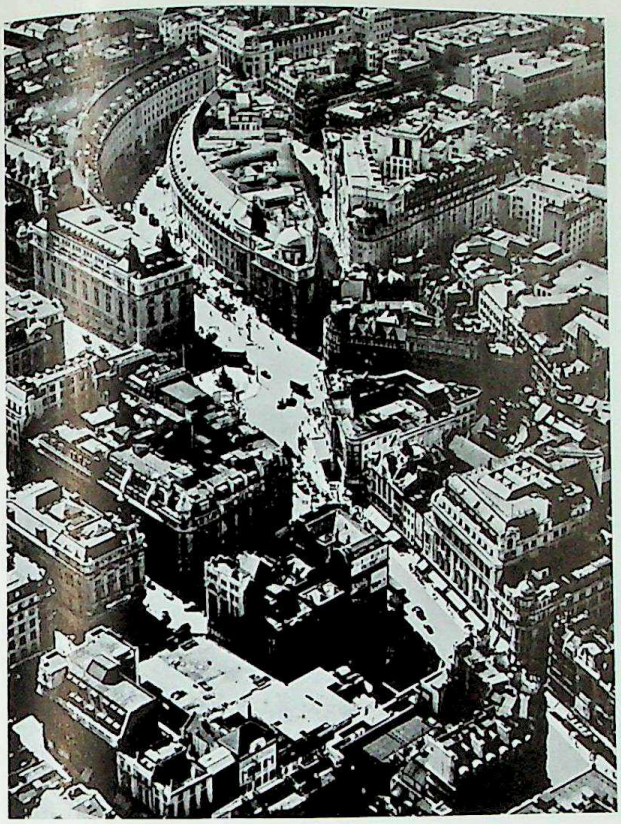


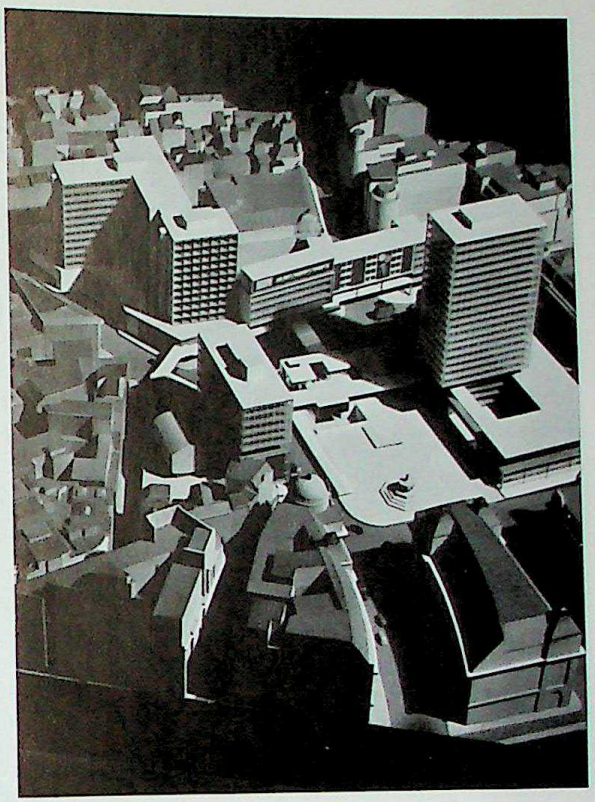


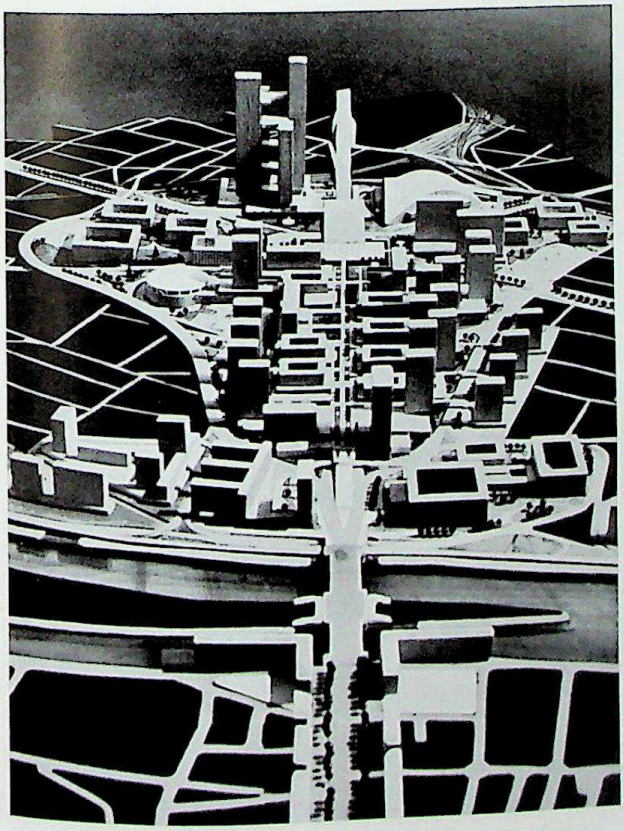


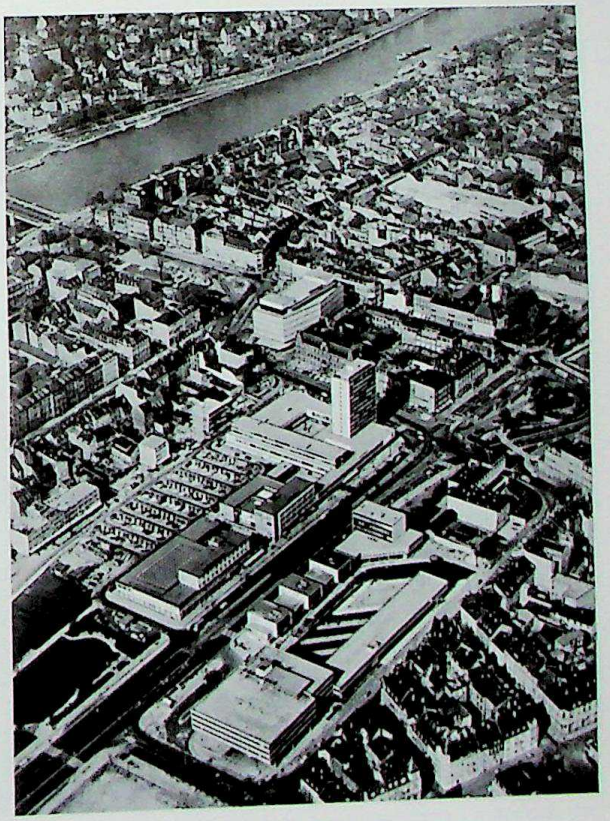
Pl. 174. Reconstruction and preservation of a historical center. *Above*: Warsaw. *Left*: The market square in the old city after World War II (1945) and the square rebuilt. *Right*: Plan of the historical center. *Below*: Genoa. *Left*: Axonometric drawing of the project for the preservation of the archaeological zone of S. Silvestro. *Right*: Detailed plan of the historical center.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



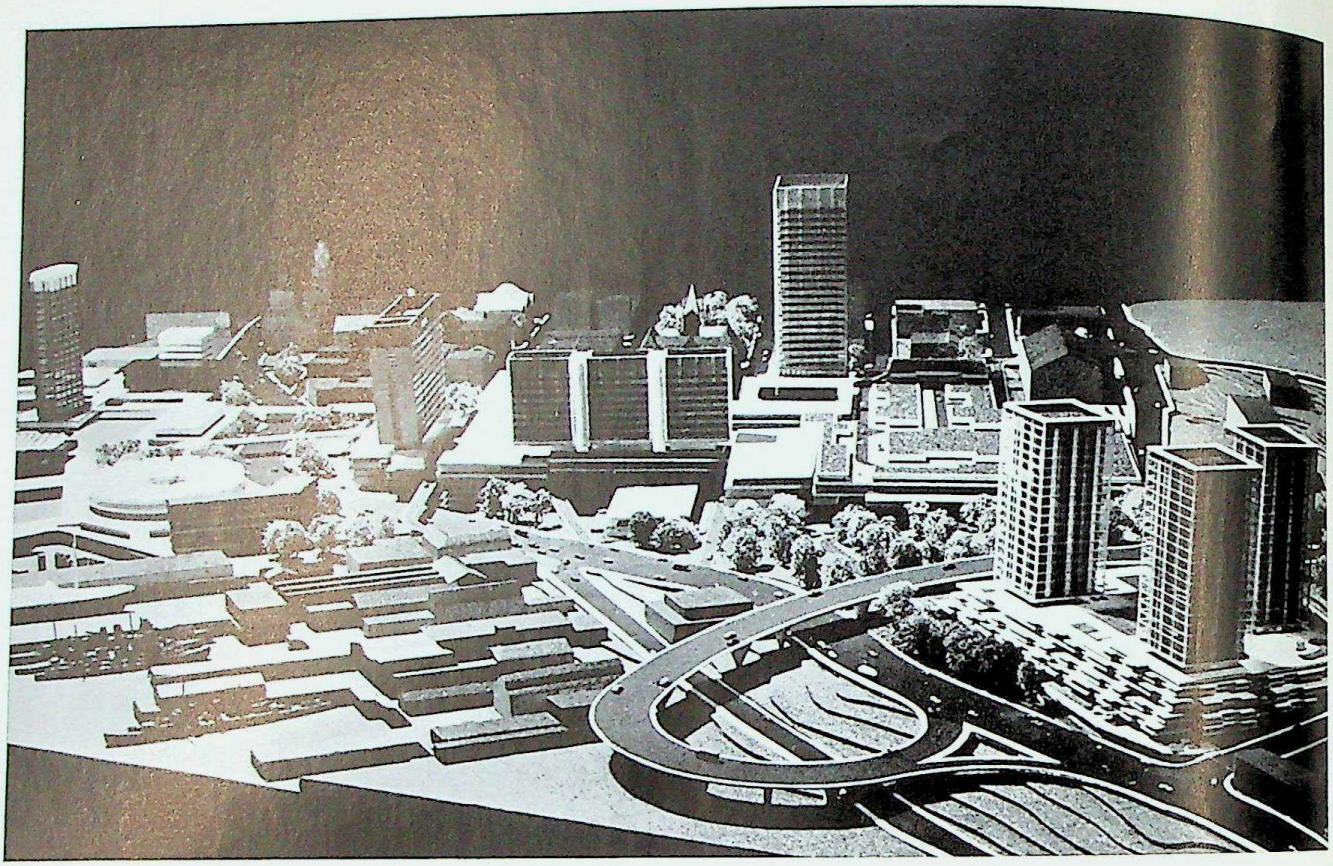


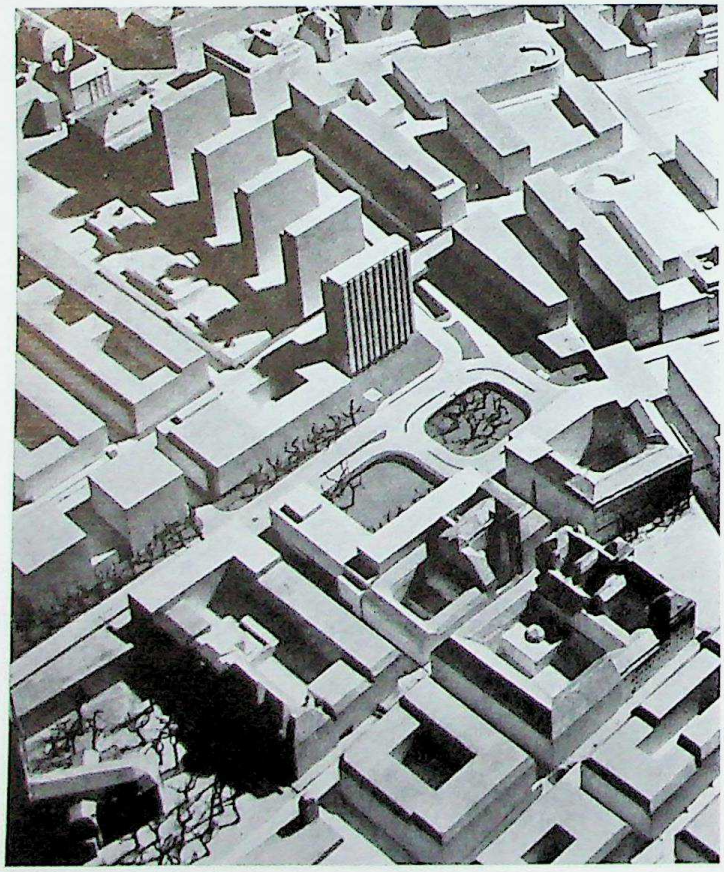


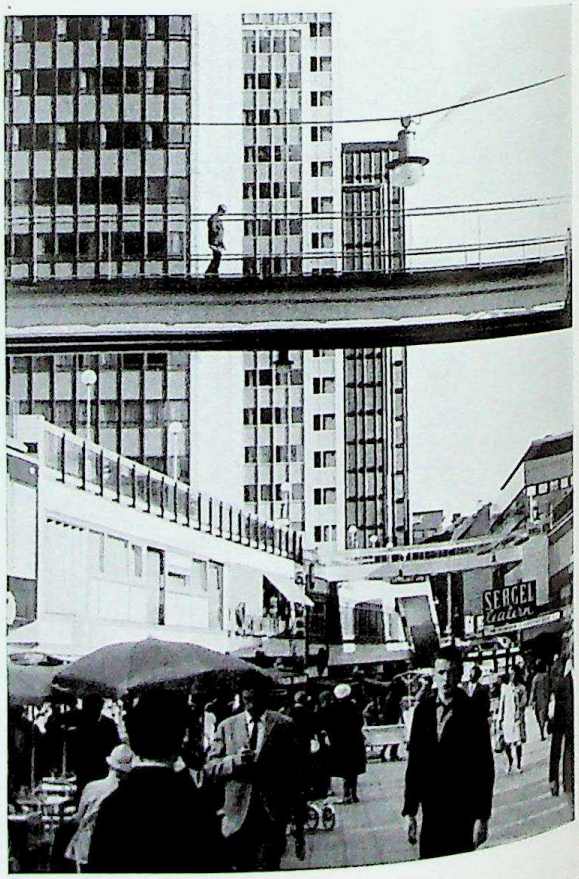


Pl. 175. Urban renewal. *Above*: London, Piccadilly Circus and environs. *Left*: Aerial view. *Right*: Model of the London County Council Advisory scheme for redevelopment of the area, 1956. *Below, left*: Paris, La Défense sector of Puteaux, model of the redevelopment project, 1960. *Right*: Heidelberg, Germany, aerial view of the new business center, 1960.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

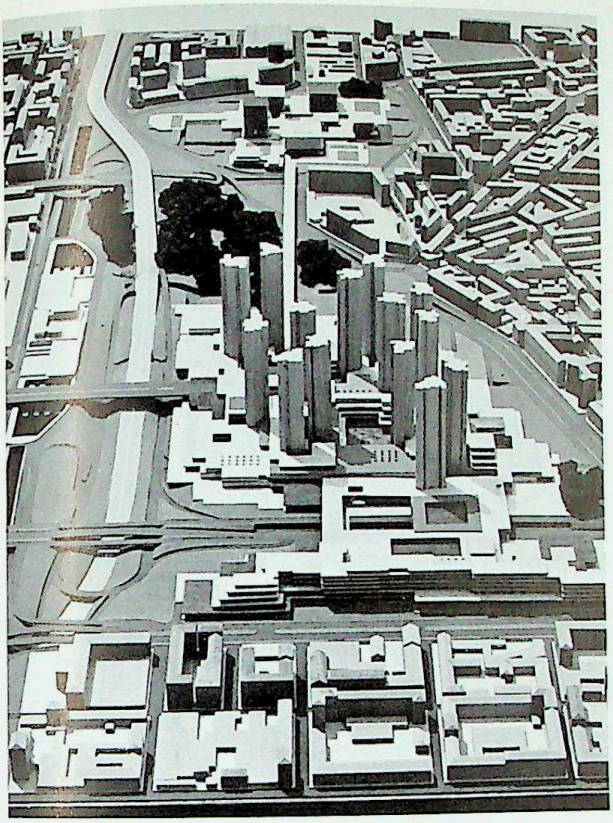


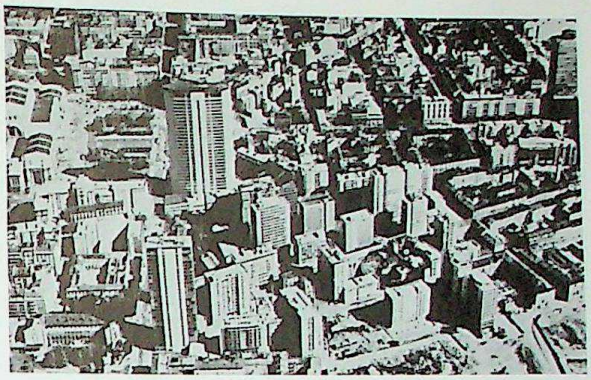


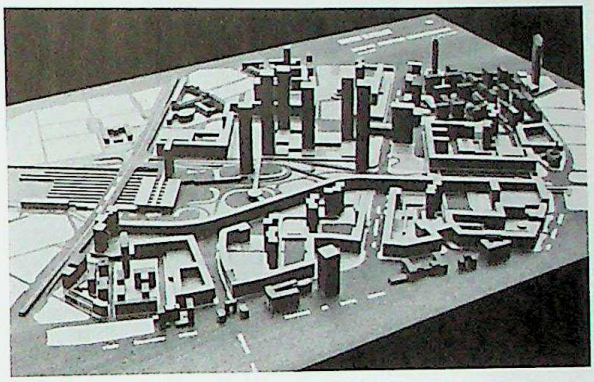


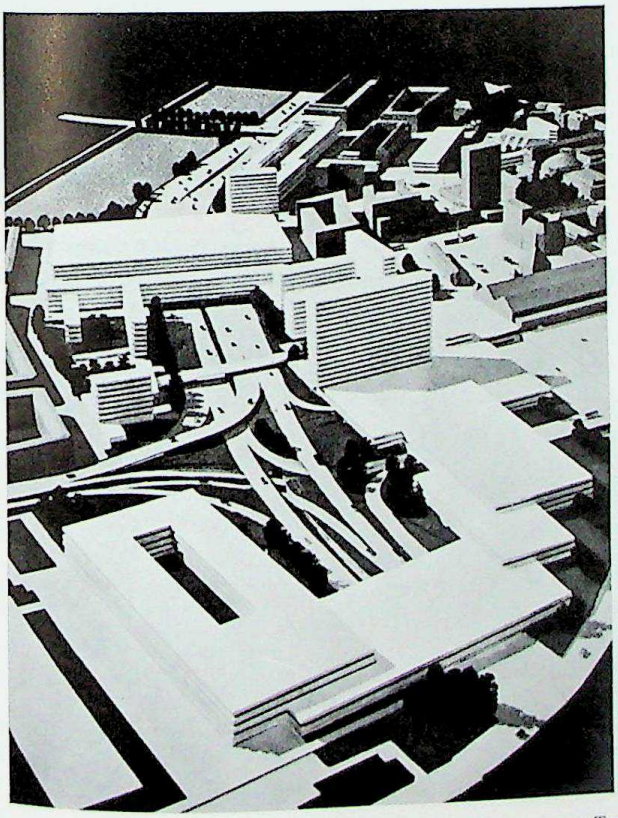
Pl. 176. *Above*: Halifax, Canada, model of Cornwallis, a residential redevelopment project, 1962–64. *Below*: Stockholm, renewal of the central zone around Sergelgatan. *Left*: Model of the project, 1962. *Right*: The project realized, 1964.

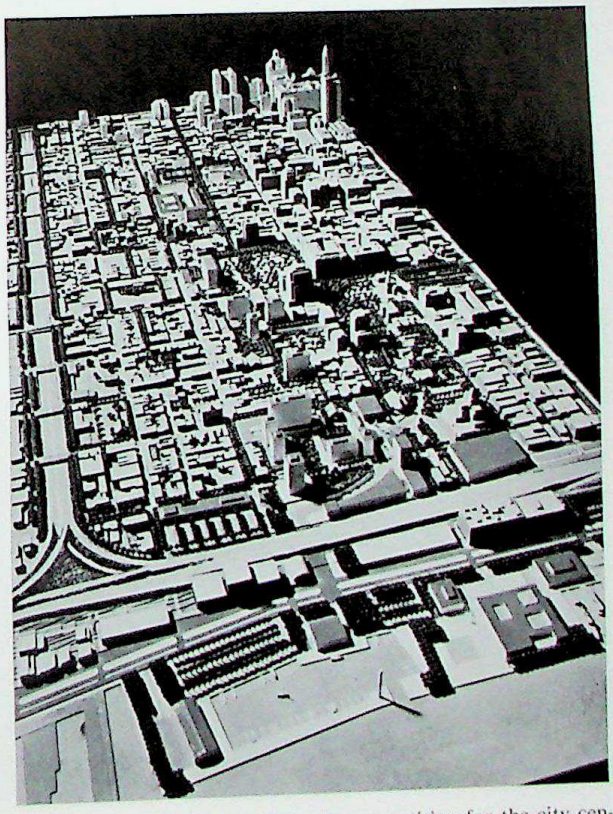
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





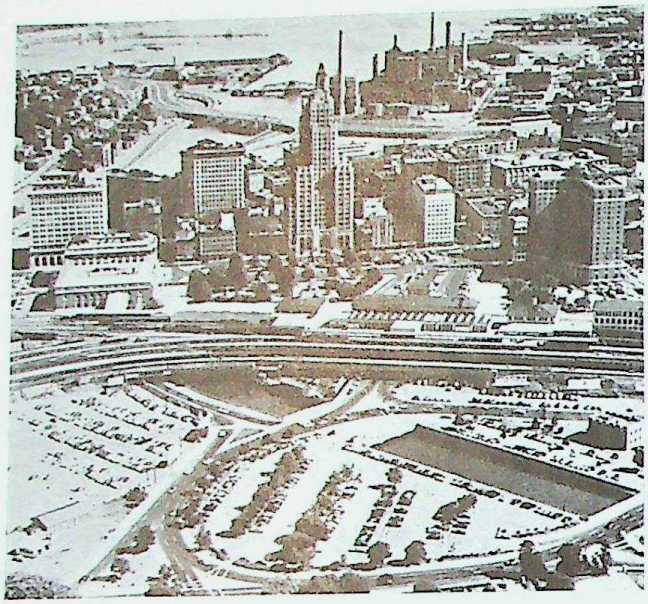


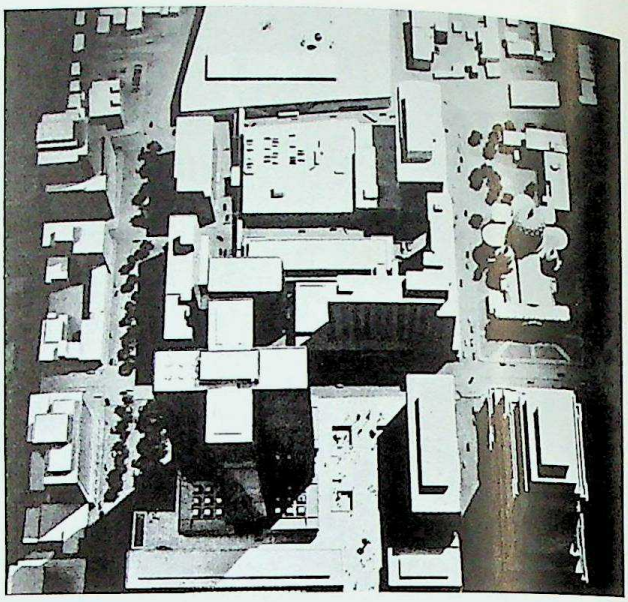


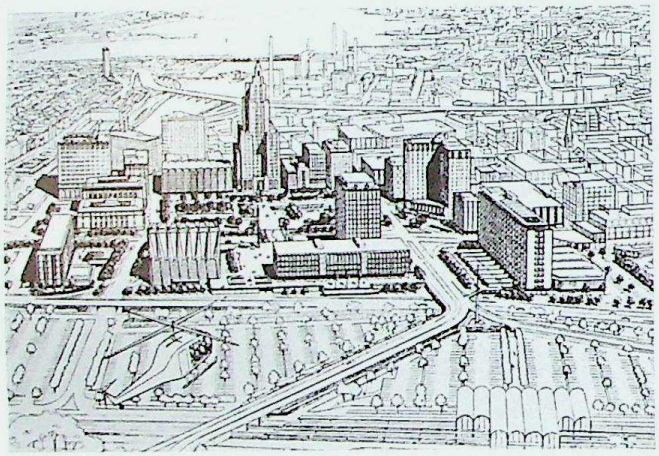


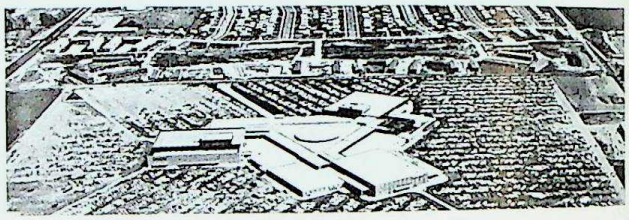
Pl. 177. Redevelopment of the core of the city. *Left, above*: Turin, model of the winning project in the competition for the city center, 1963. *Below*: Copenhagen, model of City Plan West, 1958. *Right, above and center*: Milan, center, view of the redevelopment area and model of the project, 1960. *Below*: Philadelphia, model of a proposal for the Washington Square Redevelopment Area and Penn's Landing, 1957.

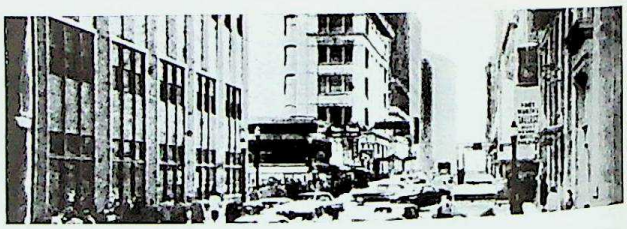
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

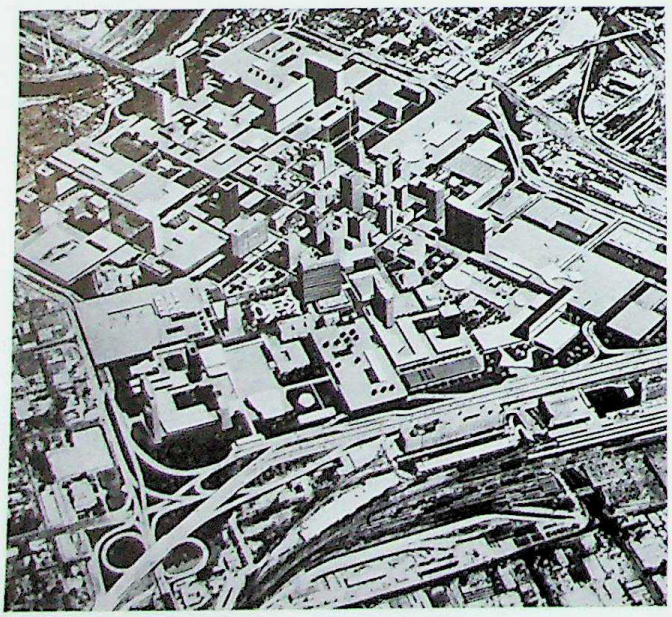


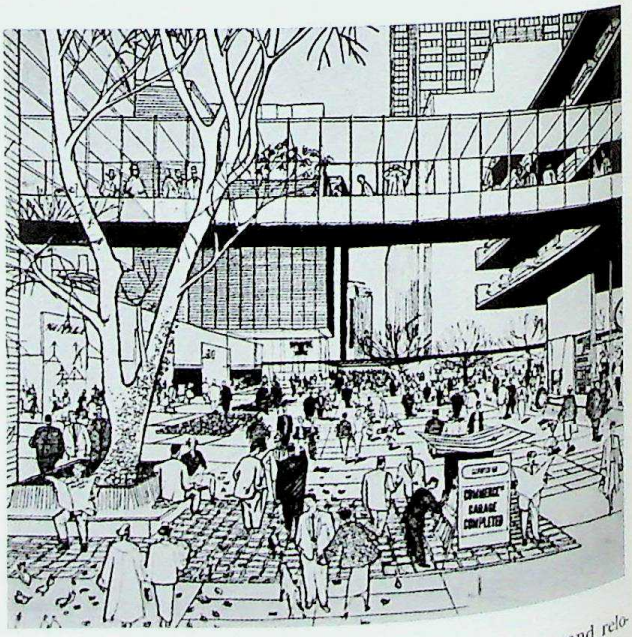






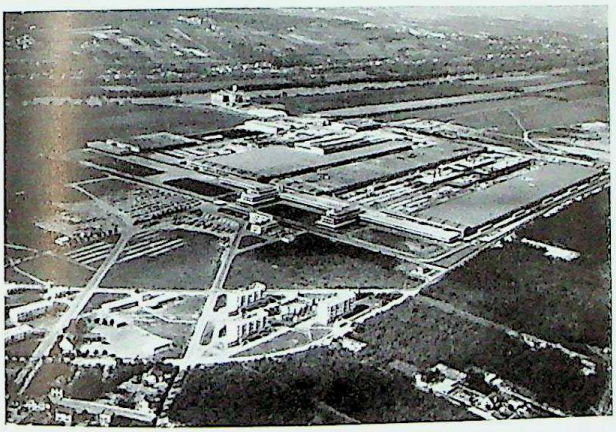


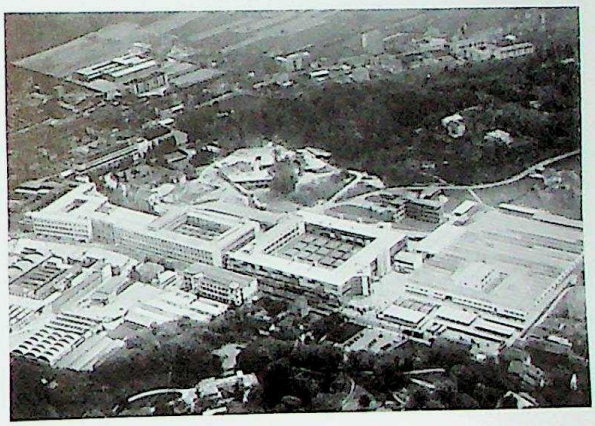




Pl. 178. *Left, above and center*: Providence, R.I., central business district, 1961, and perspectus with projected civic center and relocated railroad. *Below*: Fort Worth, Tex., center according to a model showing the city of 1970, by Victor Gruen Associates, 1956. *Right, top to bottom*: Montreal, Canada, central business district around Place Ville Marie, with buildings constructed 1950-66. Randhurst center. Fort Worth, Tex., Seventh Street and its projected transformation into a pedestrian way.

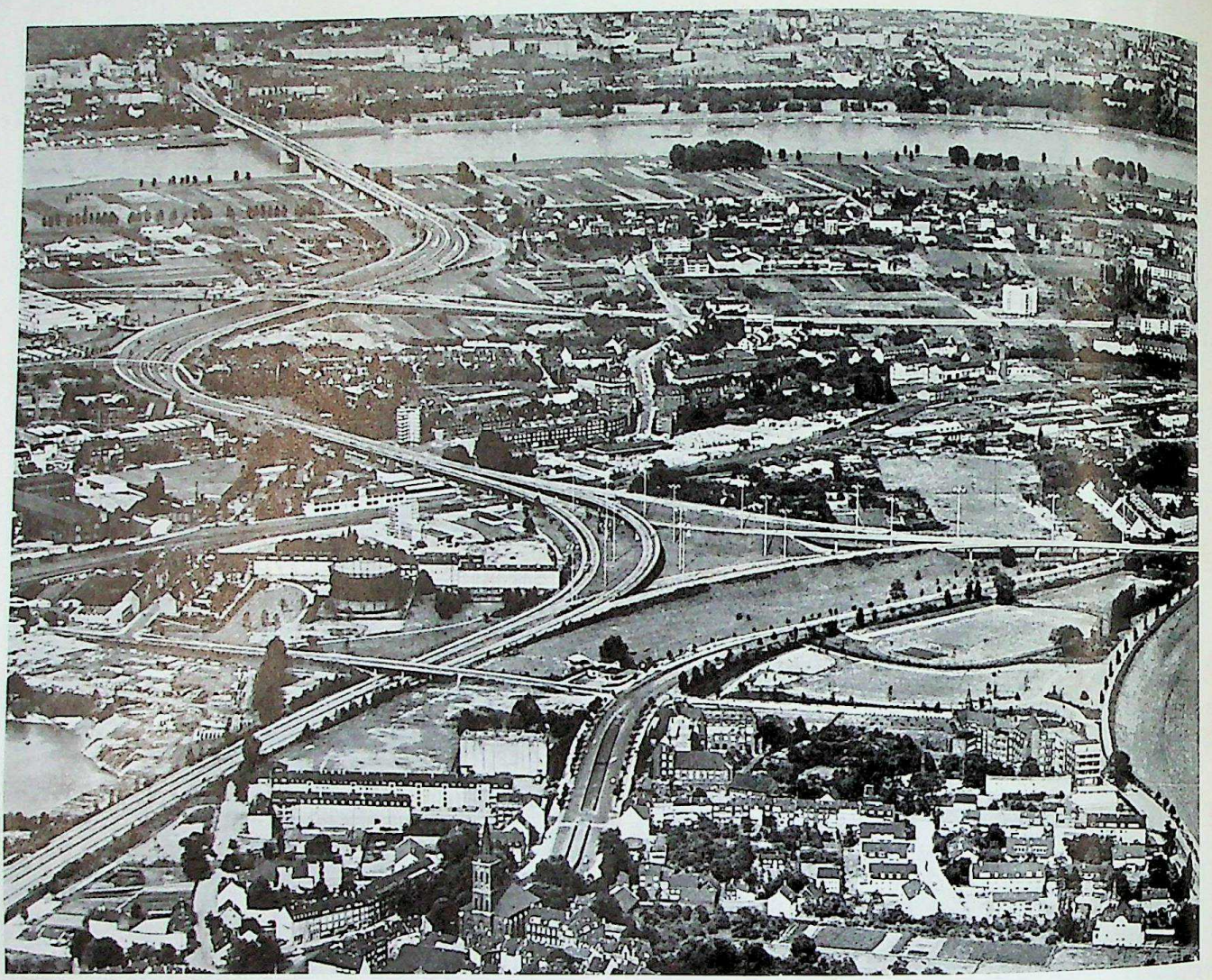
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

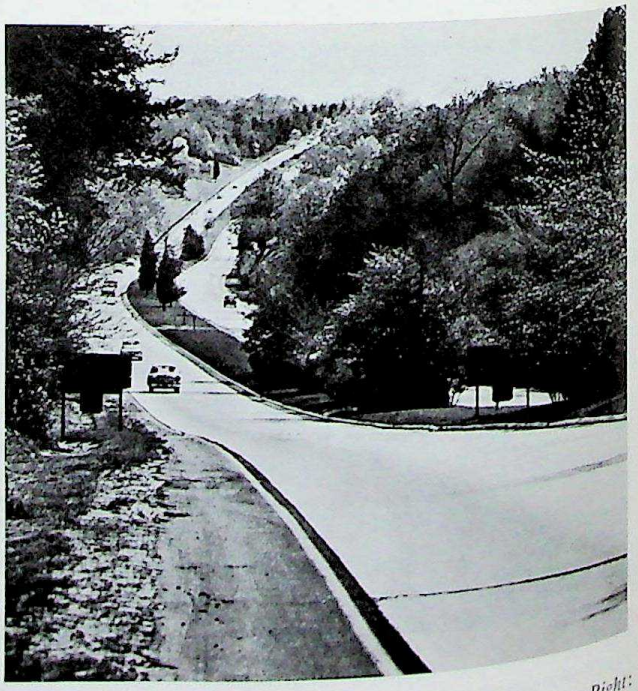




Pl. 179. Industrial centers. *Above*: Gateshead, England, Team Valley Estate industrial zone. *Center, left*: Aubergenville–Flins-sur-Seine, Seine-et-Oise, France, Renault factory complex, begun 1950, with portion of the neighboring hamlet of Elisabethville in foreground. *Right*: Ivrea, Italy, Olivetti plant, 1908–57. *Below*: Waltham, Mass., industrial park.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



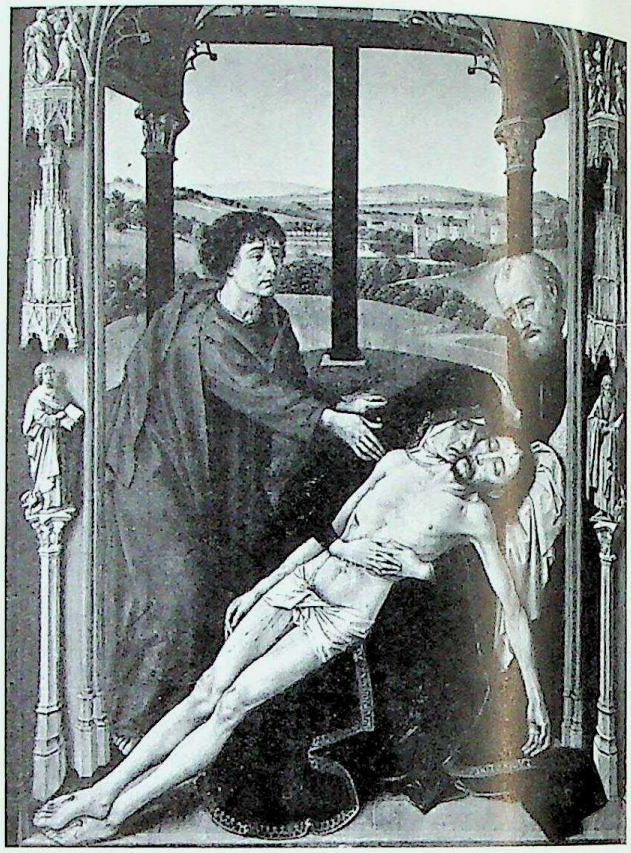


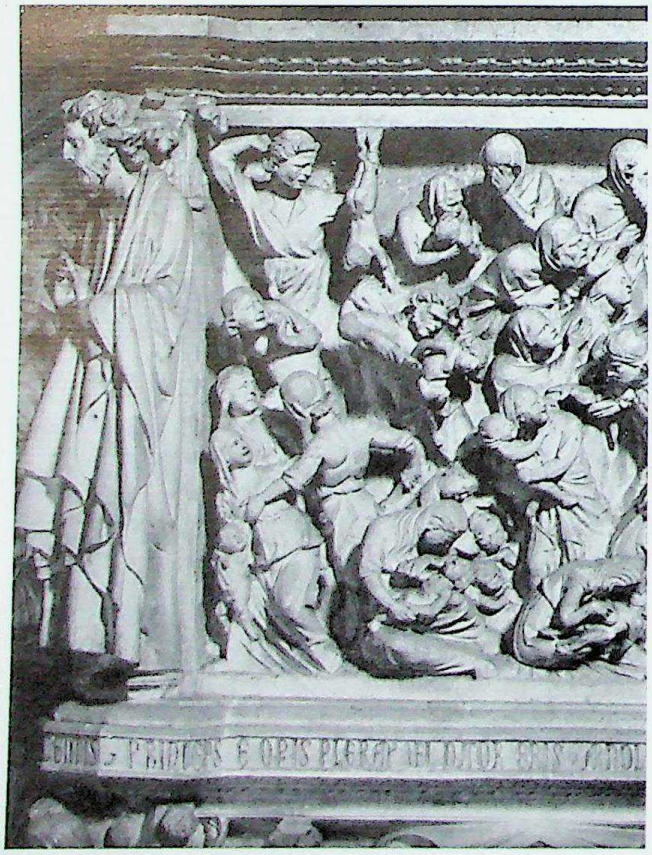
Pl. 180. Thoroughfares. *Above*: Düsseldorf, urban arteries, 1950. *Below, left*: Long Island, New York, Meadowbrook Parkway. *Right*: Connecticut, Merritt Parkway, 1934–40.

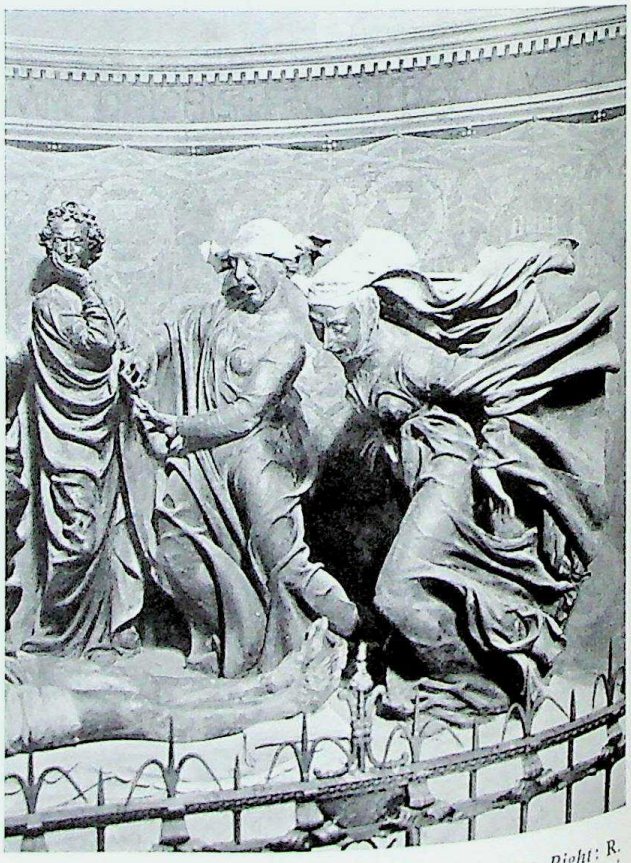
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 181. Medea meditating the murder of her children, fragment of a wall painting from Herculaneum, 1st cent. Naples, Museo Nazionale.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

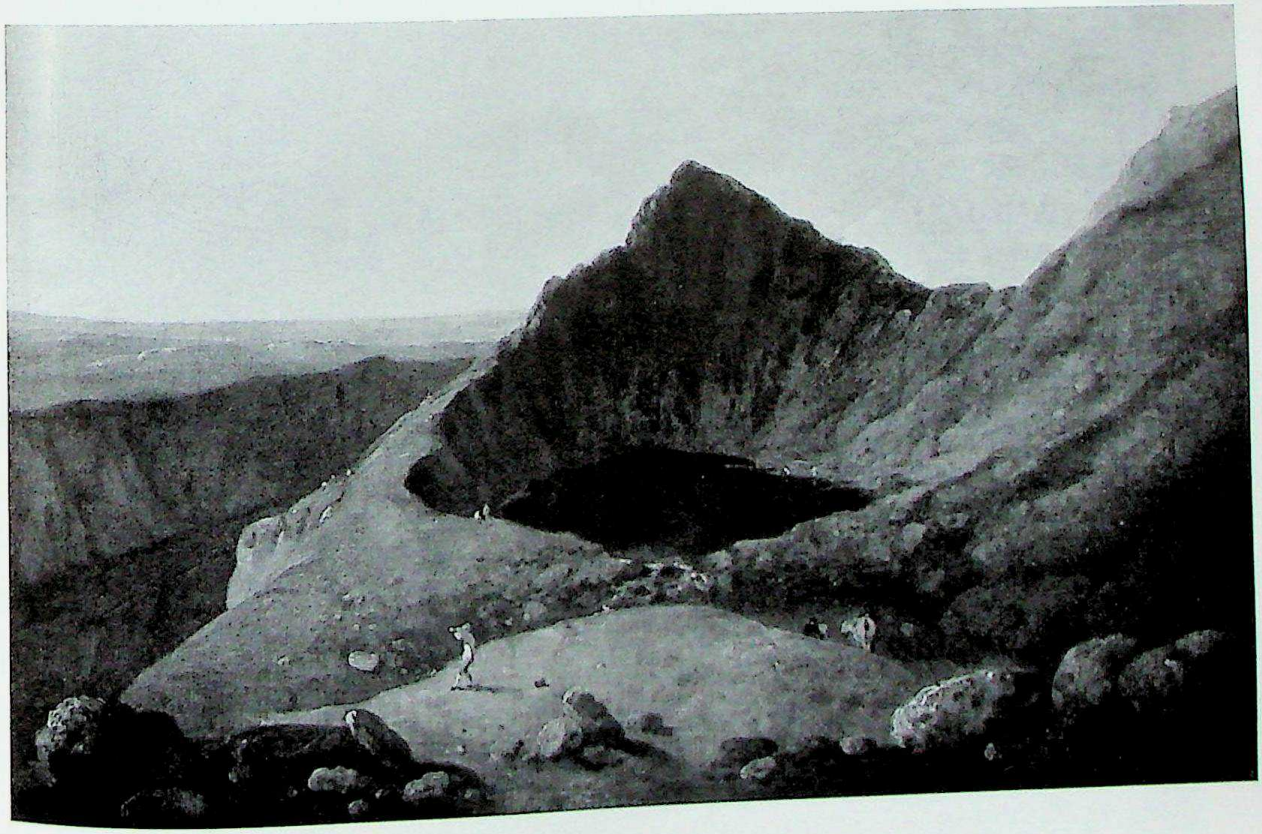






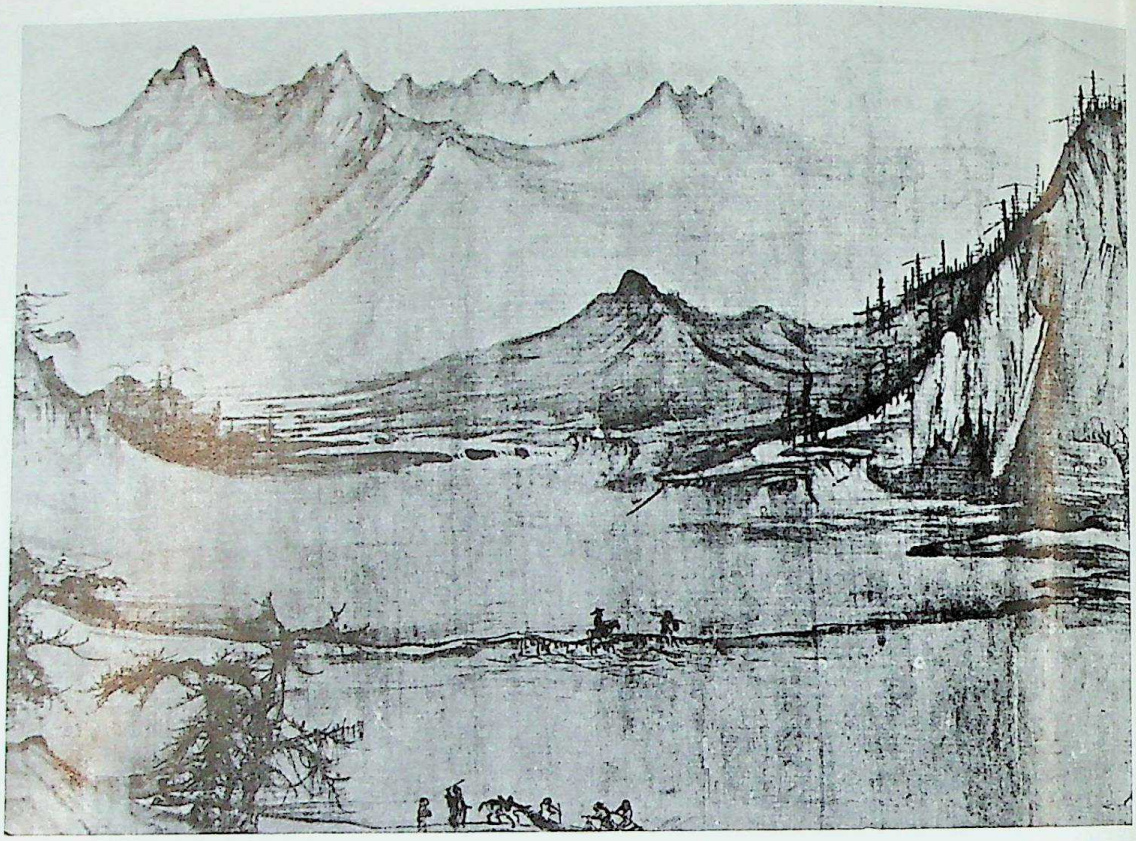
Pl. 182. *Above, left*: Eos holding the body of her son Memnon, on a kylix painted by Douris, ca. 490 B.C. Paris, Louvre. *Right*: R. van der Weyden, Pietà, central panel of a triptych, ca. 1437–38. Panel. Granada, Spain, Capilla Real. *Below, left*: Giovanni Pisano, The Slaughter of the Innocents, detail of pulpit (VI, PL. 212), finished 1301. Pistoia, Italy, S. Andrea. *Right*: Niccolò da Bari (Niccolò dell'Arca), The Lamentation, detail of a terra-cotta group (XII, PL. 19), second half of 15th cent. Bologna, S. Maria della Vita.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



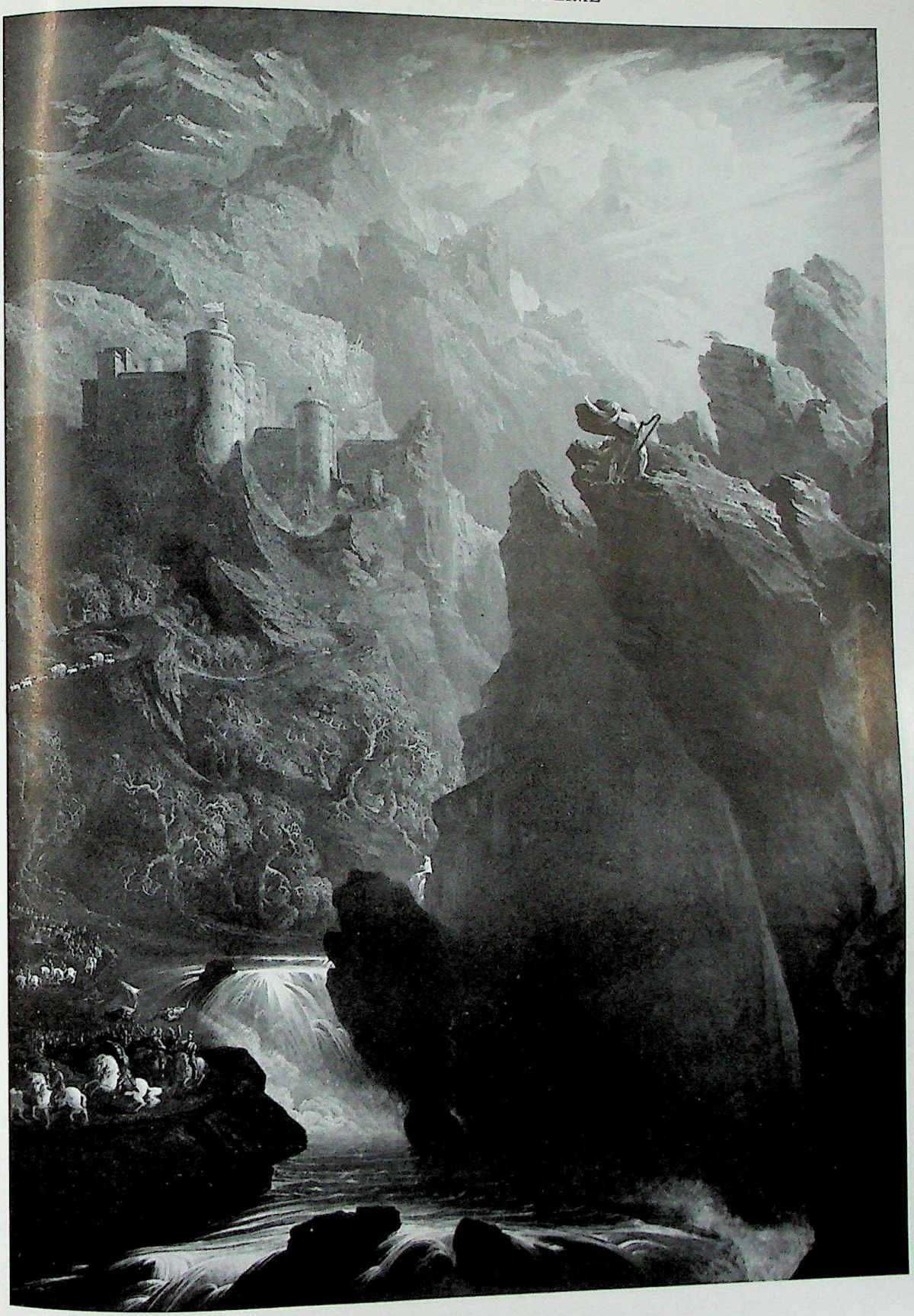
Pl. 183. *Above*: S. Rosa (1615–73), Landscape with Mercury and the Woodman. Canvas, 4 ft., 1½ in. × 6 ft., 7½ in. *Below*: R. Wilson (1712/13–82), Llyn-y-cau, Cader Idris. Canvas, 19⅝ × 28⅜ in. Both, London, National Gallery.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 184. *Above*: Hsü Tao-ning (attrib.), Fishing in a Mountain Stream, detail (cf. III, PL. 262), Northern Sung dynasty. Ink on silk. Kansas City, Mo., Nelson Gallery of Art and Atkins Museum. *Below*: J. Crome, Slate Quarries, ca. 1802–05. Canvas, 4 ft., 4 in. × 5 ft., 2 in. London, Tate Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

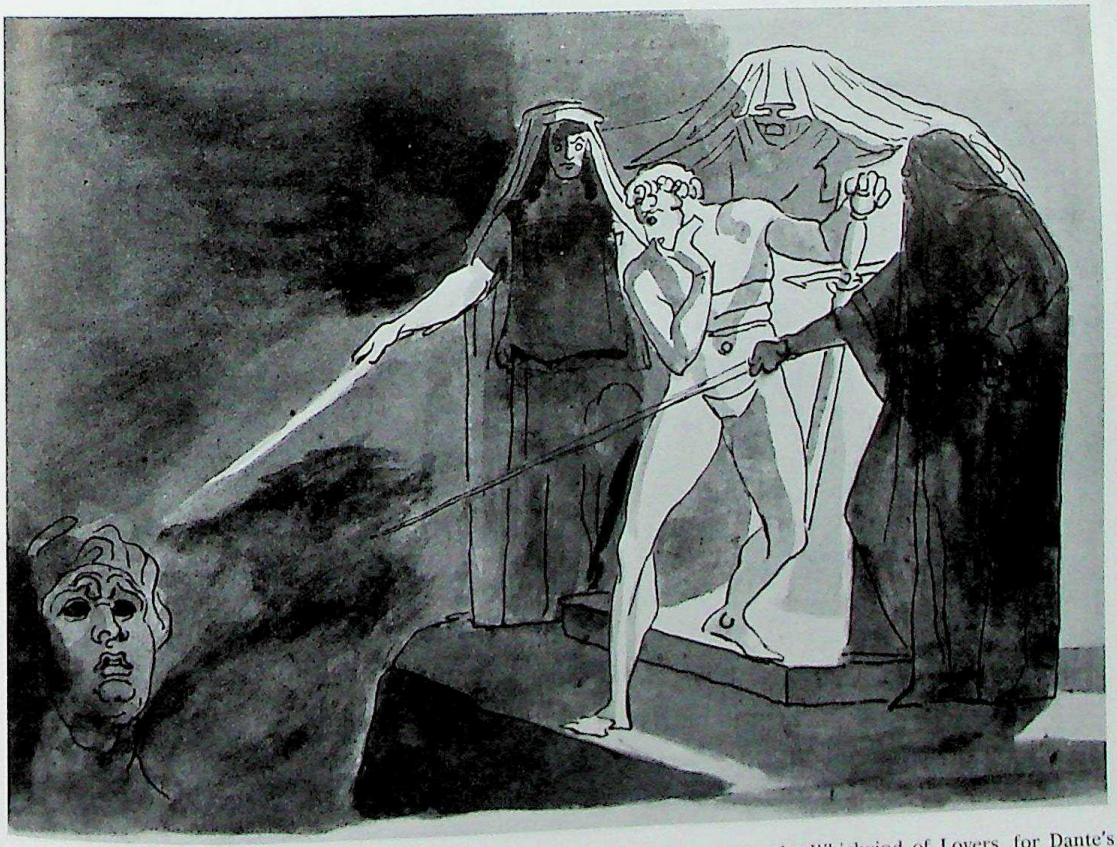


Pl. 185. J. Martin, The Bard, 1817. Canvas, 7 ft. × 5 ft., 1 in. Newcastle upon Tyne, England, Laing Art Gallery.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

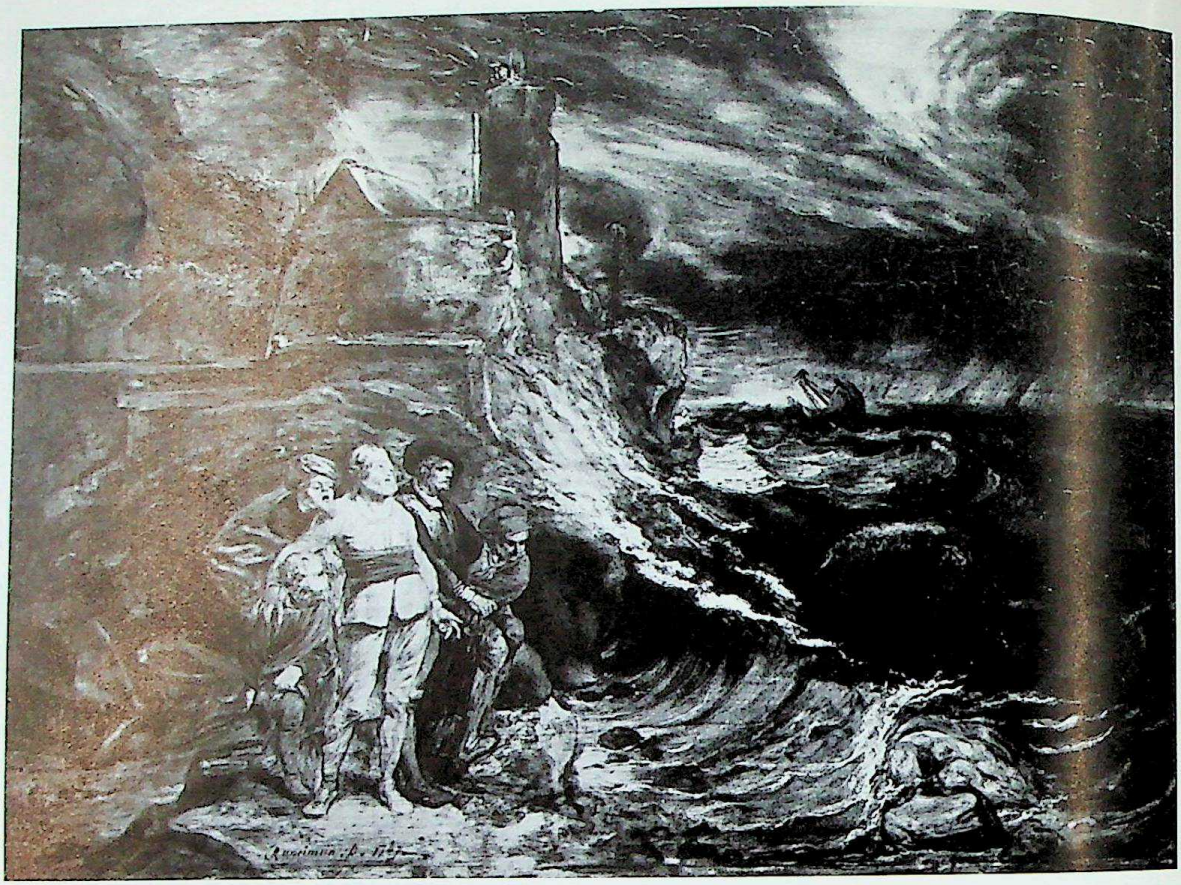
Pl. 186. S. Rosa, L'Umana Fragilità, ca. 1657 (?). Canvas, 6 ft., 6 3/8 in. × 4 ft., 4 3/8 in. Cambridge, England, Fitzwilliam Museum.

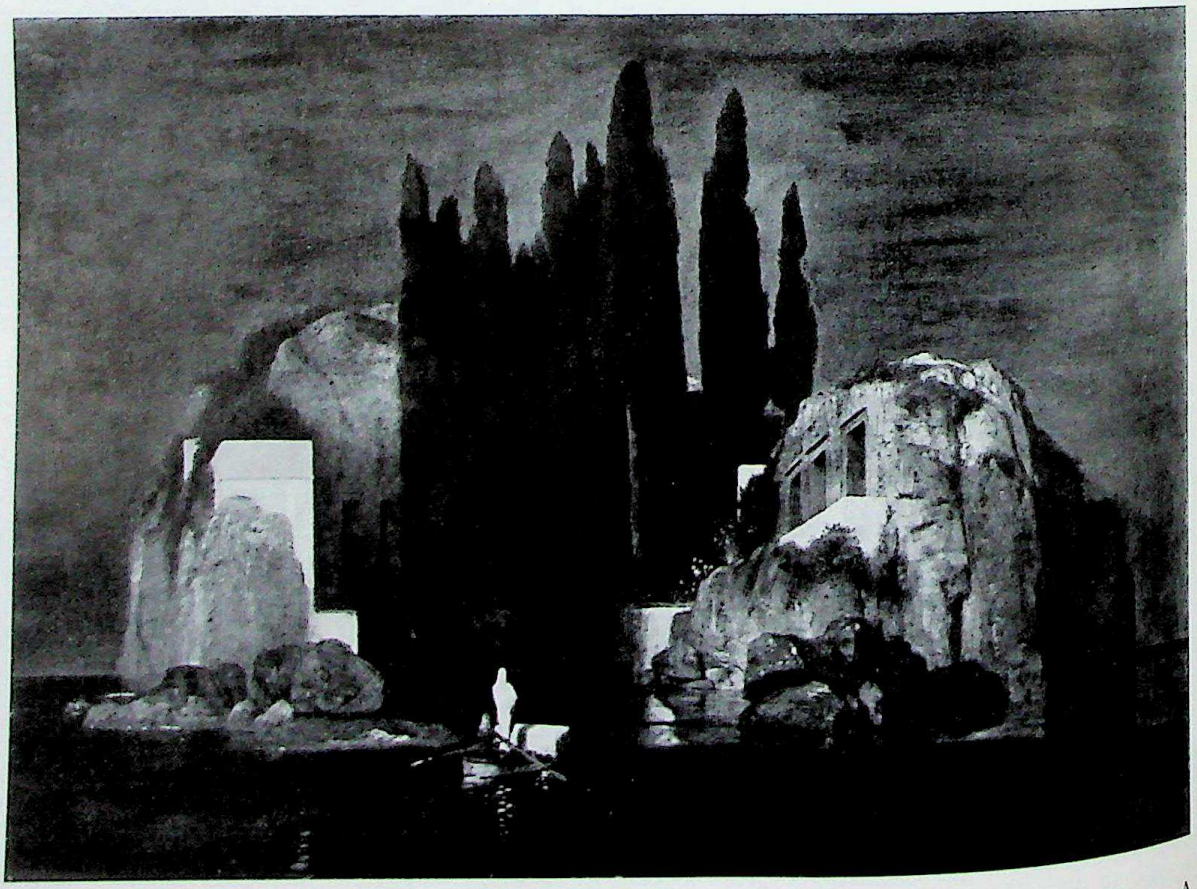
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 187. *Above*: W. Blake, The Circle of the Lustful: Paolo and Francesca in the Whirlwind of Lovers, for Dante's *Inferno*, 1824–27. Ink and water color, $14^{3}/_{4} \times 20^{7}/_{8}$ in. Birmingham, England, City Museum and Art Gallery. *Below*: H. Fuseli, Macbeth and the Armed Head, ca. 1775. Pen and wash, $10 \times 14^{3}/_{4}$ in. London, British Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 188. *Above*: J. Runciman, King Lear, 1767. Canvas, 18×24 in. Edinburgh, National Gallery of Scotland. *Below*: A. Böcklin, The Isle of the Dead, 1880. Panel, 3 ft., 7¾ in. × 5 ft., 1⅜ in. Basel, Kunstmuseum.

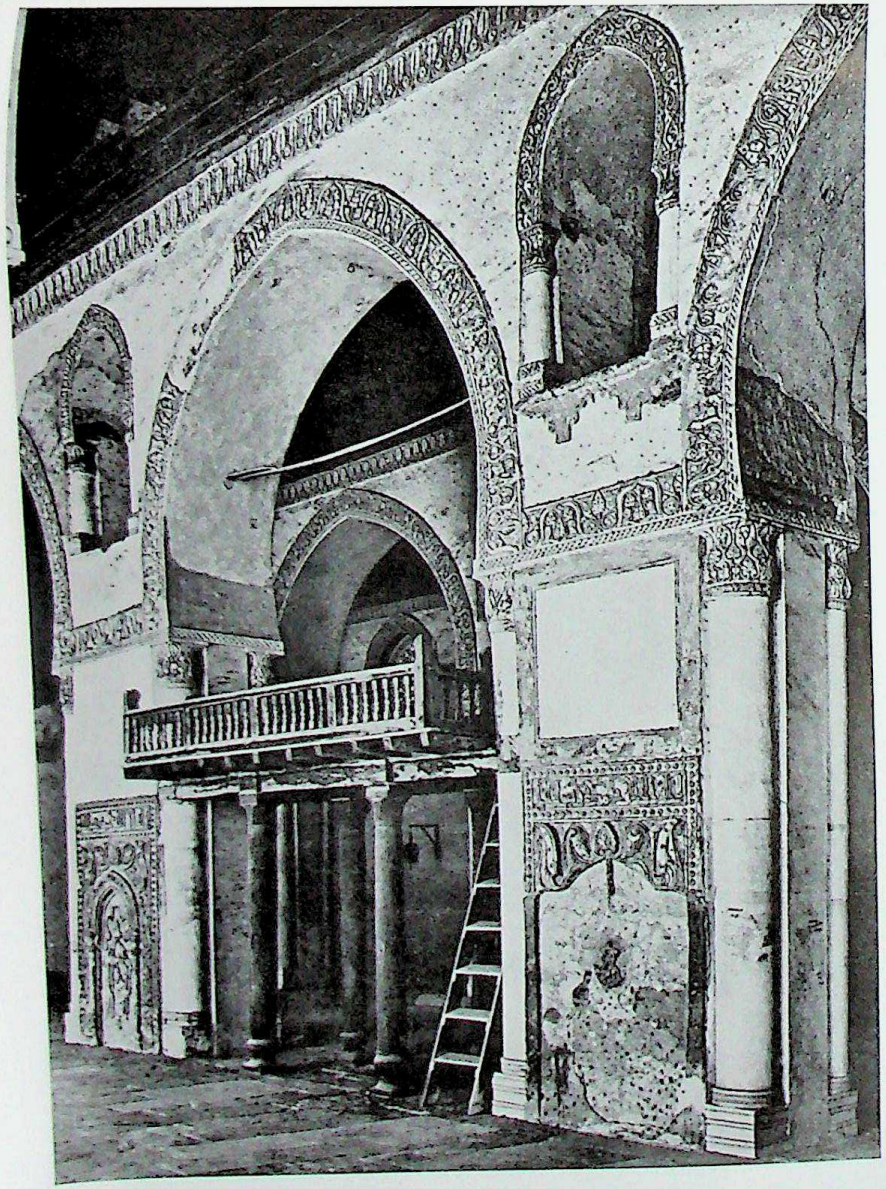
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

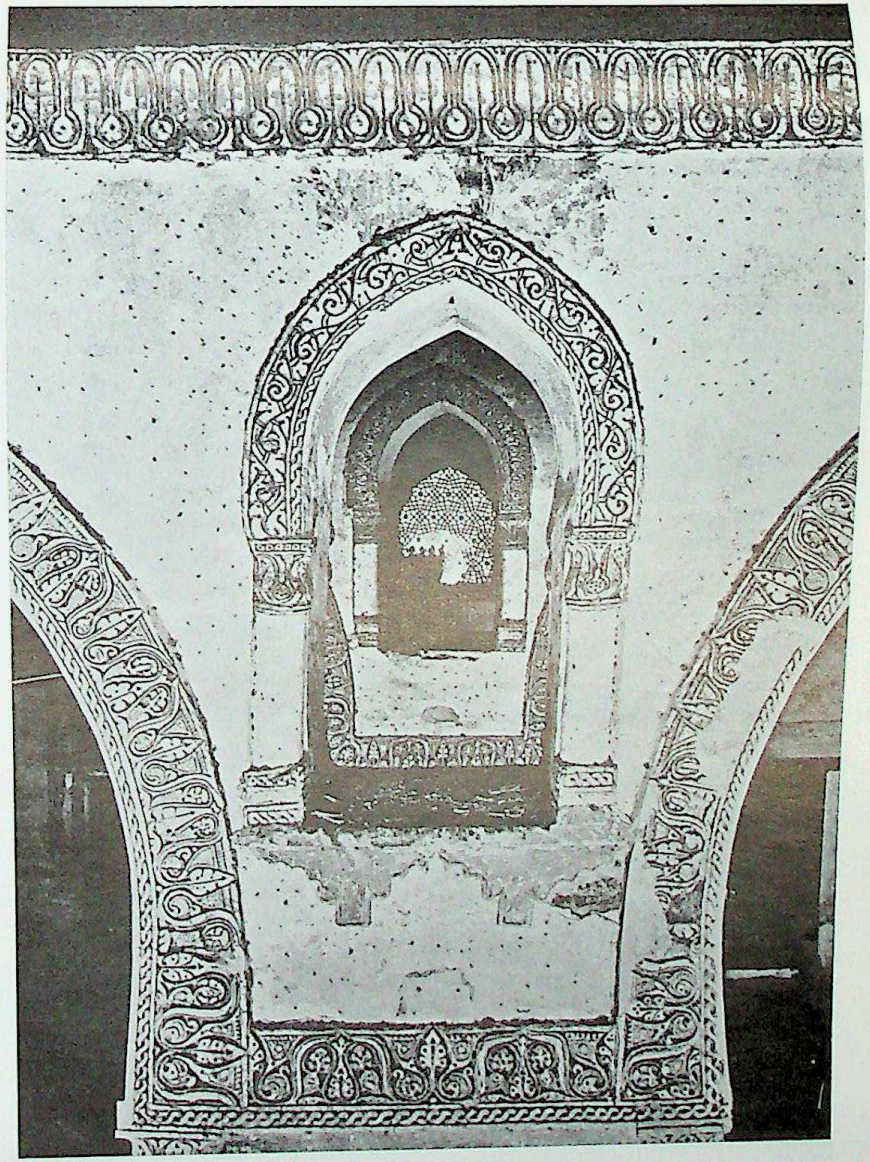
Pl. 189. Cairo, Mosque of Ibn-Ṭūlūn, completed 879, northeastern façade of the mosque proper and *ziyāda* (partly cleared).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 190. Cairo, Mosque of Ibn-Tulūn, completed 879, view of arcades within the sanctuary.

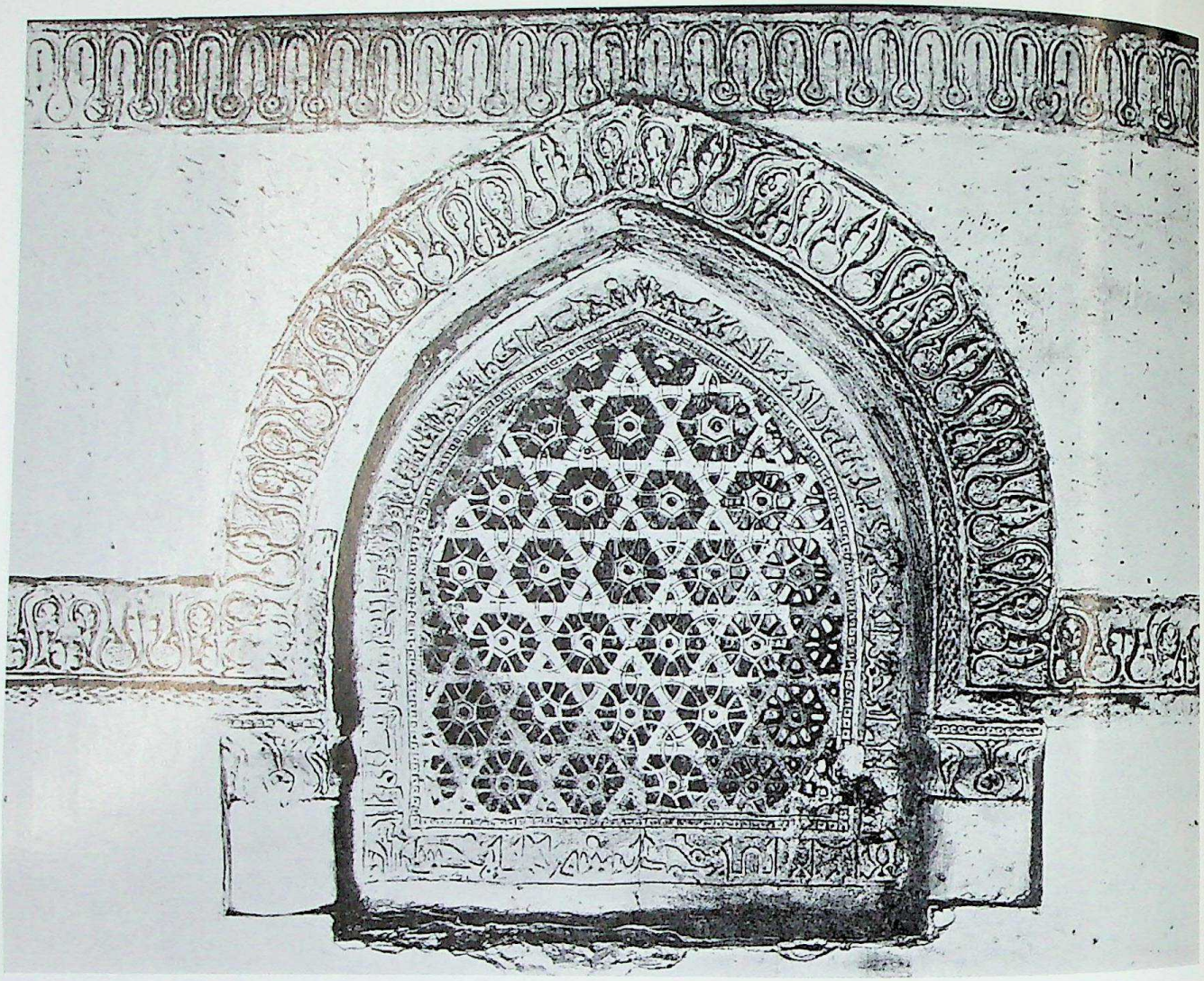
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

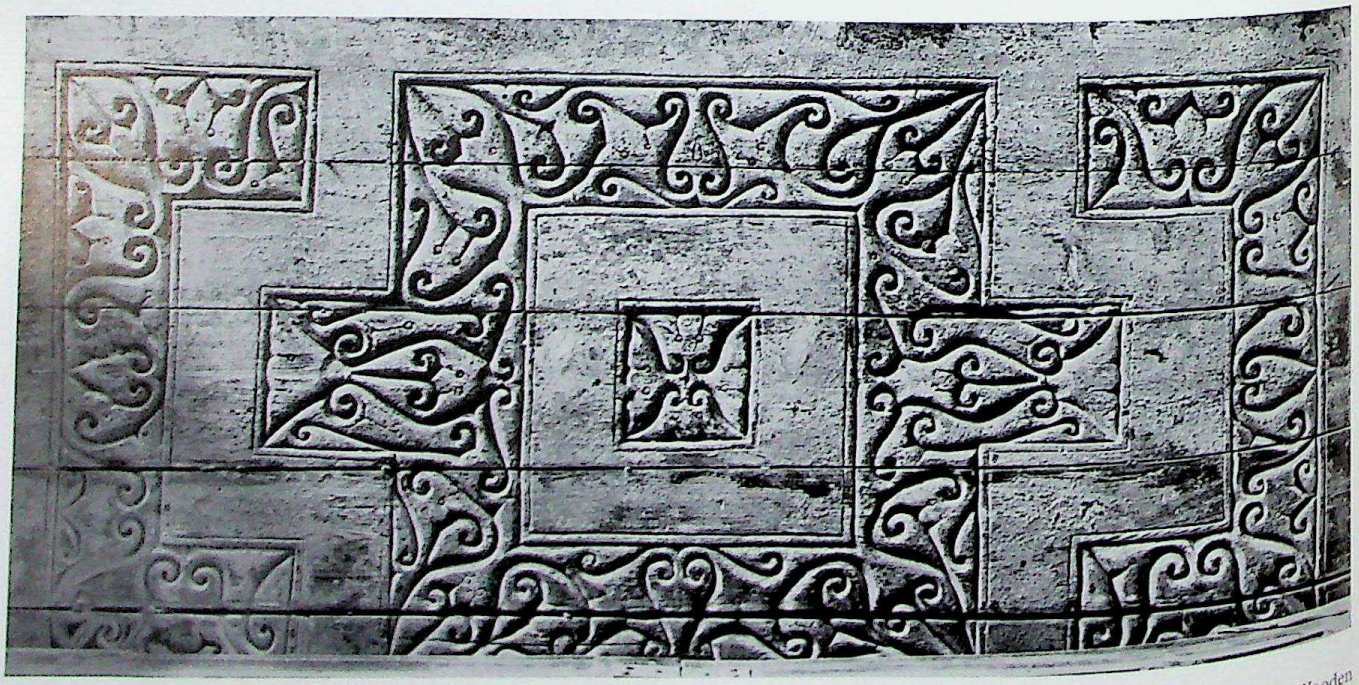




Pl. 191. Cairo, Mosque of Ibn-Ṭūlūn, completed 879, sanctuary. *Left*: The *dikka* flanked by supplementary stucco mihrabs, in the second arcade (from *qiblа* wall). *Right*: View of arched opening above pier (detail of *left*).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 192. Cairo, mosque of Ibn-Ṭūlūn, completed 879. *Above*: Interior view of sixth window from left, *qibla* wall. *Below*: Wooden soffit of a doorway.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 193. Landscape with Straw Hut. Ink on paper, 5 ft., 1 in. × 2 ft., 3 in. Woodside, N.Y., H. H. Wang Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

千字文

勅梁員外散騎常侍周興

嗣次韻

天地玄黃宇宙洪荒日月盈昃

辰宿列張寒來暑往秋收冬藏

閏餘成歲律呂調陽雲騰致雨

露結為霜金生麗水玉出崑崗劍

號巨闕珠稱夜光菓珍李柰菜

重芥薑海鹹河淡鱗潛羽翔龍師

火帝鳥官人皇始制文字乃服衣

裳推位讓國有虞陶唐弔民伐罪

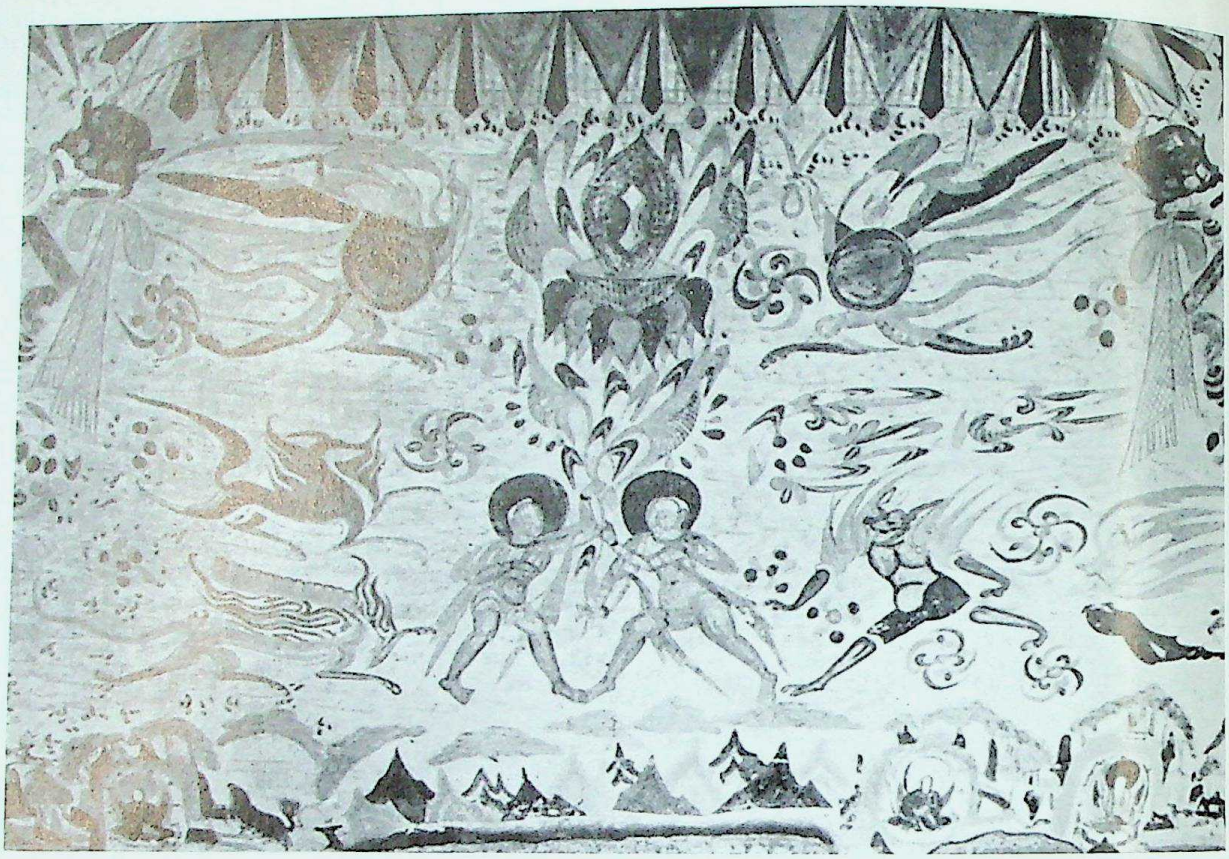
周發殷湯坐朝問道垂拱平章愛

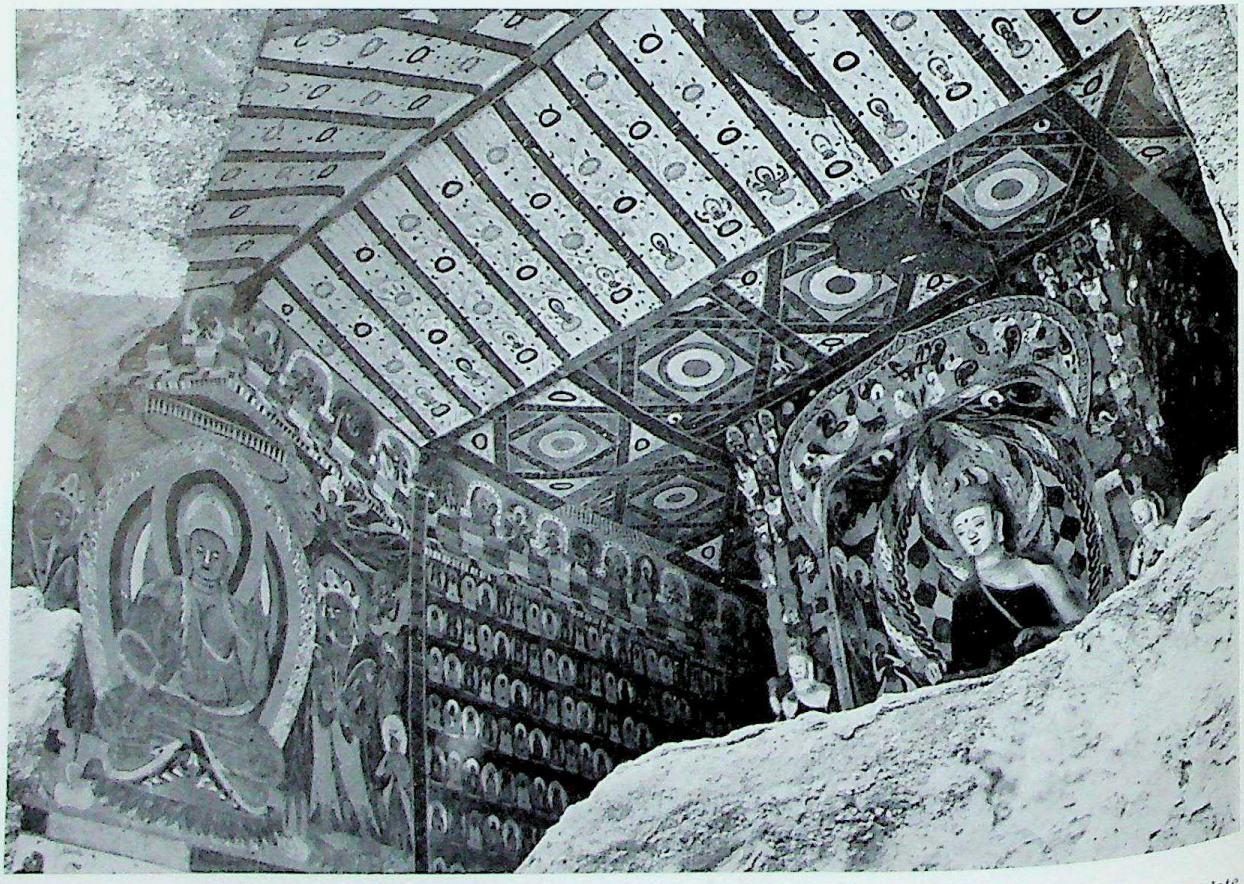
Pl. 194. *Above*: First two leaves from the album *Ch'ien-tzu Wên* ("The Thousand-character Essay"). Ink on paper; each leaf, $9^{1}/_{8} \times 6$ in. Taichung, Formosa, National Palace Museum. *Below*: Calling the Hermit at Ching-hsi, detail of a hand scroll. Ink on paper; full size, $11^{1}/_{8} \times 47^{1}/_{2}$ in. New York, H. C. Weng Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 195. Śākyamuni standing on the Vulture Peak, wall painting in Cave 249 (P101), late 5th-6th cent.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 196. *Above*: Fu-hsi and Nü-wa, yakshas, and Vāyu, demon of the wind, wall painting in Cave 285 (P120 N), late 5th–6th cent. *Below*: Interior of the sanctuary, Cave 251 (P103), showing a sculptured Buddha and numerous painted buddhas, late 5th–6th cent.

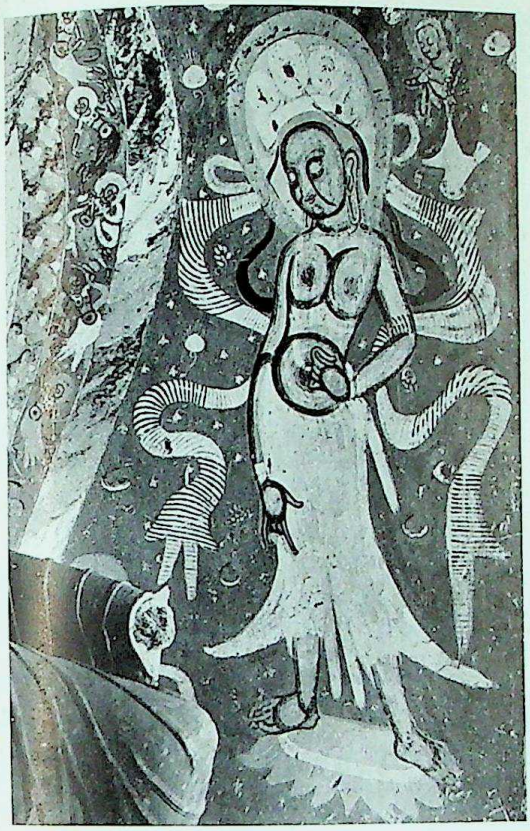
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 197. The Paradise of Amitābha, 8th–9th cent. Painting on silk, 4 ft., 6 in. × 3 ft., 4 in. London, British Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 198. Kuan-yin leading a soul toward Paradise, ca. 9th cent. Painting on silk, 2 ft., 7½ in. × 1 ft., 9 in. London, British Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 199. *Above, left*: Devata with nimbus, detail of a wall painting in Cave 272 (P188 J), late 5th cent. *Right*: Bodhisattva surrounded by acolytes, detail of a wall painting, ca. 7th–8th cent. *Below, left*: Arhat, detail of a wall painting in Cave 217 (P70), 8th–9th cent. *Right*: Arhat and bodhisattva, sculptures in Cave 159 (P21 bis), 7th–9th cent. Painted clay.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 200. Seated Buddha, left part of a diptych, ca. 7th cent. Wood, ht., 10¼ in. Paris, Musée Guimet.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 201. Allegorical Figure (Venus or Spring). Panel, 45 3/4 × 28 in. London, National Gallery.

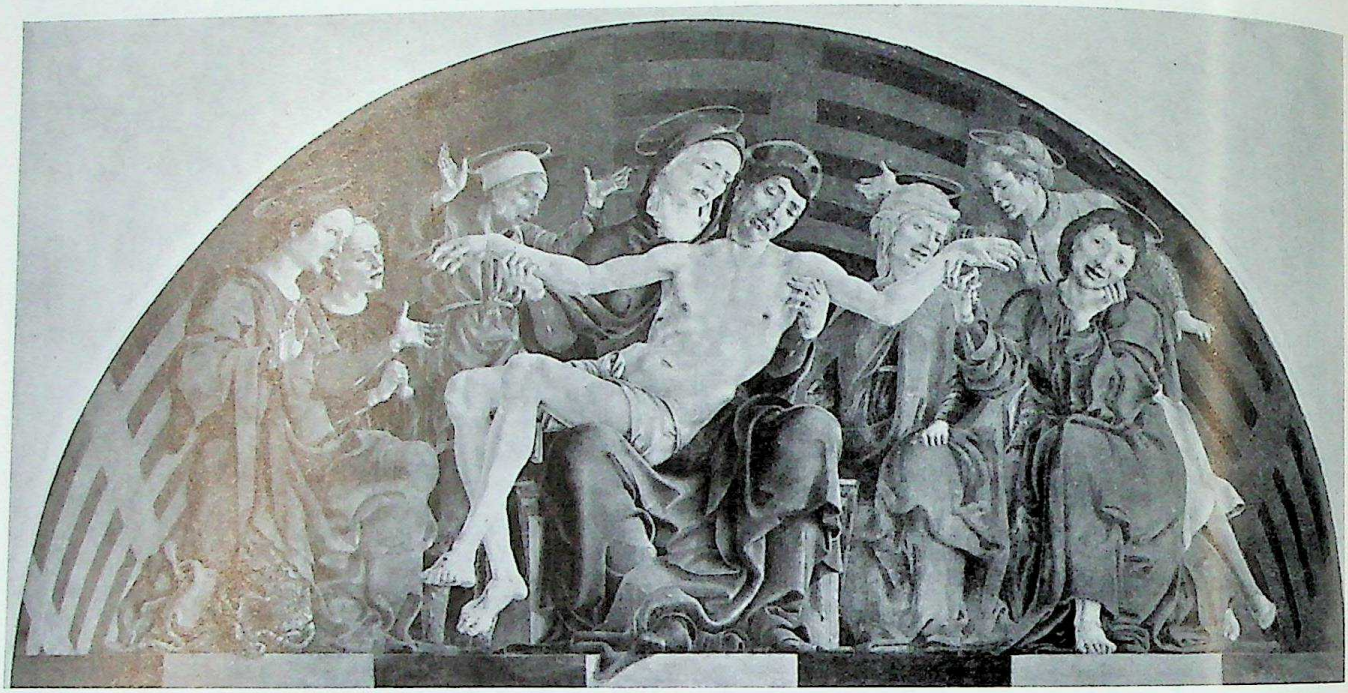
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 202. St. George Slaying the Dragon, outer sides of organ door. Tempera on canvas; each wing, 13 ft., 6½ in. × 5 ft., 6 in. Ferrara, Italy, Museo dell'Opera del Duomo.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 203. The Annunciation, inner sides of organ door. Tempera on canvas; each wing, 13 ft., 6½ in. × 5 ft., 6 in. Ferrara, Italy, Museo dell'Opera del Duomo.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

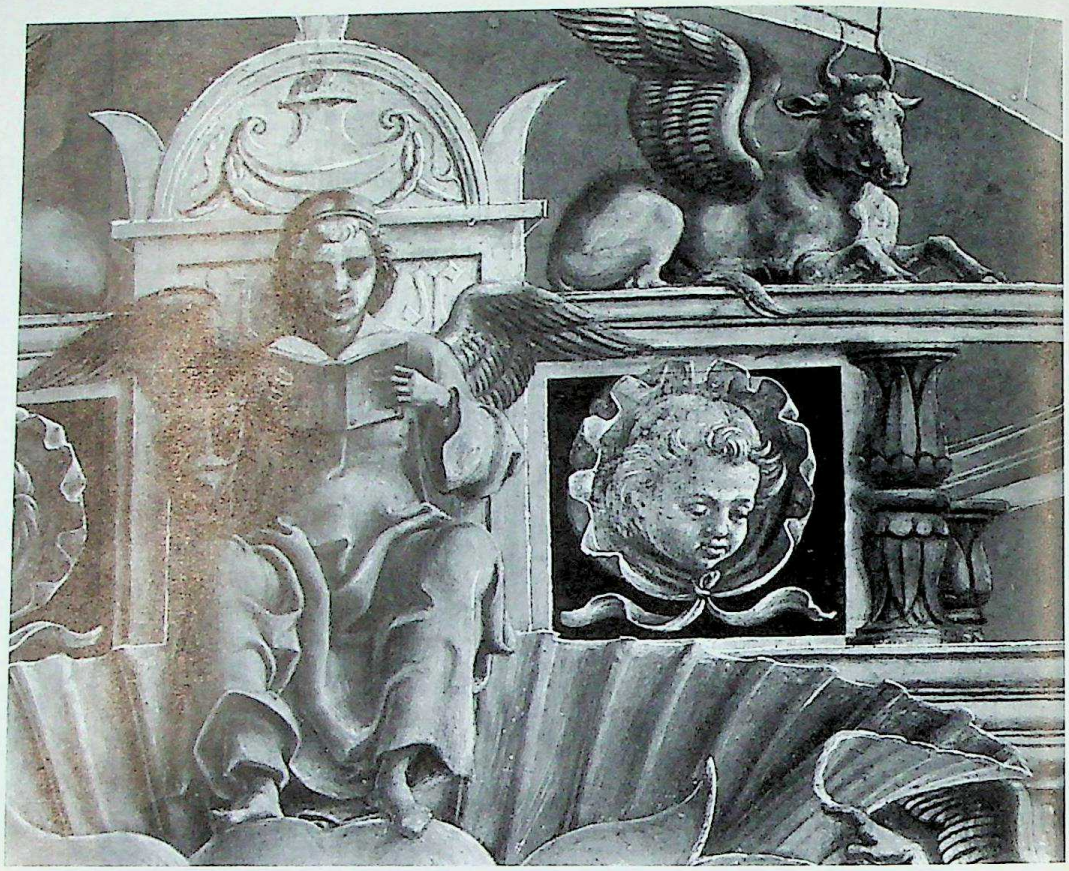


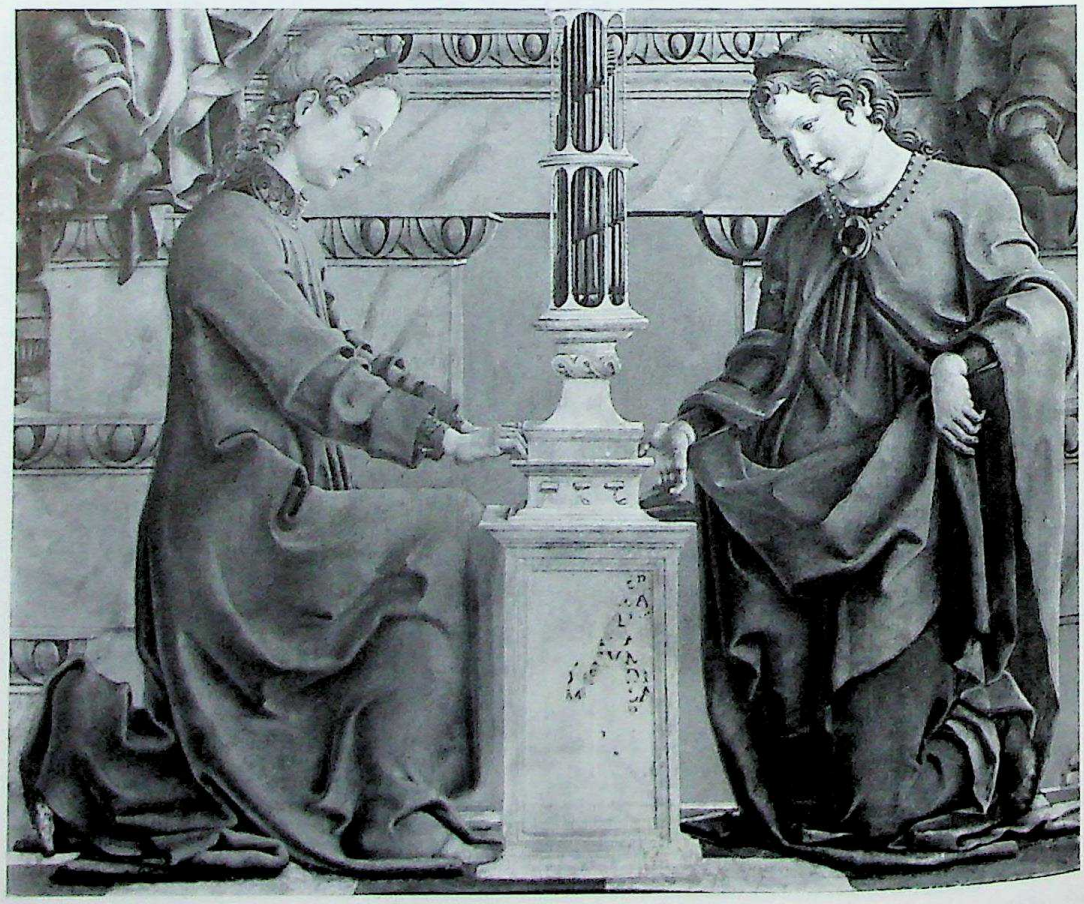
Pl. 204. *Above*: The Lamentation, lunette of the Roverella Altarpiece. Panel, 4 ft., 4 in. × 8 ft., 9 in. Paris, Louvre. *Below*: The Condemnation (*right*) and Execution (*left*) of St. Maurelius, tondos of the St. Maurelius Altarpiece. Panel, diam., each 21 in. Ferrara, Italy, Pinacoteca.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 205. SS. Paul and Maurelius with Nicolò (?) Roverella, panel of the Roverella Altarpiece. Panel, 5 ft., 5/8 in. × 2 ft., 6 in. Rome, Galleria Colonna.

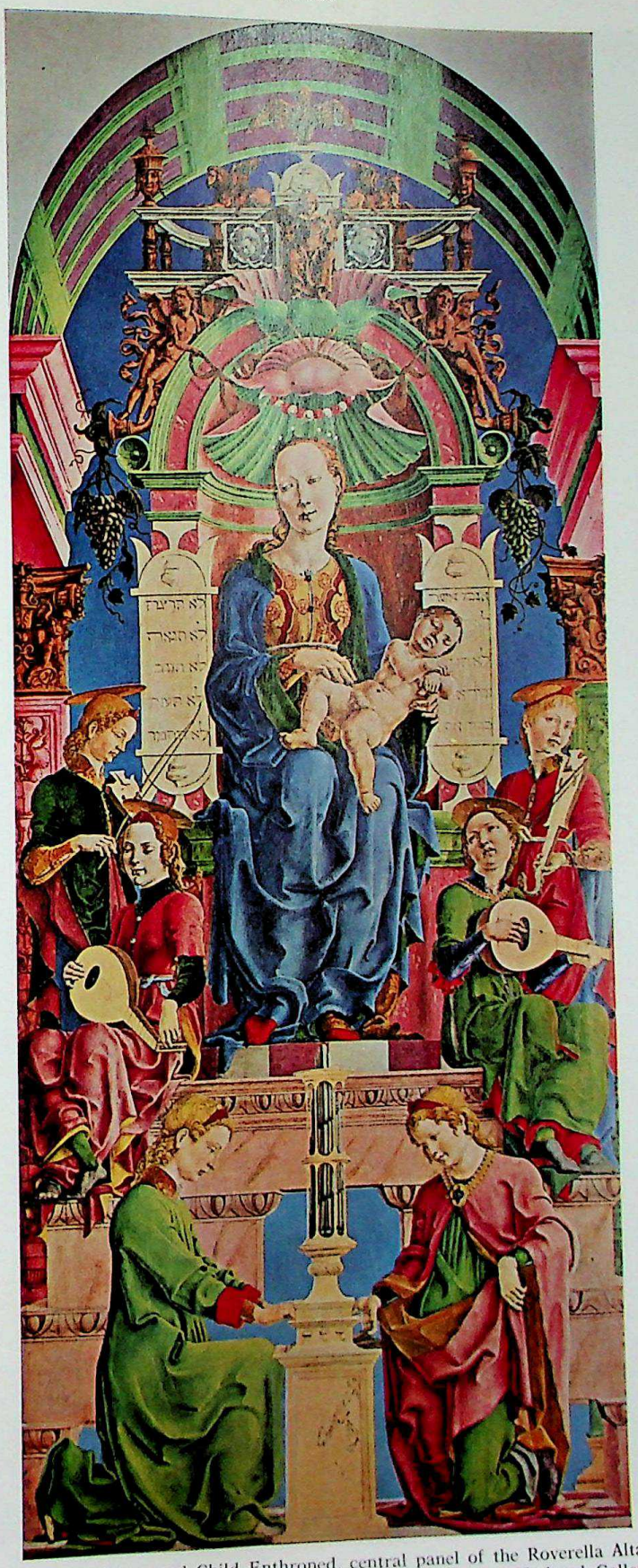
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 206. Details of PL. 207.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 207. Madonna and Child Enthroned, central panel of the Roverella Altarpiece. Panel, 7 ft., 10½ in. × 3 ft., 4 in. London, National Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 208. Detail of PL. 202, St. George Slaying the Dragon.

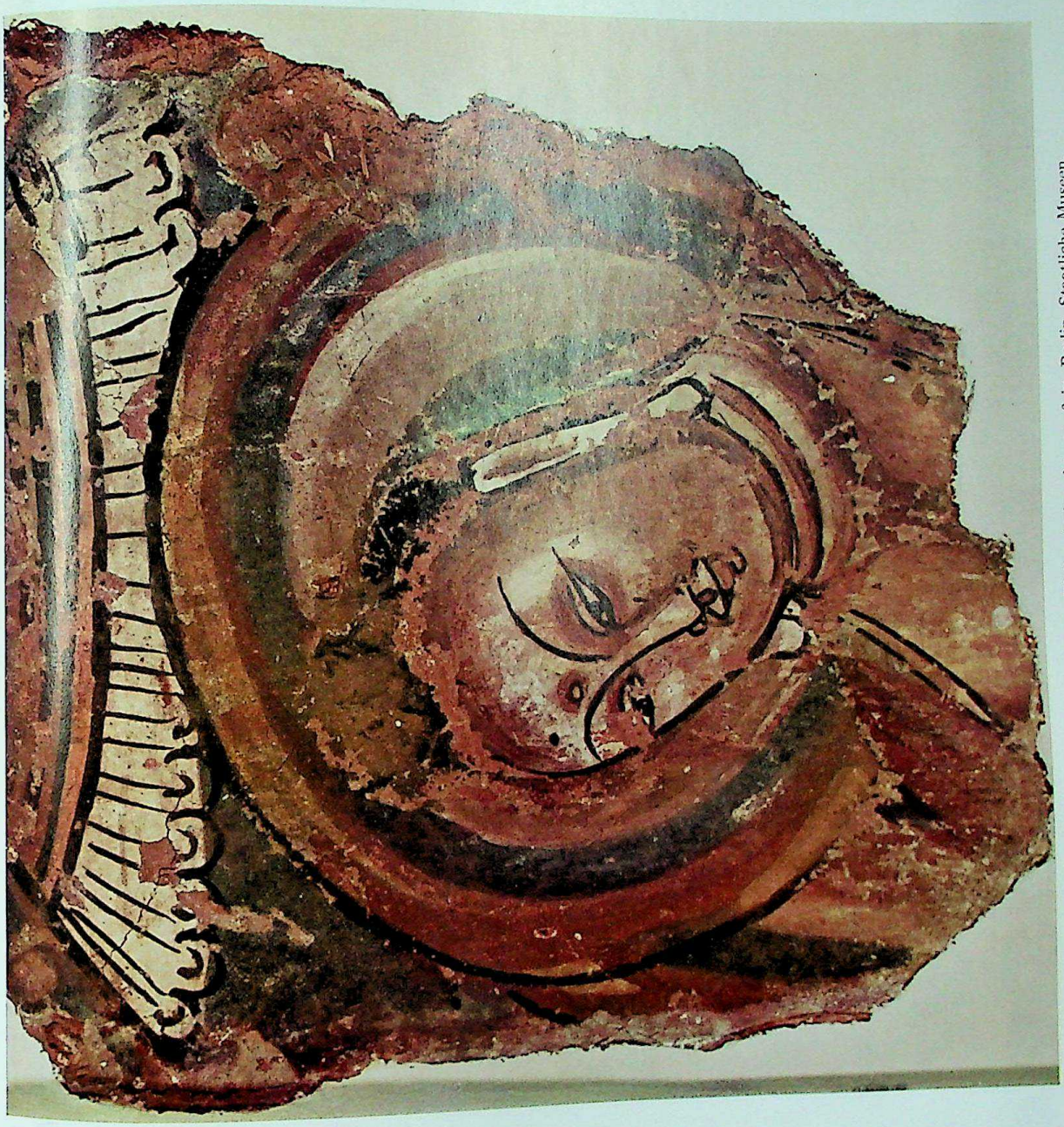
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 209. Devas in adoration, from Bezeklik, 8th-9th cent. Wall painting, ht., 3 ft., 2 in. New Delhi, National Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 210. Gesticulating monk, fragment, recovered from Turfan, 8th–9th cent. Painting on silk. Berlin, Staatliche Museen.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 211. Fragmentary Buddha, from Khocho, 7th-8th cent. Wall painting, ht., ca. 8 in. Berlin, Staatliche Museen.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 212. Praying figure, detail of a wall painting, from Bezeklik, 8th–9th cent. New Delhi, National Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 213. Bodhisattva with attendants and worshipers, from Bezeklik, 8th-9th cent. Wall painting; ht. of figure, ca. 9 ft. New Delhi, National Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 214. Four-armed Tantric divinity, from Bezeklik, 10th cent. Wall painting, ht., 4 ft. New Delhi, National Museum.

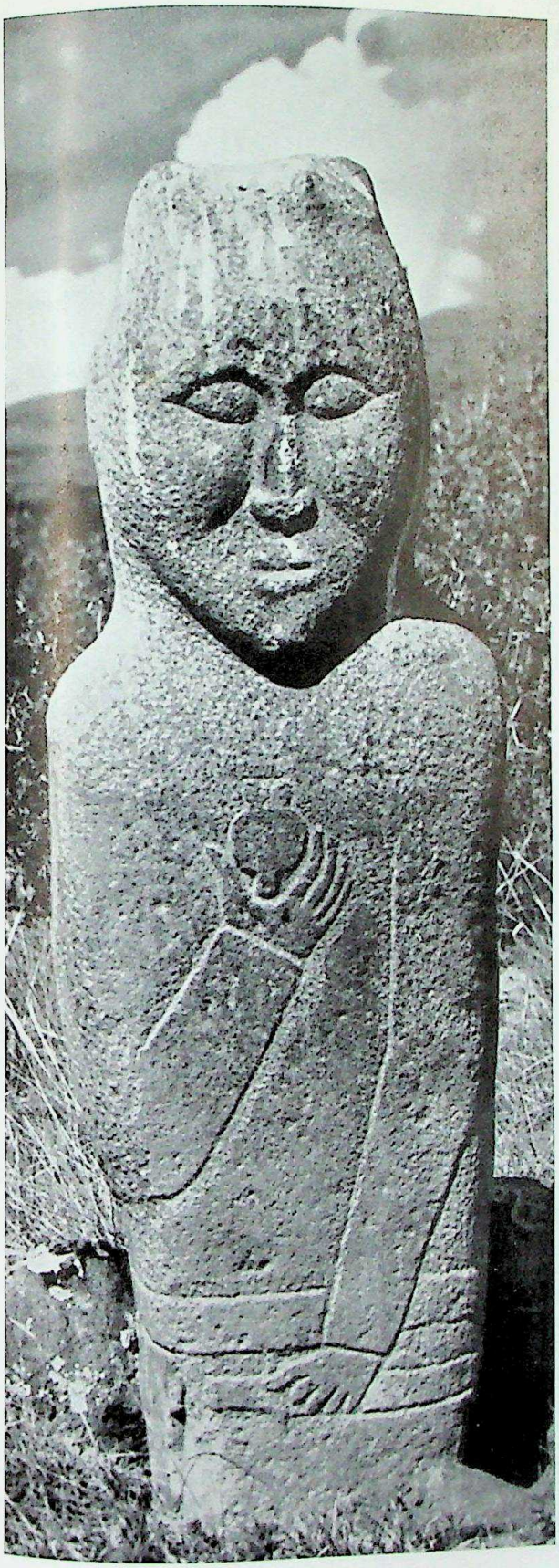
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

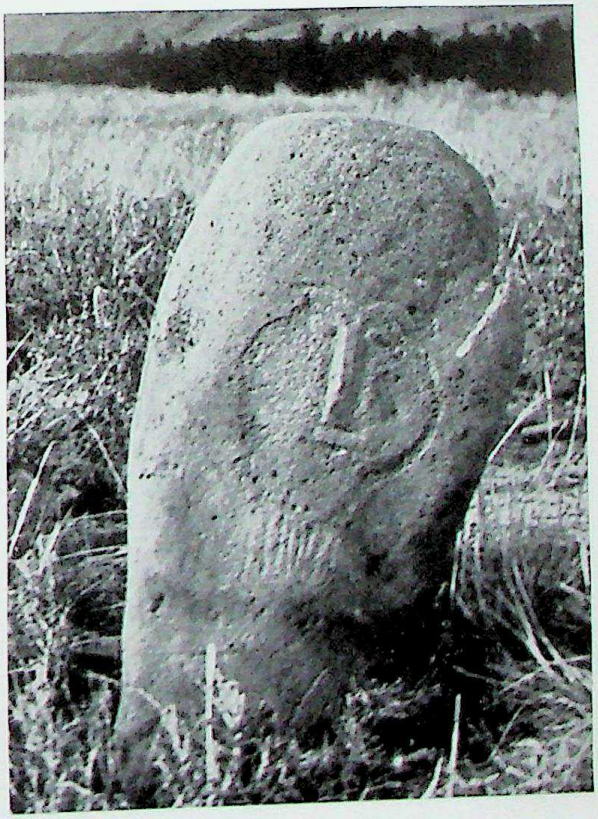
Pl. 215. Avalokiteśvara standing on a lotus, fragment from Bezeklik, 8th–9th cent. Wall painting, ht., 3 ft., 1 in. New Delhi, National Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 216. Toyuk, near Khocho, ruins on the left bank of the river.

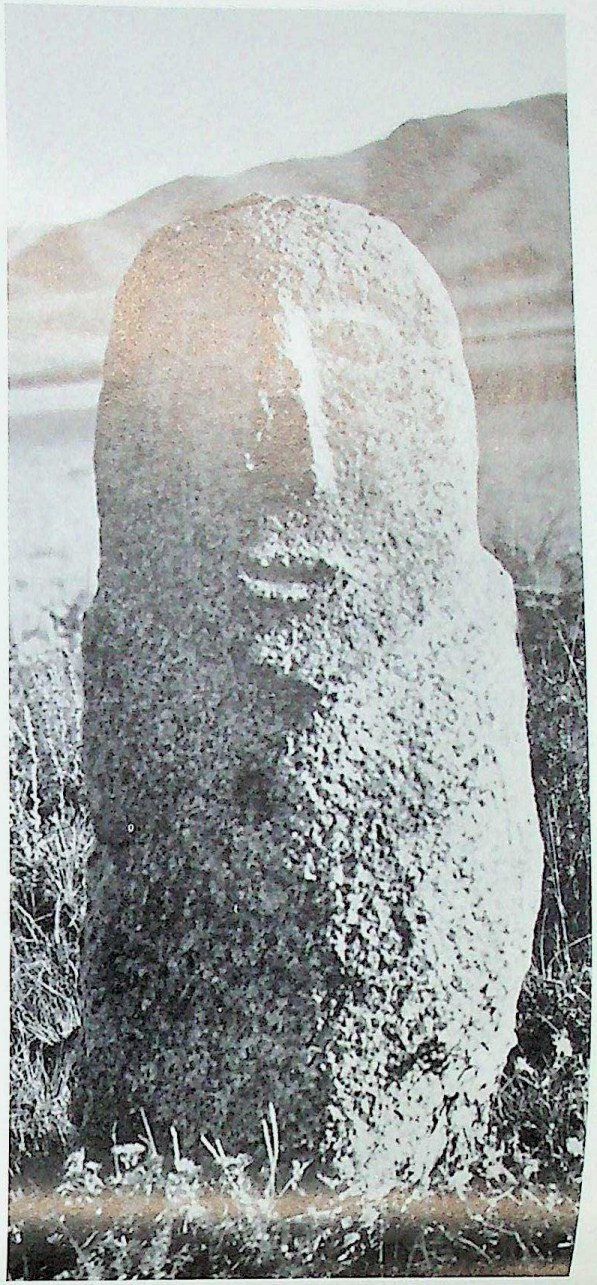
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





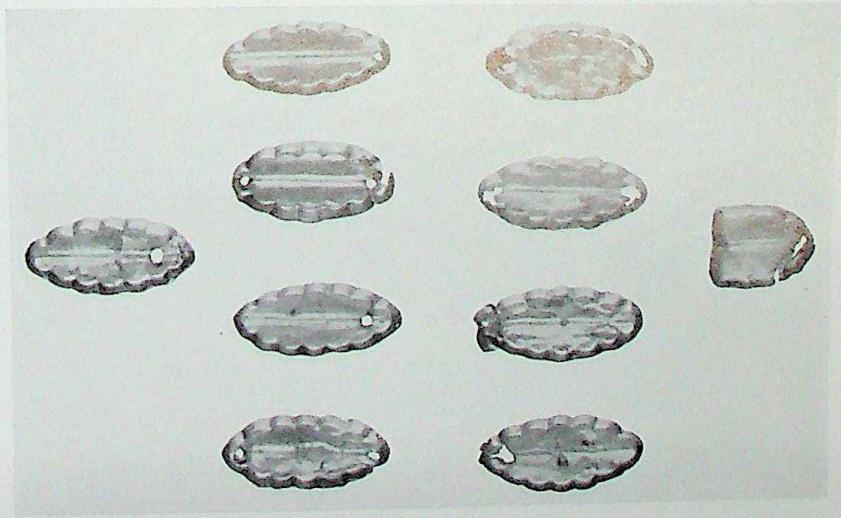
Pl. 217. Stone images, found at Sagly (*left, and right, above*) and Ulaatai (*right, below*), 7th–9th cent.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



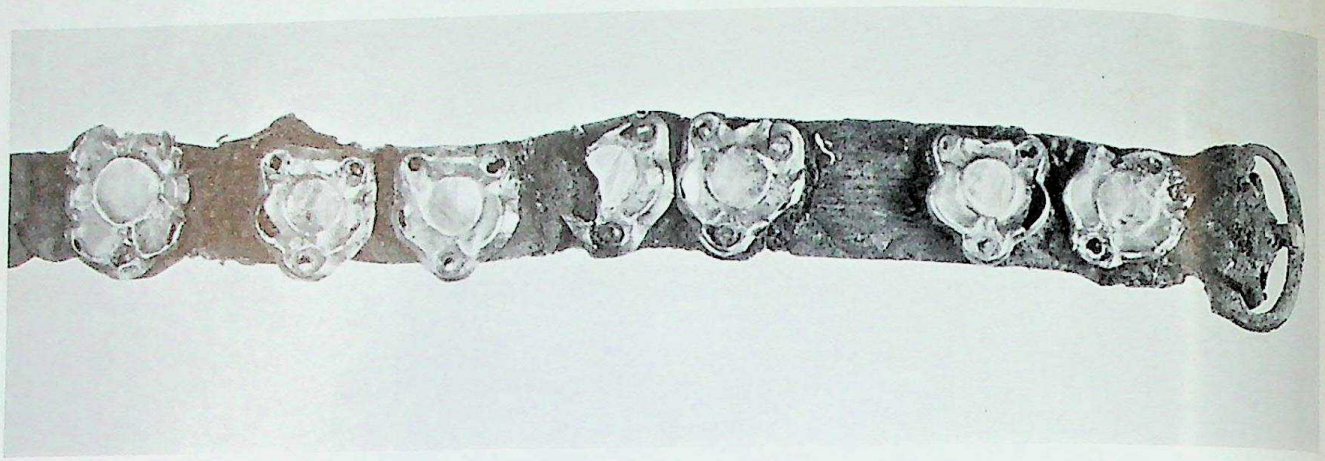
Pl. 218. Stone images, found at Ulaatai (*left and center*) and Kara-Khol (*right*), 7th–9th cent.

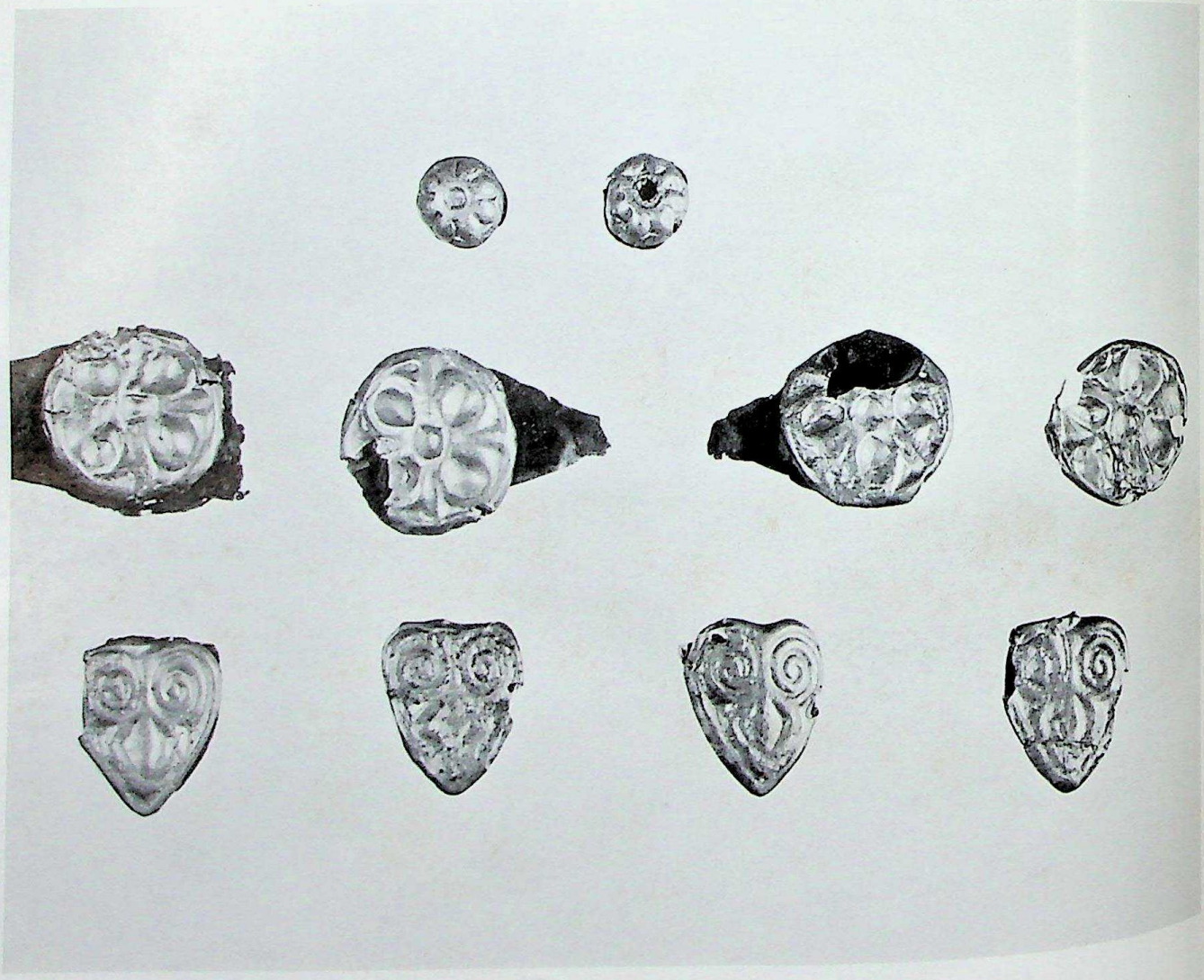
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 219. *Left*: Silver vessel, from Kiop-Kiozhee, 8th–9th cent. *Right, above*: Gold belt plaque, from Sagly, 8th–9th cent. *Below*: Gold ornaments for a headdress, from Kyskash, 7th–9th cent. All, property of the Soviet Government.

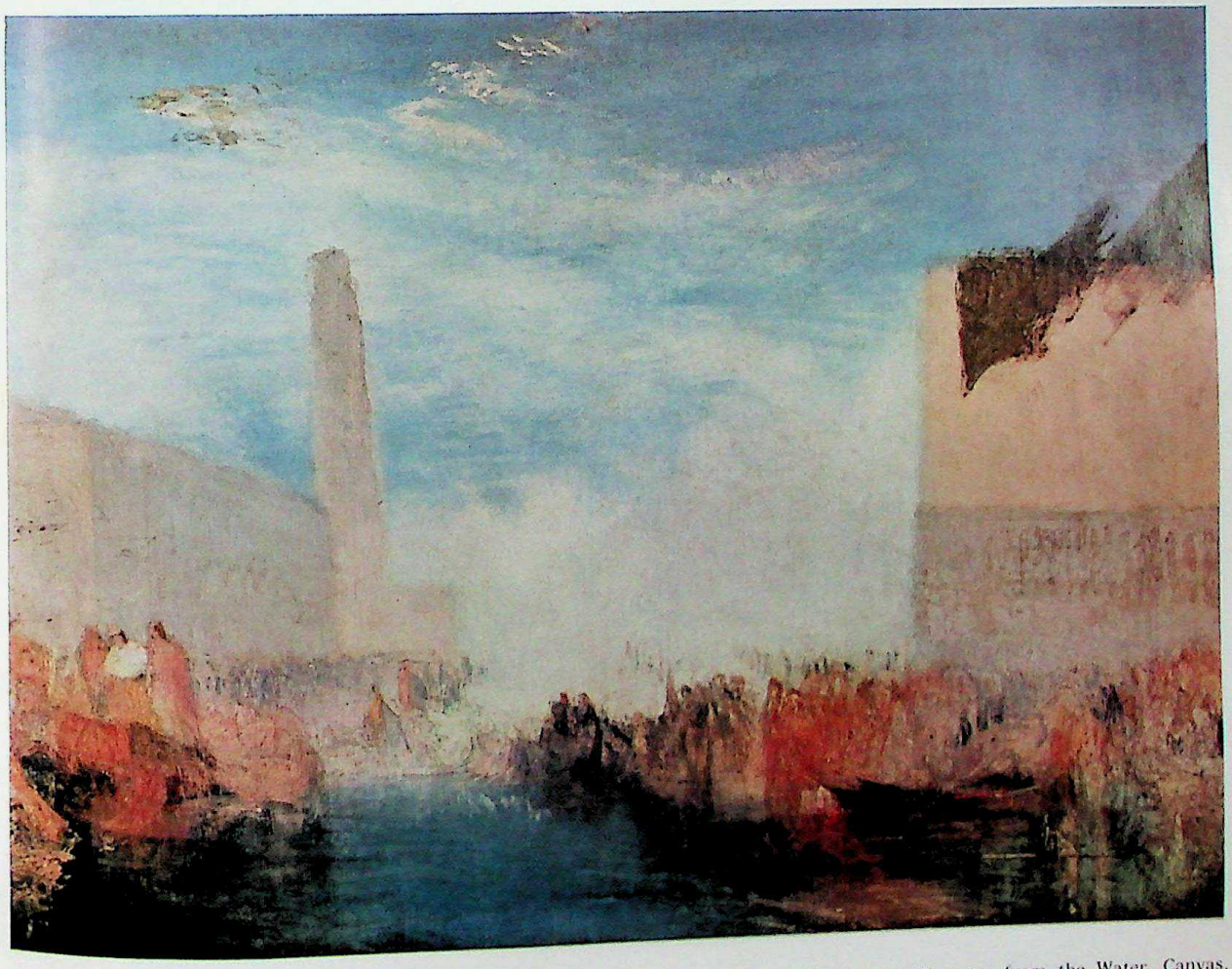
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





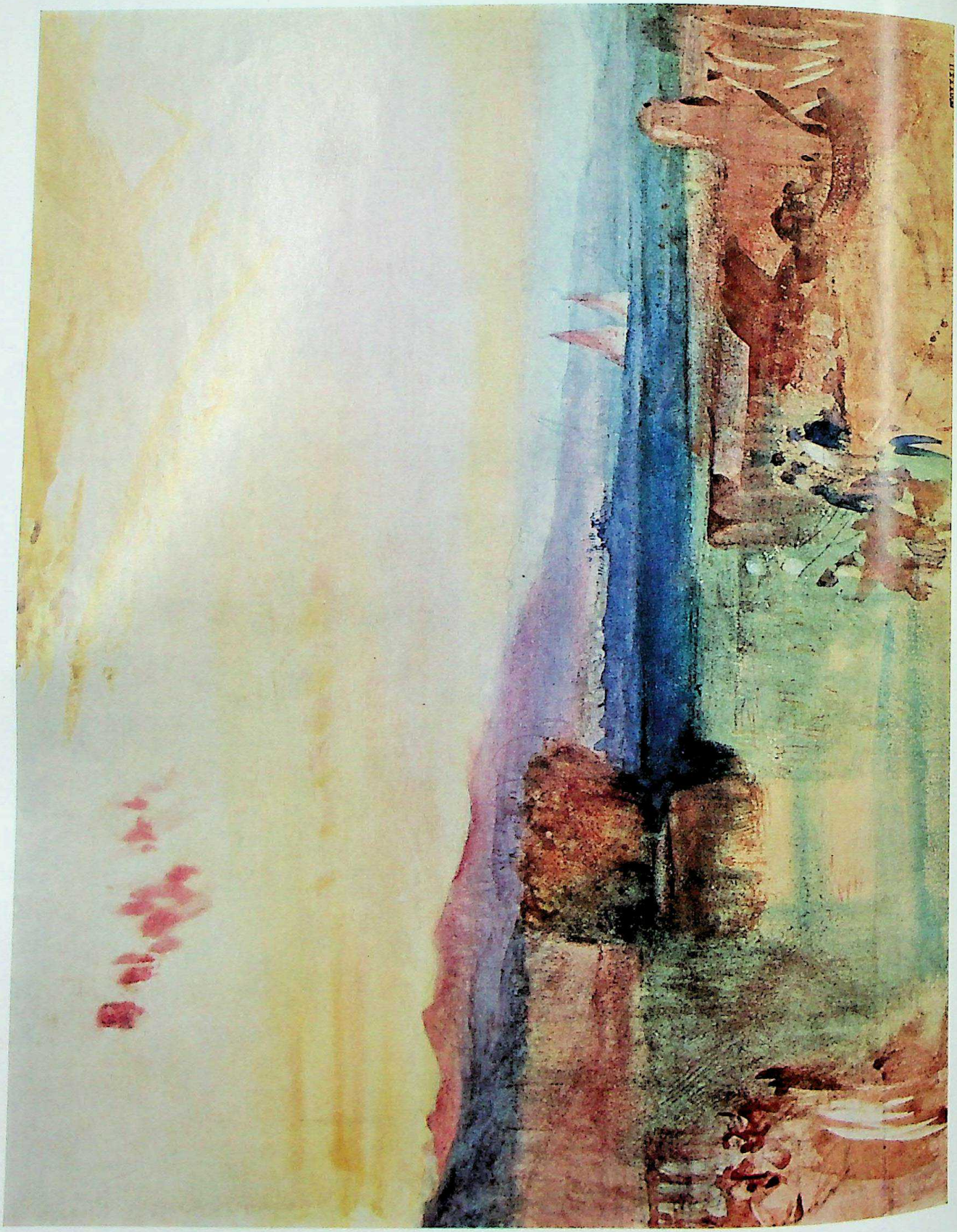
Pl. 220. *Above*: Belt with applied gold plaques, from Kiop-Kiozhee, 8th–9th cent. *Below*: Gold harness ornaments, from Kalbak Tyttyg-Khem, 7th–9th cent. All, property of the Soviet Government.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 221. *Above*: The Thames near Walton Bridges. Thin veneer, 14×29 in. *Below*: Venice, the Piazzetta from the Water. Canvas, 36×48 in. Both, London, Tate Gallery.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

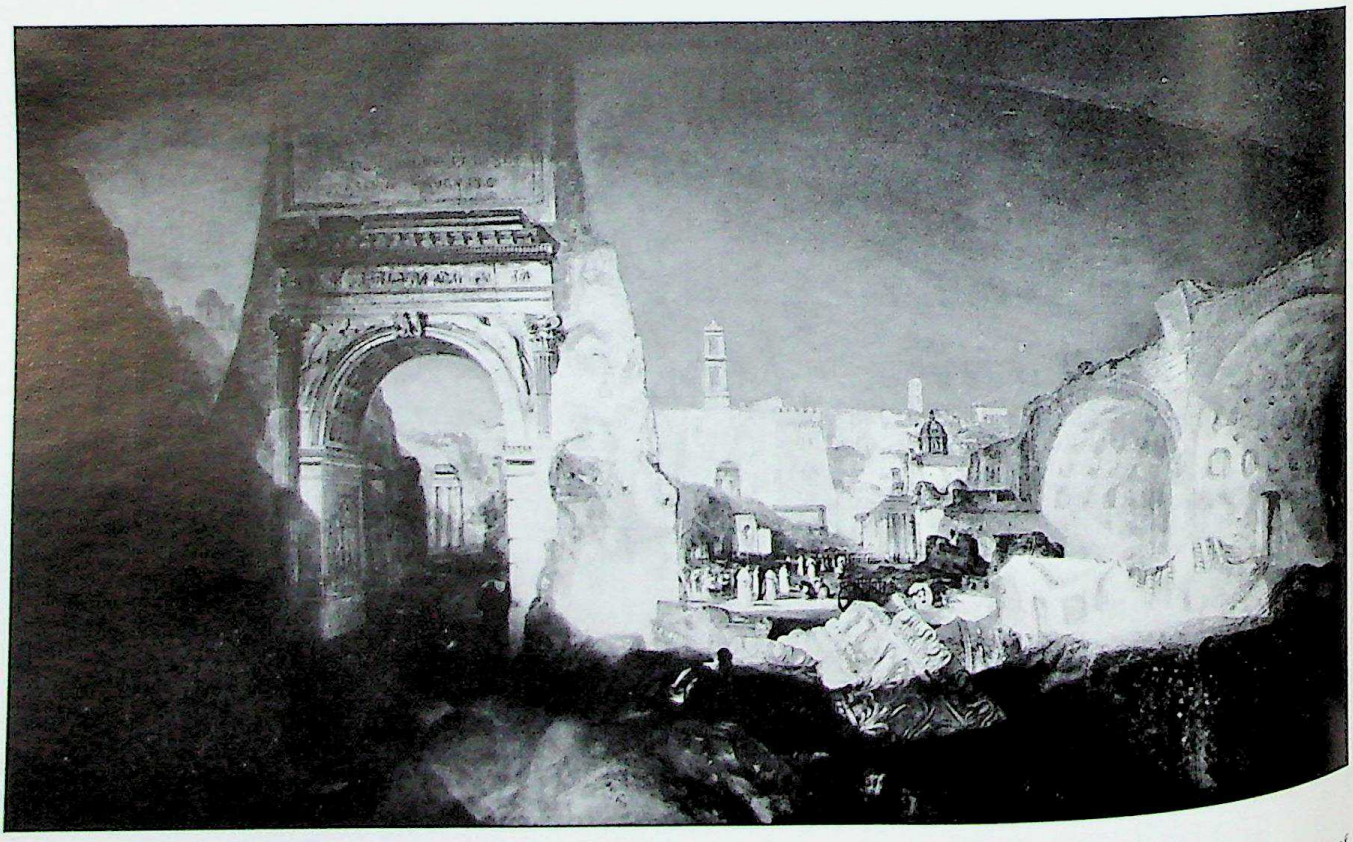


Pl. 222. Geneva, Sunset on Jura. Water color with pencil outlines, 9 × 11½ in. London, British Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

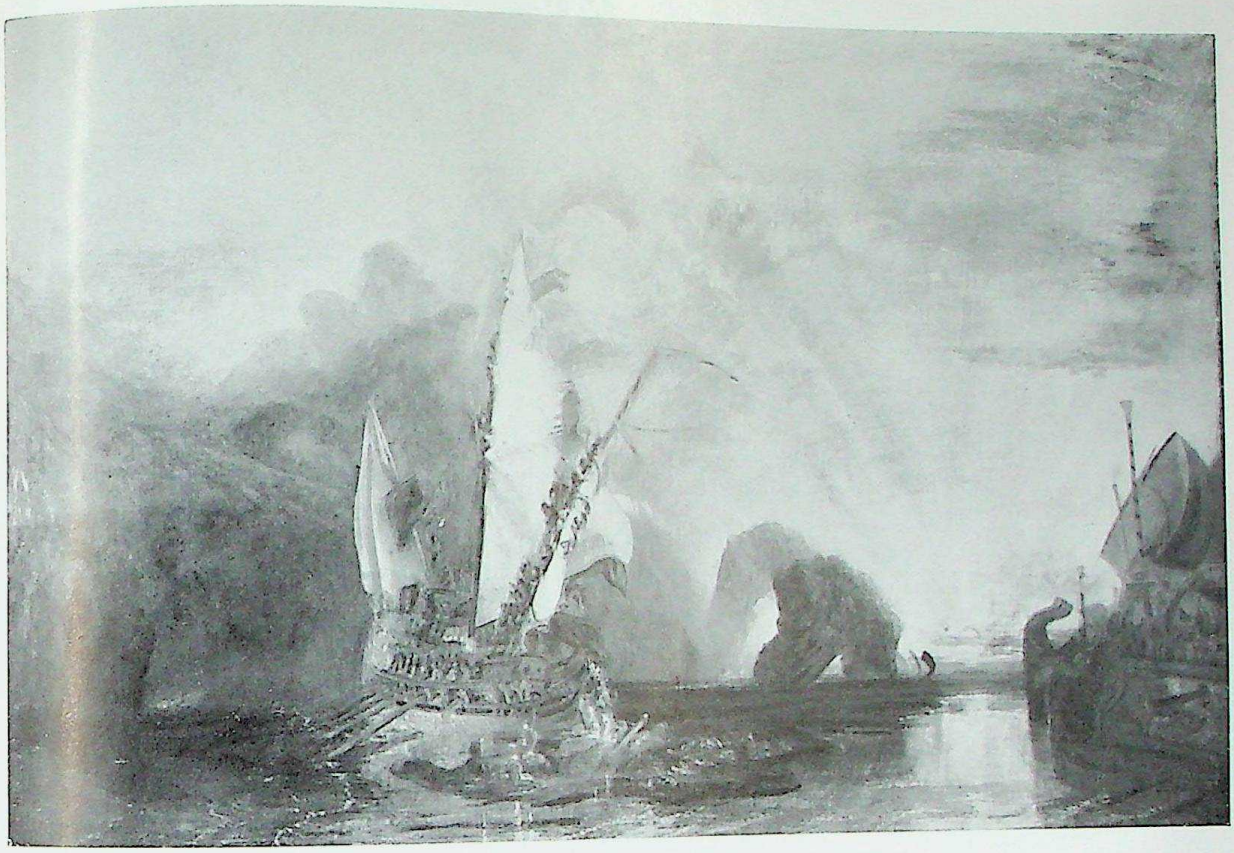
Pl. 223. The Destruction of Sodom. Canvas, 4 ft., 9 in. × 7 ft., 9 in. London, Tate Gallery

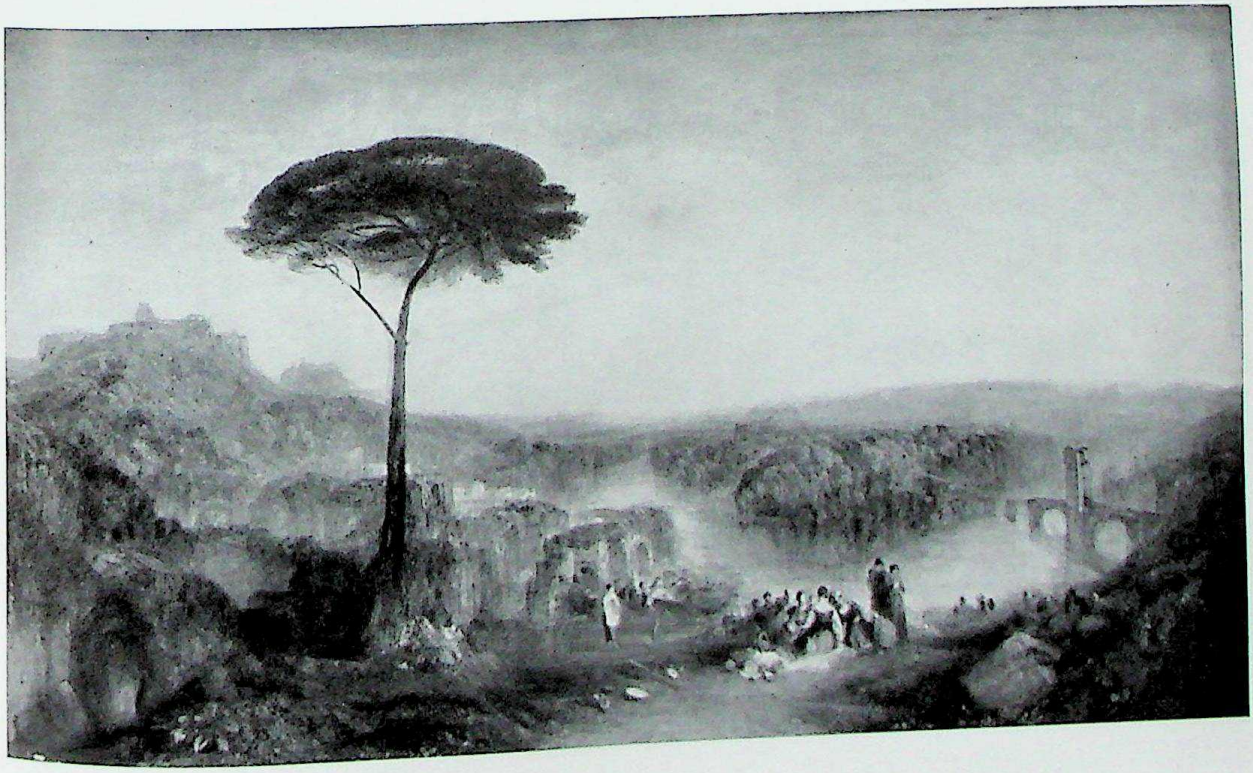
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



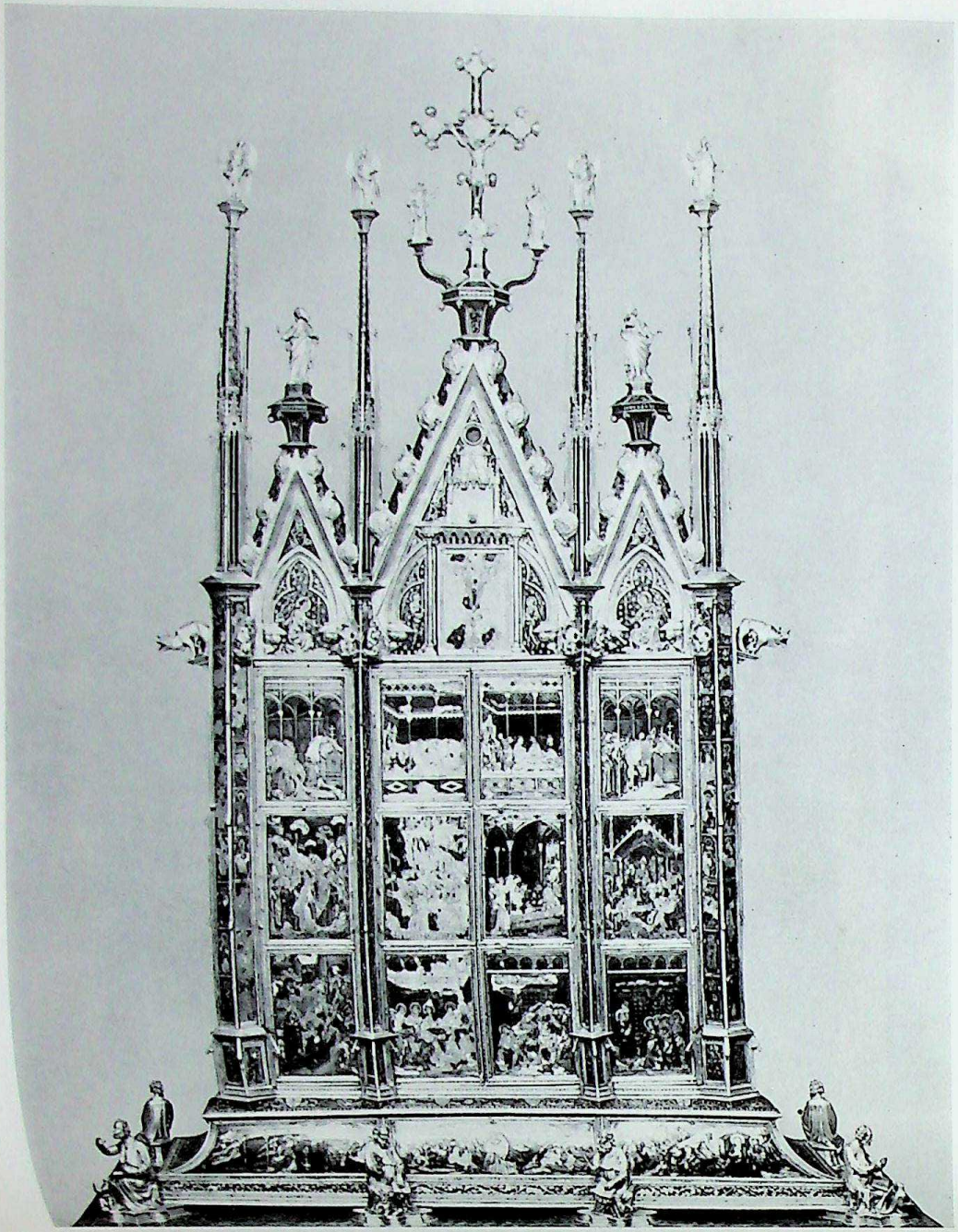
Pl. 224. *Above*: Snowstorm: Hannibal and His Army Crossing the Alps. Canvas, 4 ft., 9 in. × 7 ft., 9 in. *Below*: Rome, the Arch of Titus and the Forum Romanum, seen from the Colosseum. Canvas, 4 ft., 2 in. × 7 ft., 5 in. Both, London, Tate Gallery.

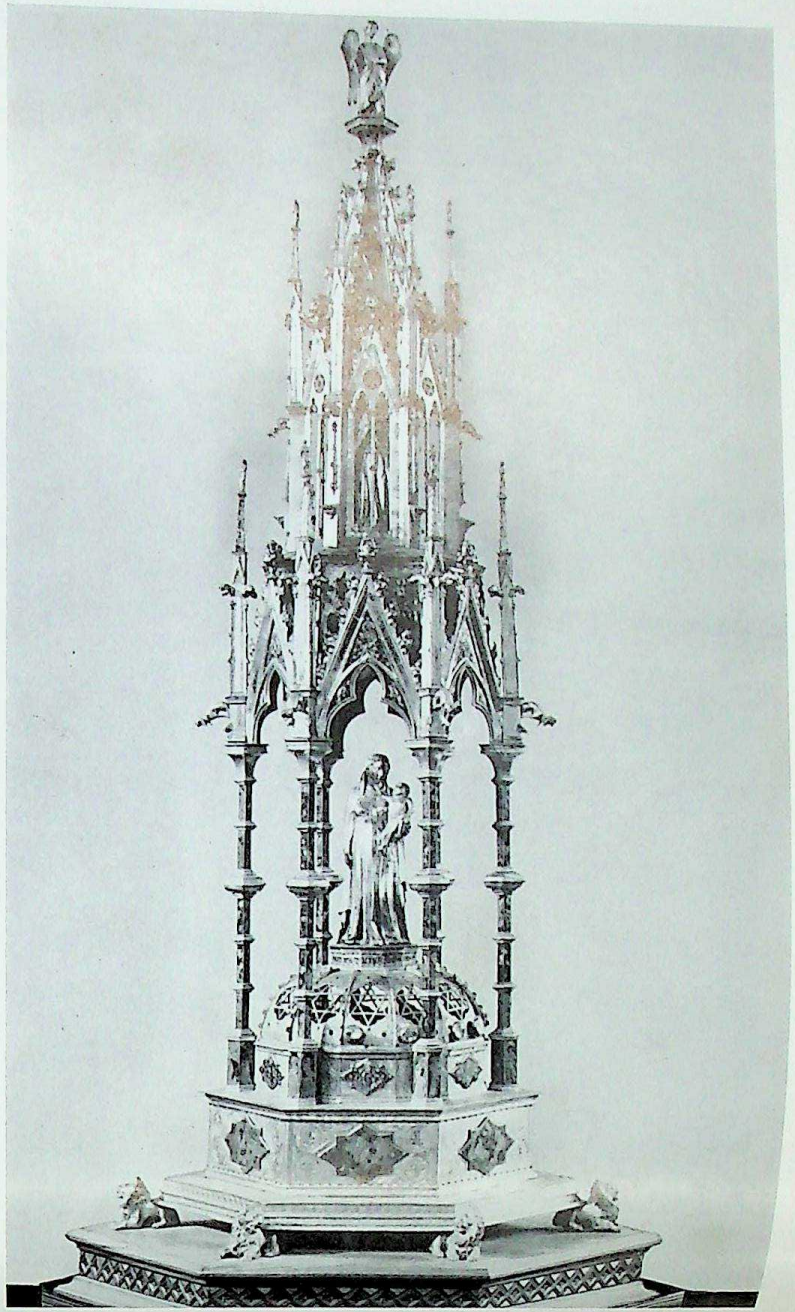
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 225. *Above*: Ulysses Deriding Polyphemus. Canvas, 4 ft., 4¼ in. × 6 ft., 8½ in. London, National Gallery. *Below*: Childe Harold's Pilgrimage: Italy. Canvas, 4 ft., 8 in. × 8 ft., 2 in. London, Tate Gallery.

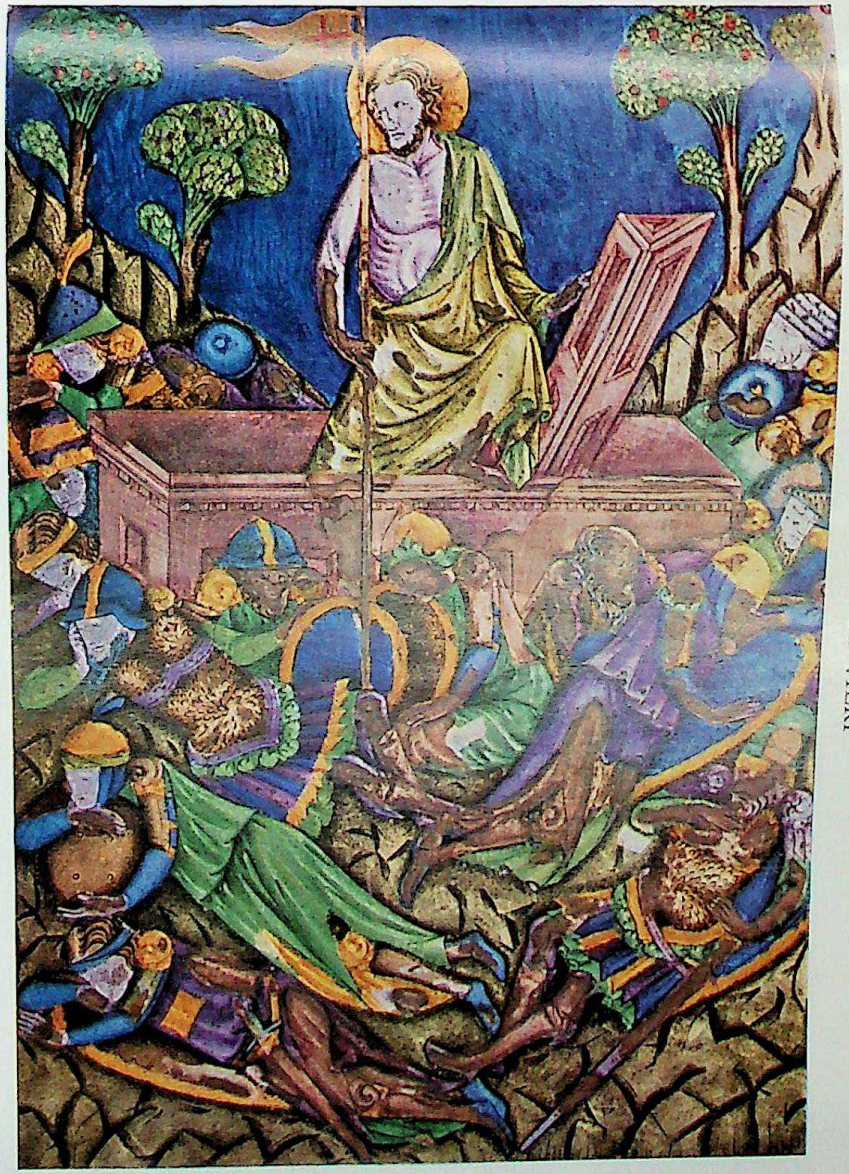




Pl. 226. Left: Reliquary of the Holy Corporal, front view. Gold, silver, and enamel; ht., 4 ft., 6¾ in. (Cf. details, PL. 227; VI, PL. 382.) *Right*: Reliquary of St. Savinus (executed with Viva di Landoy). Gilded copper, silver, and enamel; ht., ca. 40 in. Both, Orvieto, Italy, Cathedral.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

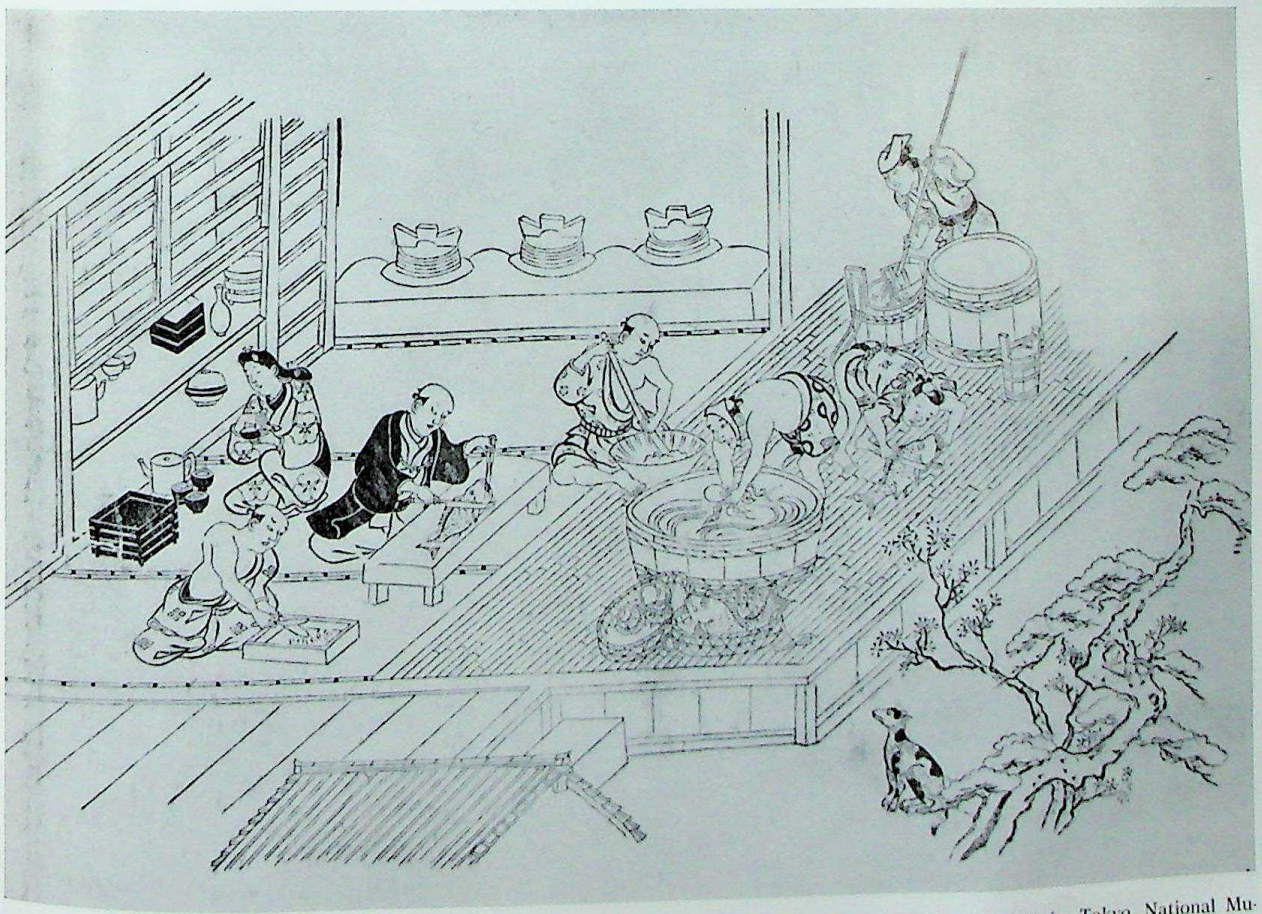


Pl. 227. Lament for the Dead Christ and the Resurrection, panels on the back of the Reliquary of the Holy Corporal (PL. 226).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

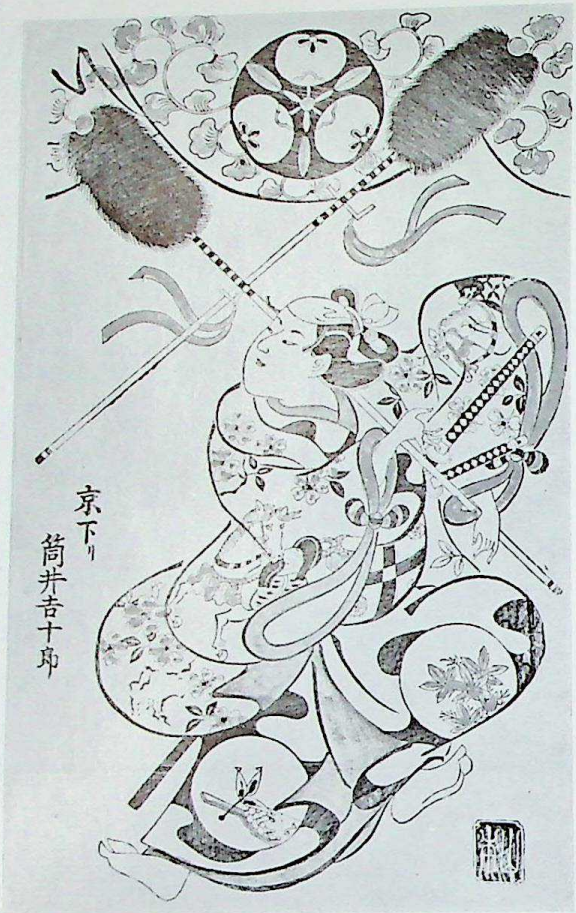
Pl. 228. Isoda Koryūsai, The Tea Ceremony, late 18th cent. Woodprint (*nishiki-e*), standard middle size (*chūban*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



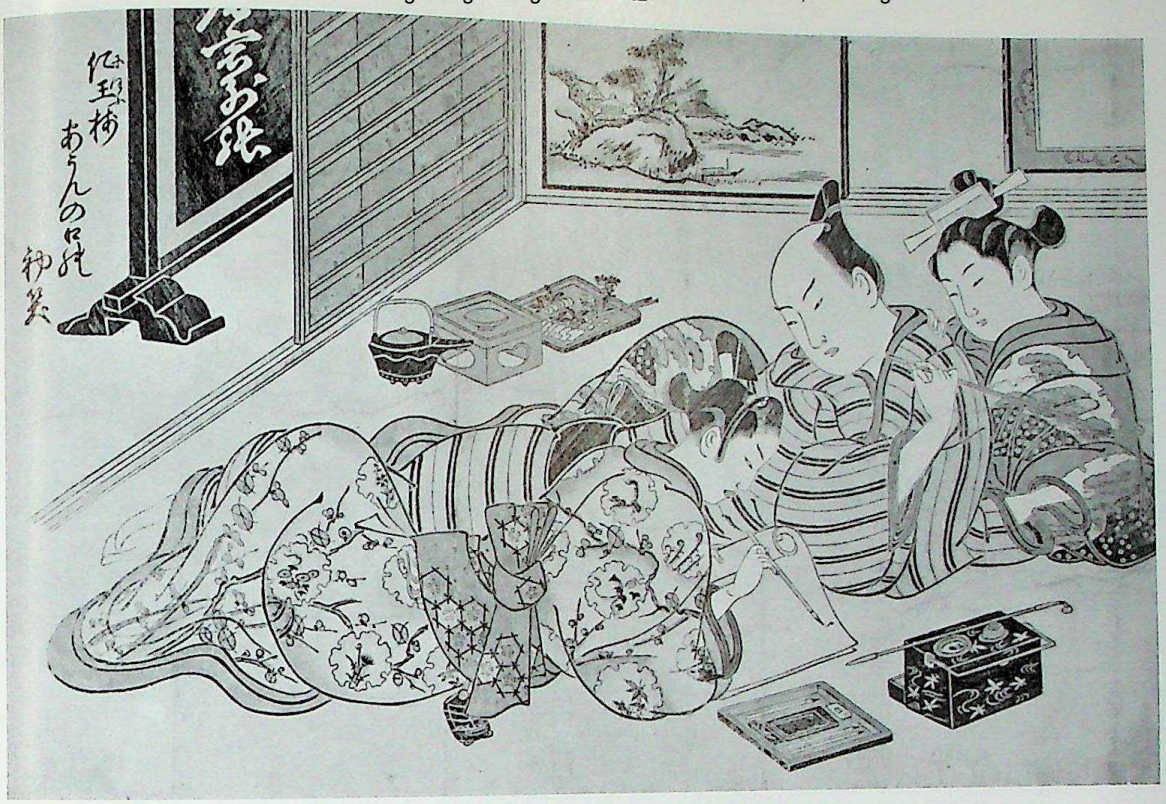
Pl. 229. Hishikawa Moronobu. *Above*: Detail from a scroll of genre scenes, 1680. Color on paper, ht., 9 1/8 in. Tokyo, National Museum. *Below*: Kitchen scene from the series "Various Views of Yoshiwara," Genroku period (1688–1703). Woodprint (*sumizuri-e*), standard large size (*ōban*).

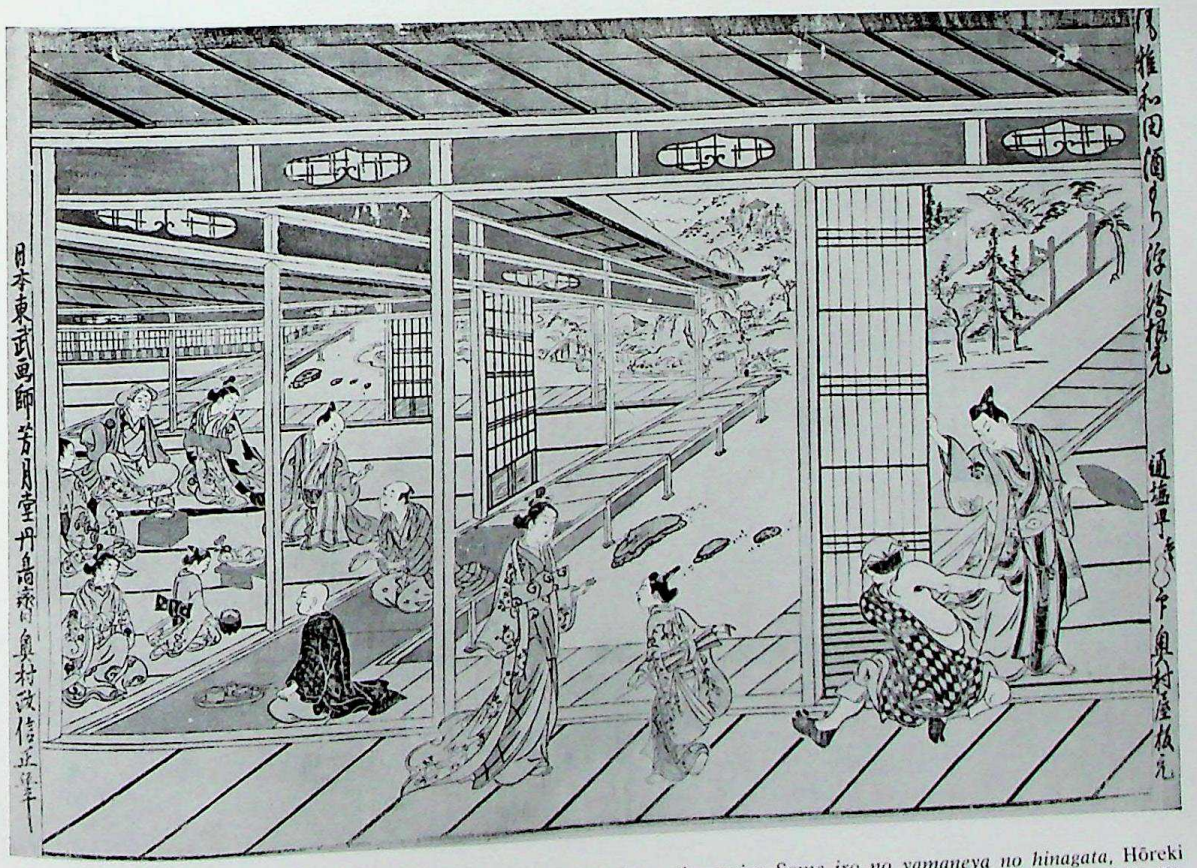
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 230. *Above, left*: Torii Kiyonobu I, Tsutsui Kichijuro in the Lance Dance, 1697. Woodprint (*tan-e*), standard extra-large size (*ō-ōban*). *Right*: Torii Kiyomasu I, Bunshichi-bushi, Hōei period (1704–10). Woodprint (*tan-e*), standard extra-large size. *Below*: Okumura Masanobu, Ushiwakamaru and Benkei, Kyōho period (1716–35). Woodprint (*sumizuri-e*) standard large size (*ōban*).

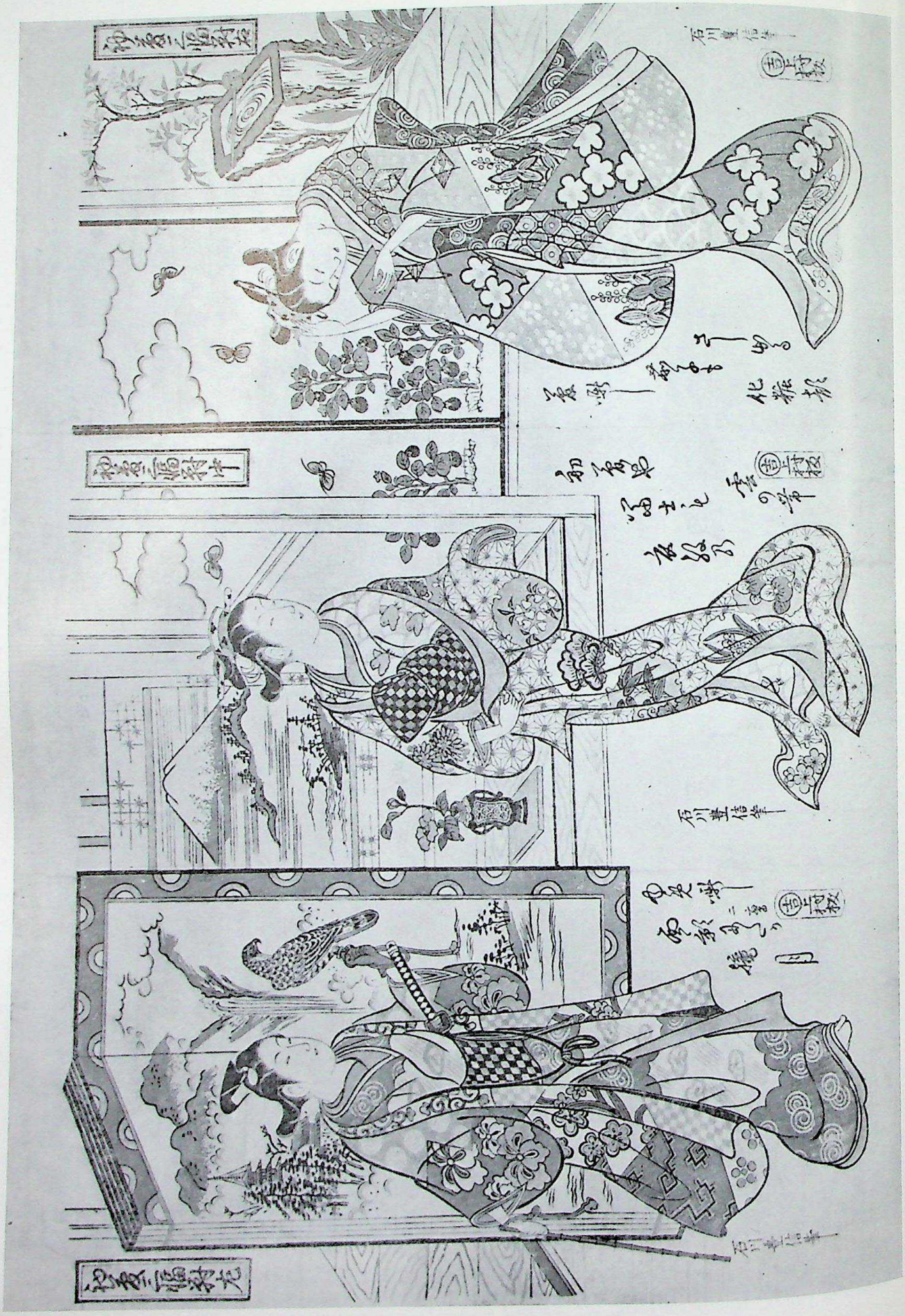
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 231. Okumura Masanobu. *Above*: Entertaining the Lovers, from the series *Some iro no yamaneya no hinagata*, Hōreki period (1751–63). Woodprint (*urushi-e*), standard large size (*ōban*). *Below*: Banquet at Wada, Genbun period (1736–40). Woodprint (*tan-e*), standard extra-large size (*ō-ōban*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 232. Ishikawa Toyonobu, The First Dream of the New Year, Hōreki period (1751–63), Woodprint (*benizuri-e*), uncut long print (*hosoe*).

Pl. 233. *Left*: Suzuki Harunobu, The Beauty Ofuji and Samurai at the Yanagiya Shop, from the series *Furyu Yedo happei* ("Eight Elegant Views of Edo"), Meiwa period (1764–71). Woodprint (*nishiki-e*), standard middle size (*chūban*). *Right*: Katsukawa Shunshō, Encounter between the Soga Brothers, Tenmei period (1781–88). Woodprint (*nishiki-e*), standard middle size.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

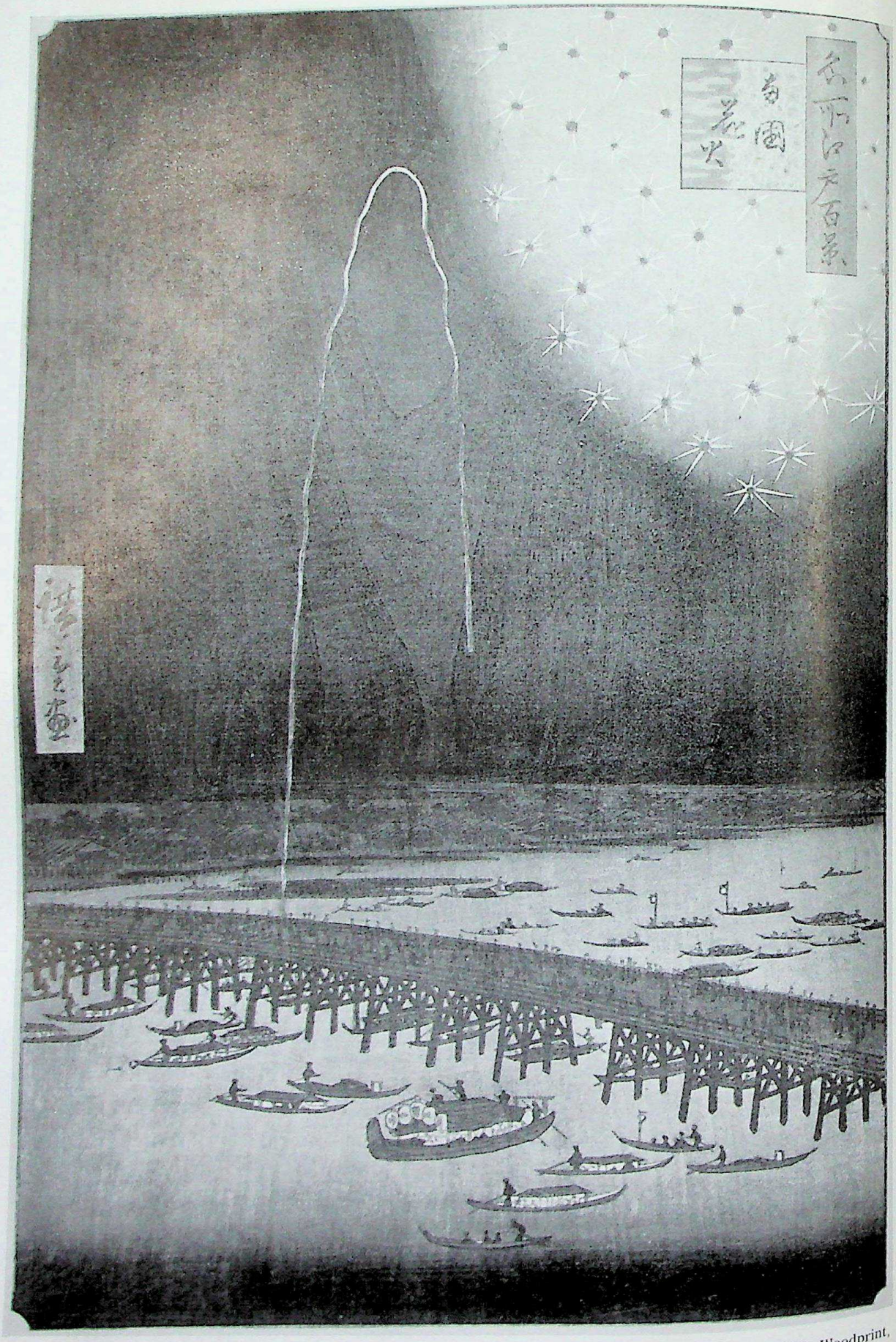
UKIYO-E
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 234. *Left*: Tōshūsai Sharaku, portrait of the actor Bandō Hikosaburo III as Sagisaka Samon, from a Chūshingura drama series, 1794. Woodprint with mica background, standard large size (ōban). *Right*: Hosoda (or Chōbunsai) Eishi, scene from a Chūshingura drama series, late Kansei period (1789–1800). Woodprint, standard large size.

Pl. 235. *Left*: Utagawa Toyokuni, The Teahouse Beauty Okita, one sheet of a triptych, middle Kansei period (1789–1800). Woodprint, standard large size (*ōban*). *Right*: Utagawa Hiroshige, Umbrella, Cock, and Morning-glories, early Tempō period (1830–43). Woodprint, standard long sheet for writing poems (*tanzakuban*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

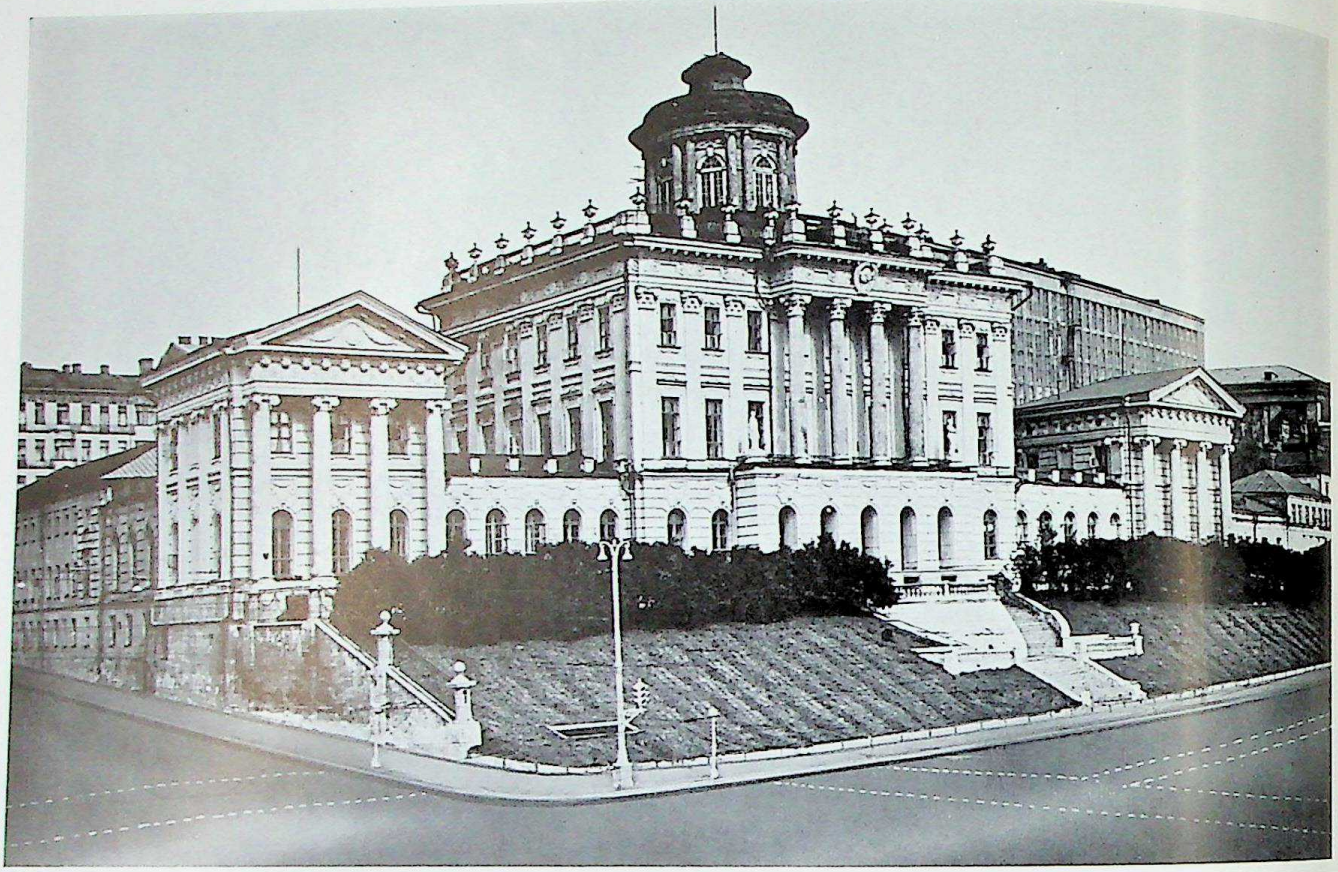


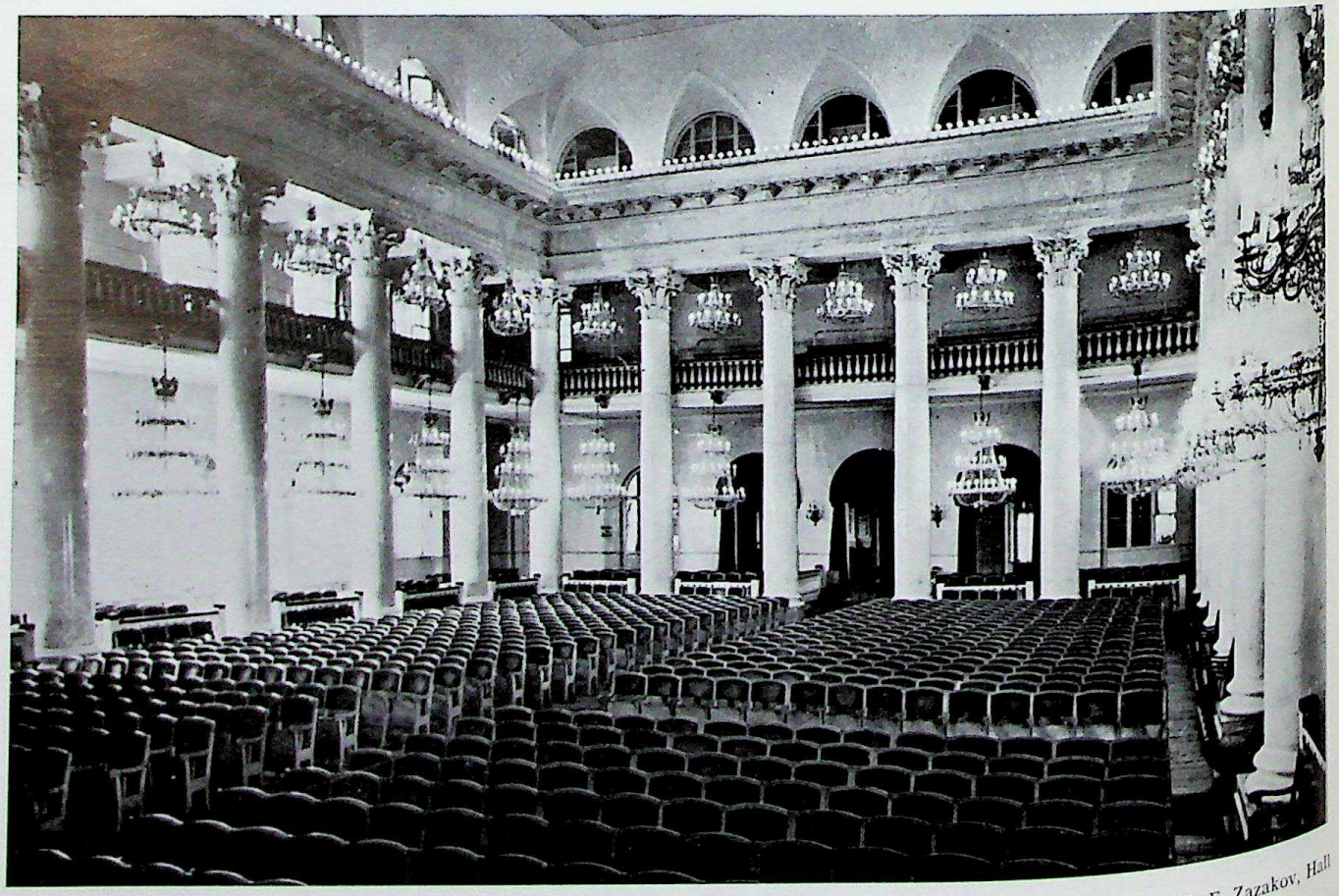
Pl. 236. Utagawa Hiroshige, Fireworks at Ryōgoku, from the series "A Hundred Views of Edo," 1858. Woodprint, standard large size (*ōban*).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 237. B. Rastrelli and I. F. Michurin, Cathedral of St. Andrew, Kiev, 1747–73.

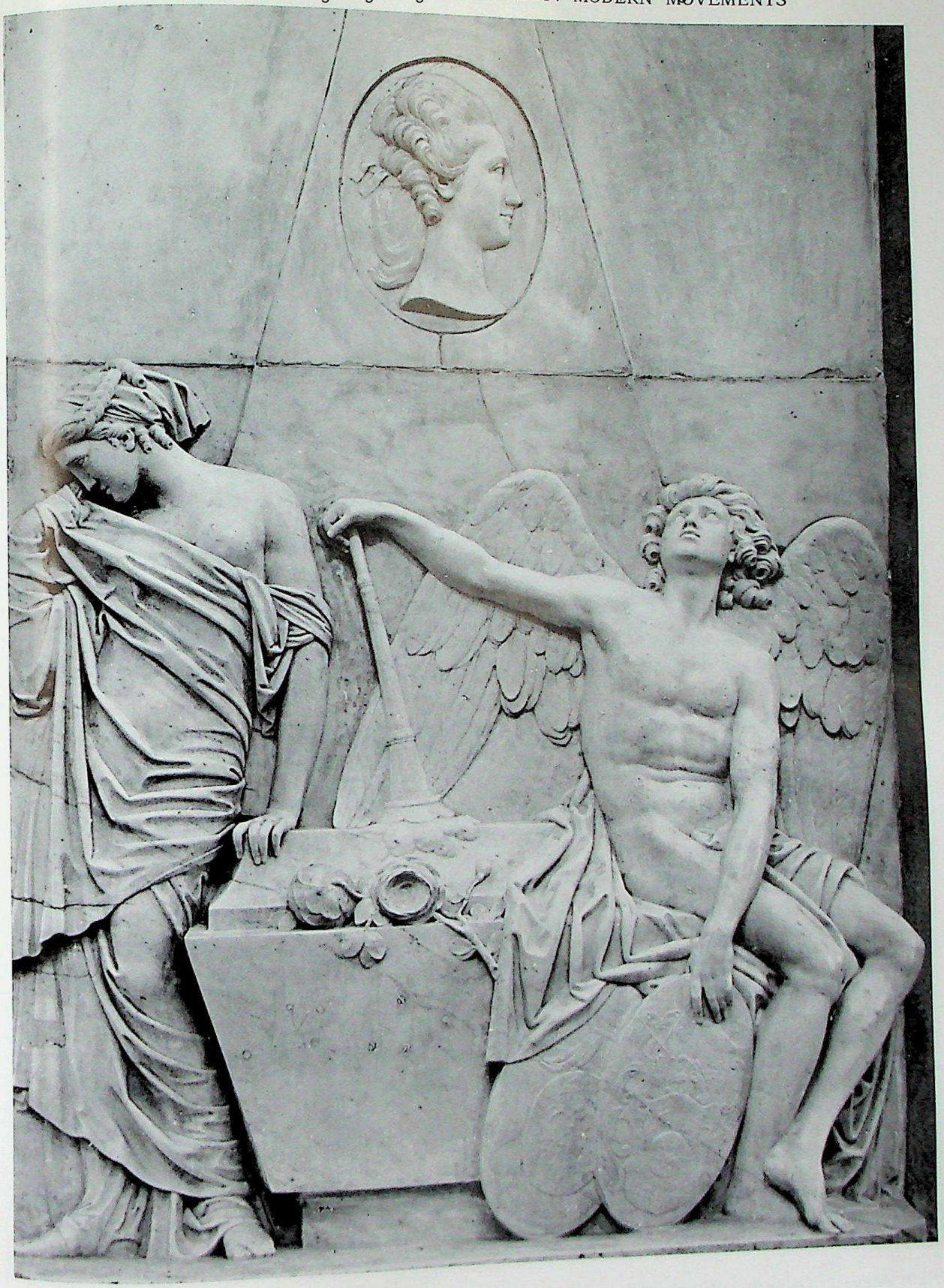
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





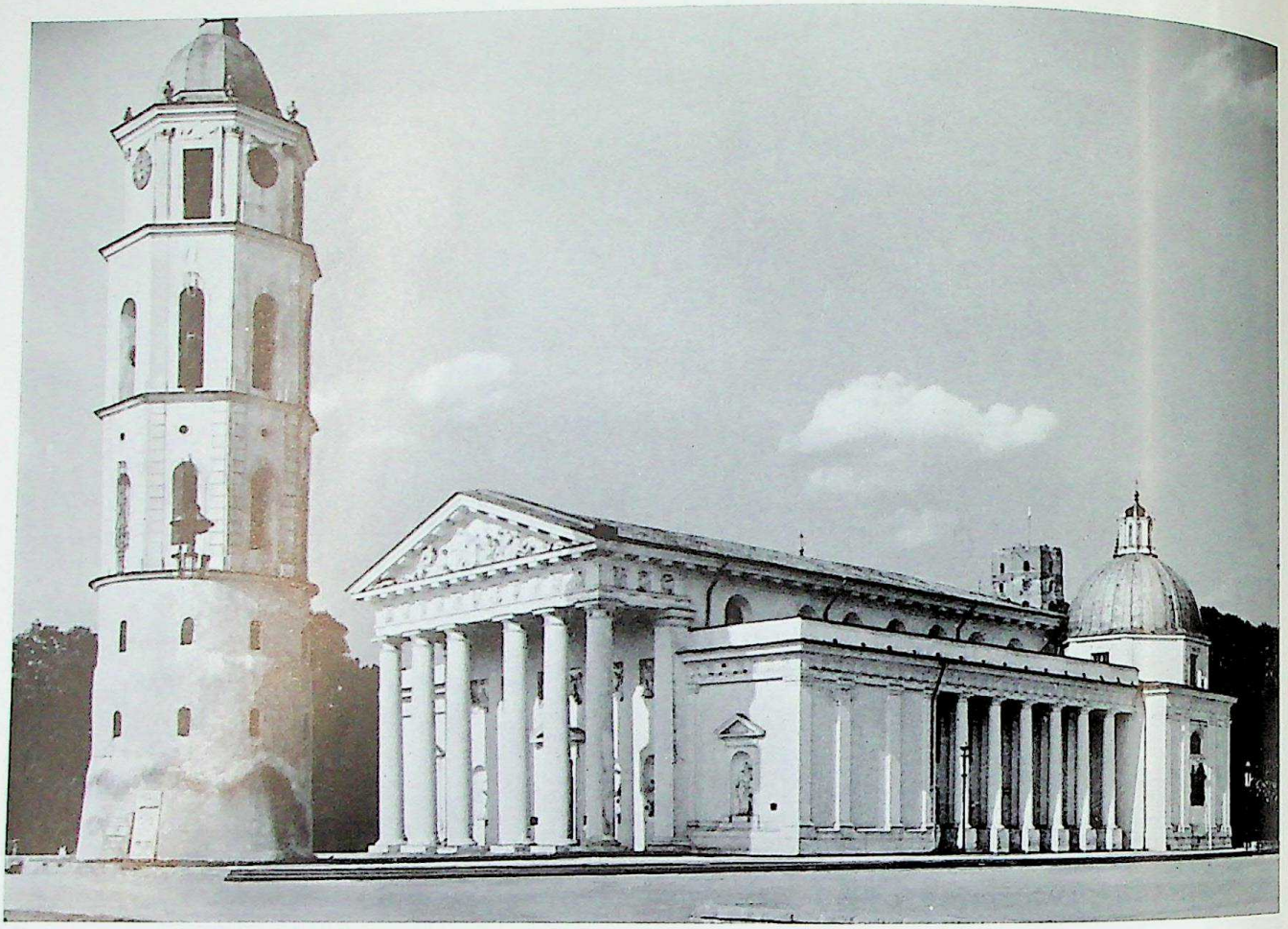
Pl. 238. *Above*: V. I. Bazhenov, Pashkov Palace, now the Lenin Library (old building), Moscow, 1784–86. *Below*: M. F. Zazakov, Hall of Columns in the House of Trade Unions (Dom Soyuzov), Moscow, 1780–ca. 1790.

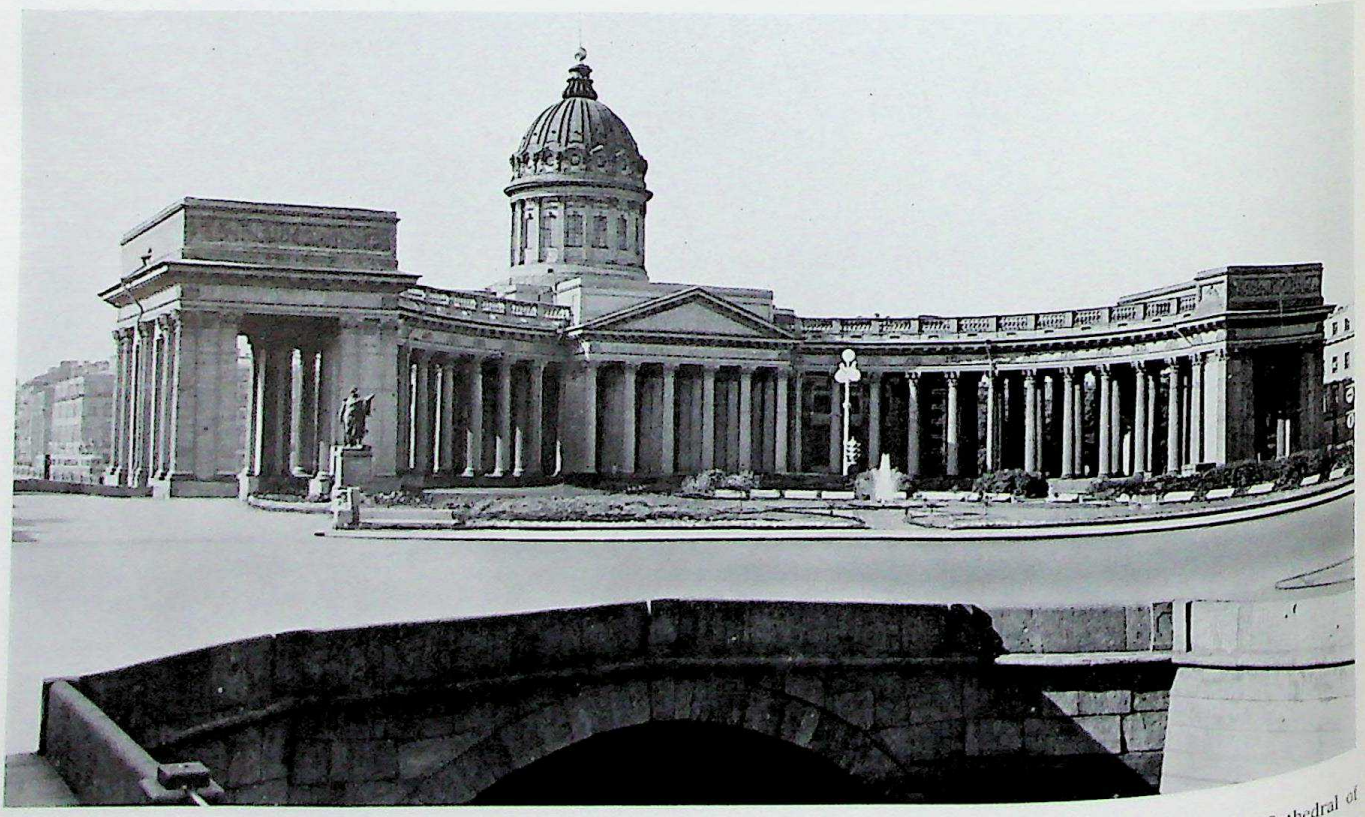
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 239. I. P. Martos, relief from the tomb of M. P. Sobakina, 1782. Marble. Moscow, Scientific Research Museum of Architecture.

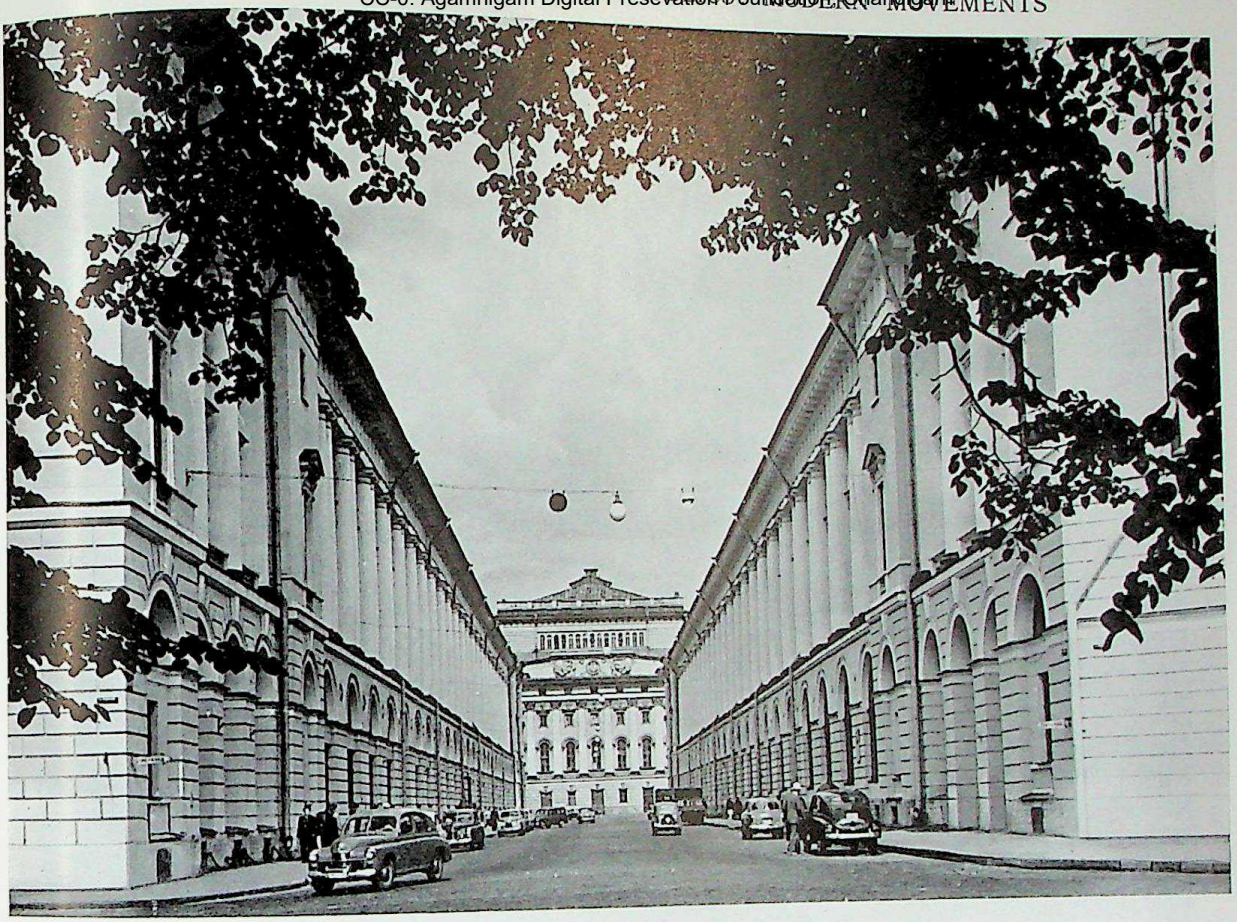
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

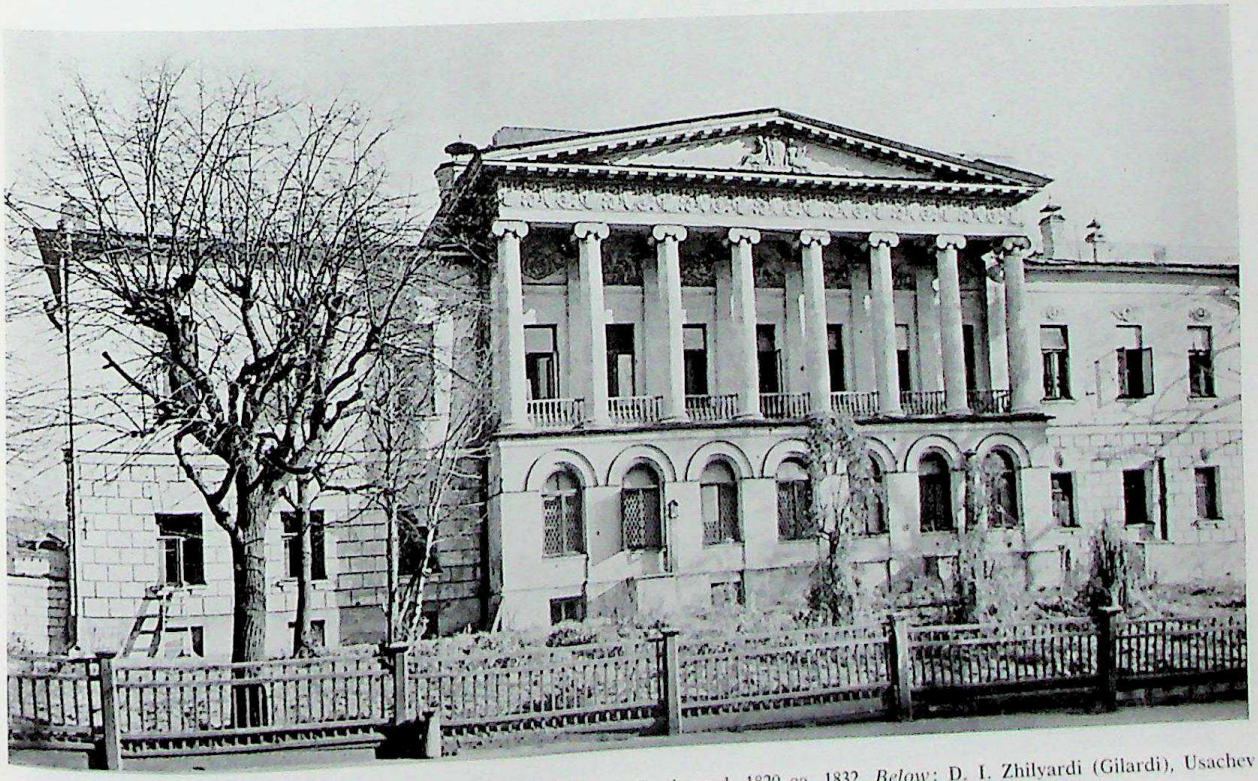




Pl. 240. *Above*: L. Stuoka-Gucevičius, St. Stanislaus, Vilnius, Lithuanian S.S.R., 1777–1801. *Below*: A. N. Voronikhin, Cathedral of the Virgin of Kazan, Leningrad, 1801–11.

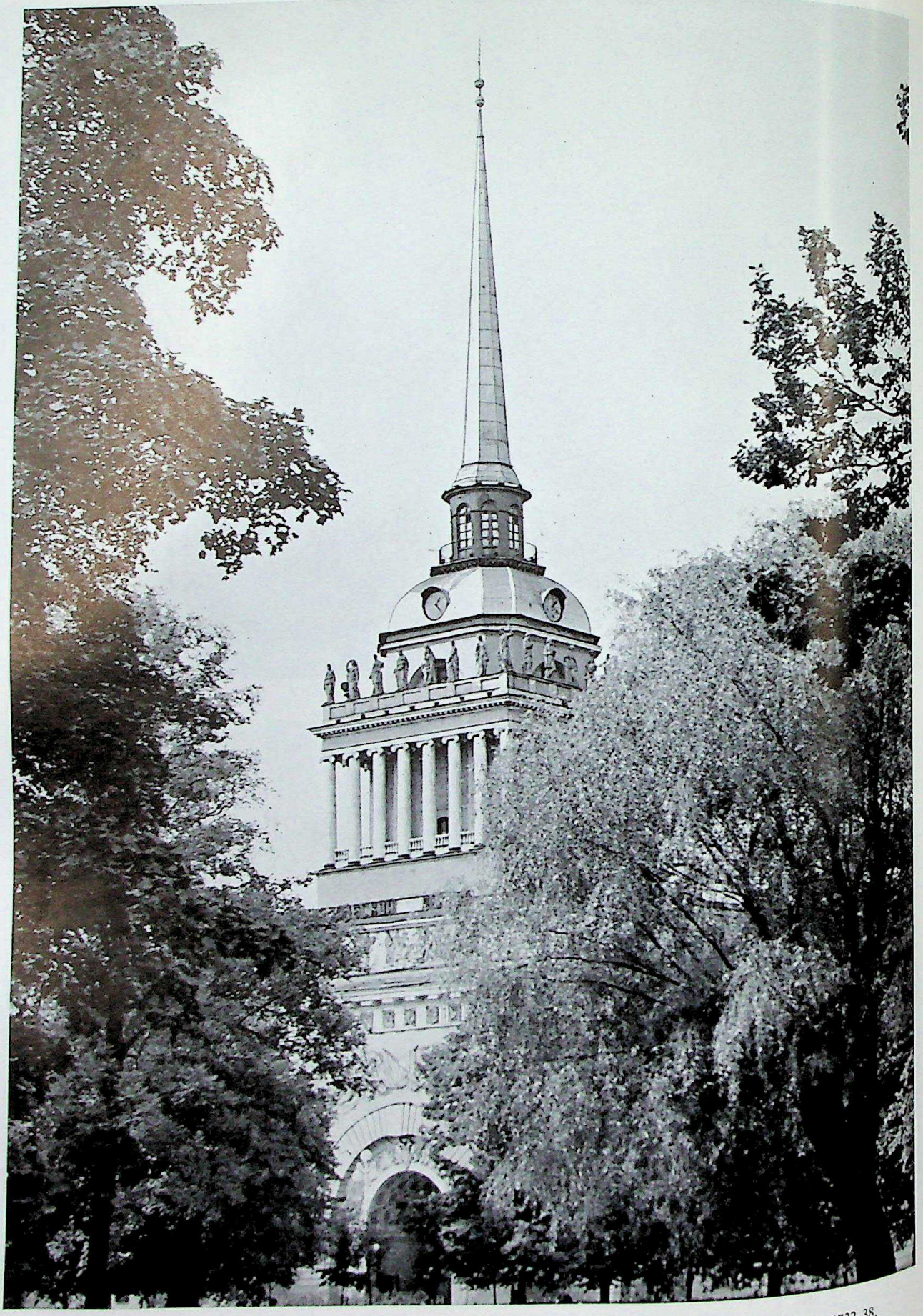
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 241. *Above*: K. I. (Carlo) Rossi, buildings on Rossi Street, Leningrad, 1820–ca. 1832. *Below*: D. I. Zhilyardi (Gilardi), Usachev mansion, now a hospital, Moscow, 1829–31.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

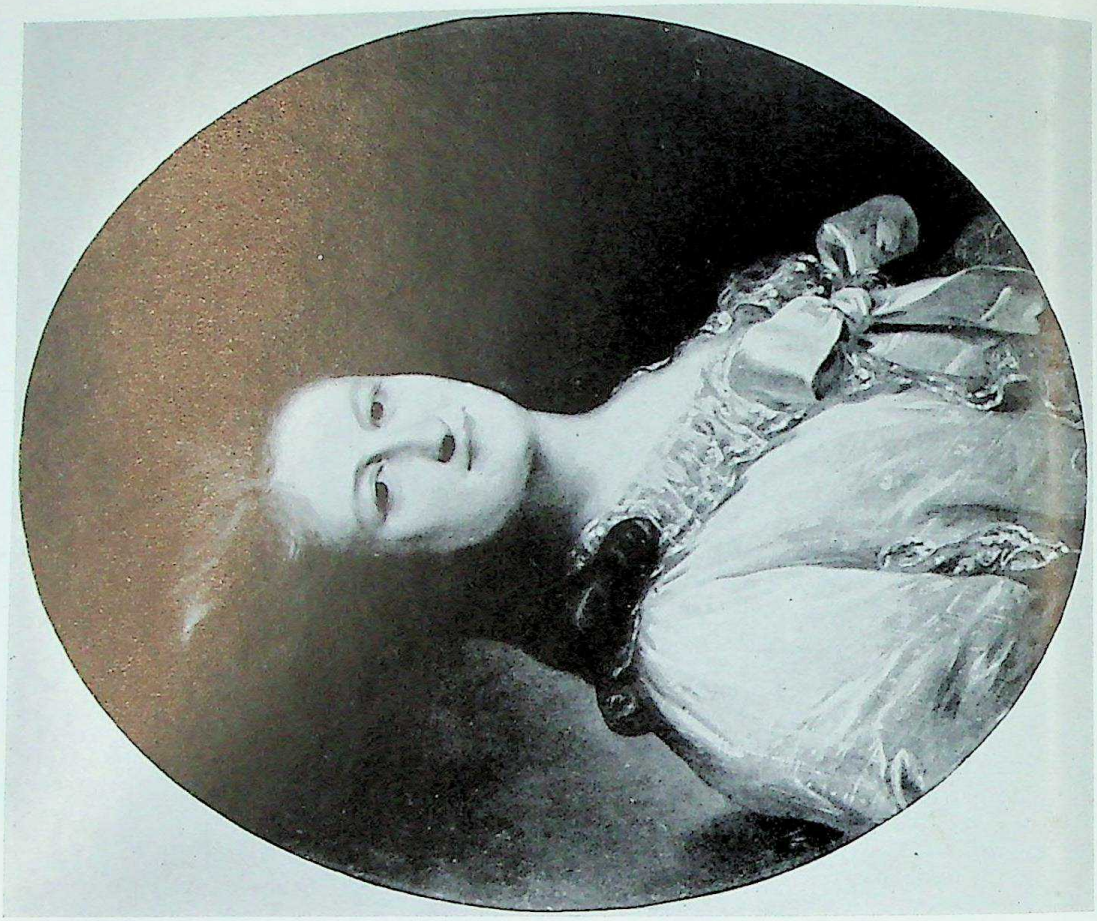


Pl. 242. A. D. Zakharov, Admiralty, Leningrad, 1806–23, with spire from the Old Admiralty by I. K. Korobov, 1732–38.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 243. *Above*: V. O. Sherwood, Historical Museum, Moscow, 1875–81. *Below*: R. I. Klejn, A. S. Pushkin Museum of Fine Arts, Moscow, 1912.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 244. Left: O. A. Kiprenskii, Major General E. I. Chaplits, 1813. Black chalk on paper, 9 1/8×7 1/2 in. *Right:* F. S. Rokotov, V. E. Novosil'ceva, 1780. *Canvas; ht.,* 28 3/4 *in., w.* 23 1/4 in. Both, Moscow, Tretyakov Gallery.

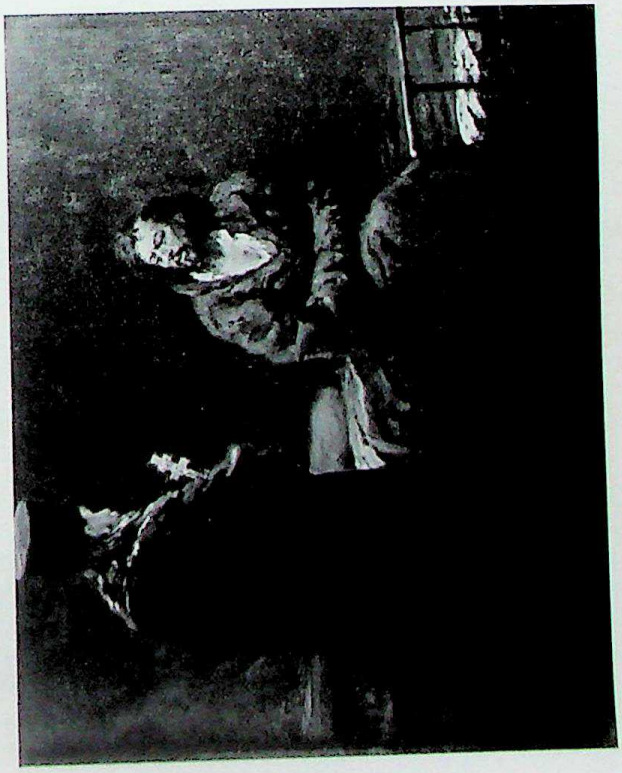
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 245. I. E. Repin, Zaporozh'ye Cossacks Writing a Letter to the Turkish Sultan, sketch, 1881 (?), later finished, for the painting of 1891 in the Russian Museum, Leningrad. Canvas, 26 1/16 × 34 1/4 in. Moscow, Tretyakov Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 24b. V. A. Serov, Odysseus and Nausicaa, 1910, sketch version. Tempera on pasteboard, 33⅝ × 40 in. Moscow, Tretyakov Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

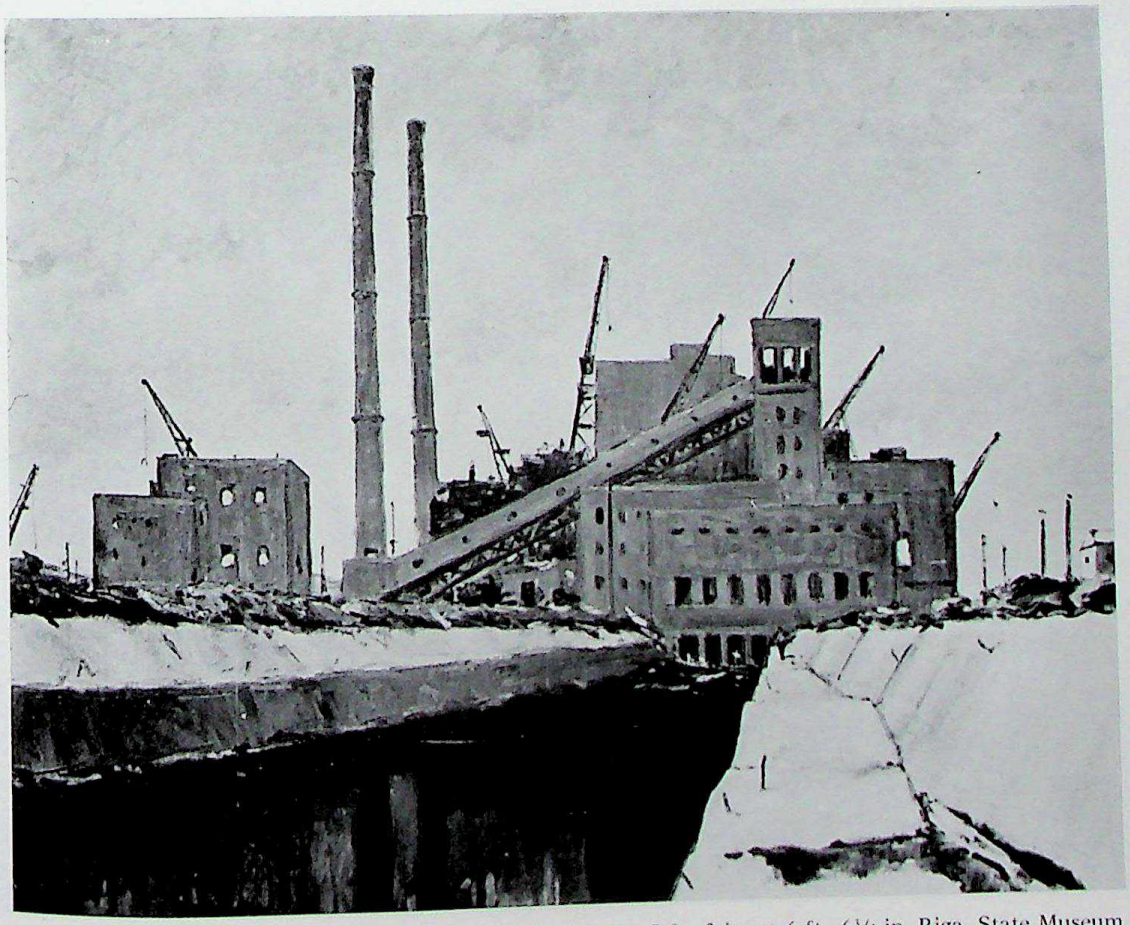


Pl. 247. *Left, above:* V. G. Perov, Escorting the Dead, 1865. Canvas, 17 7/8 × 22 1/2 in. *Below:* I. E. Repin, Refusing the Confession, 1879–85. Canvas, 18 7/8 × 23 1/4 in. *Right:* V. I. Surikov, Head of Boyarina Morozova, study for a painting of 1887. Canvas, 13 × 10 1/2 in. All, Moscow, Tretyakov Gallery.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 248. *Above*: B. V. Ioganson, The Interrogation of the Communists, 1933. Canvas, 6 ft., 11 in. × 9 ft. 2 in. *Below*: M. V. Nesterov, The Surgeon S. S. Yudin, 1935. Canvas, 32 × 39 in. Both, Moscow, Tretyakov Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 249. *Above*: E. Kalniņš, After the Catch, 1947. Canvas, 5 ft., 3 in. × 6 ft., 6¾ in. Riga, State Museum of Art of the Latvian S.S.R. *Below*: A. Altas, Hydroelectric Plant. Canvas. Property of Estonian S.S.R.

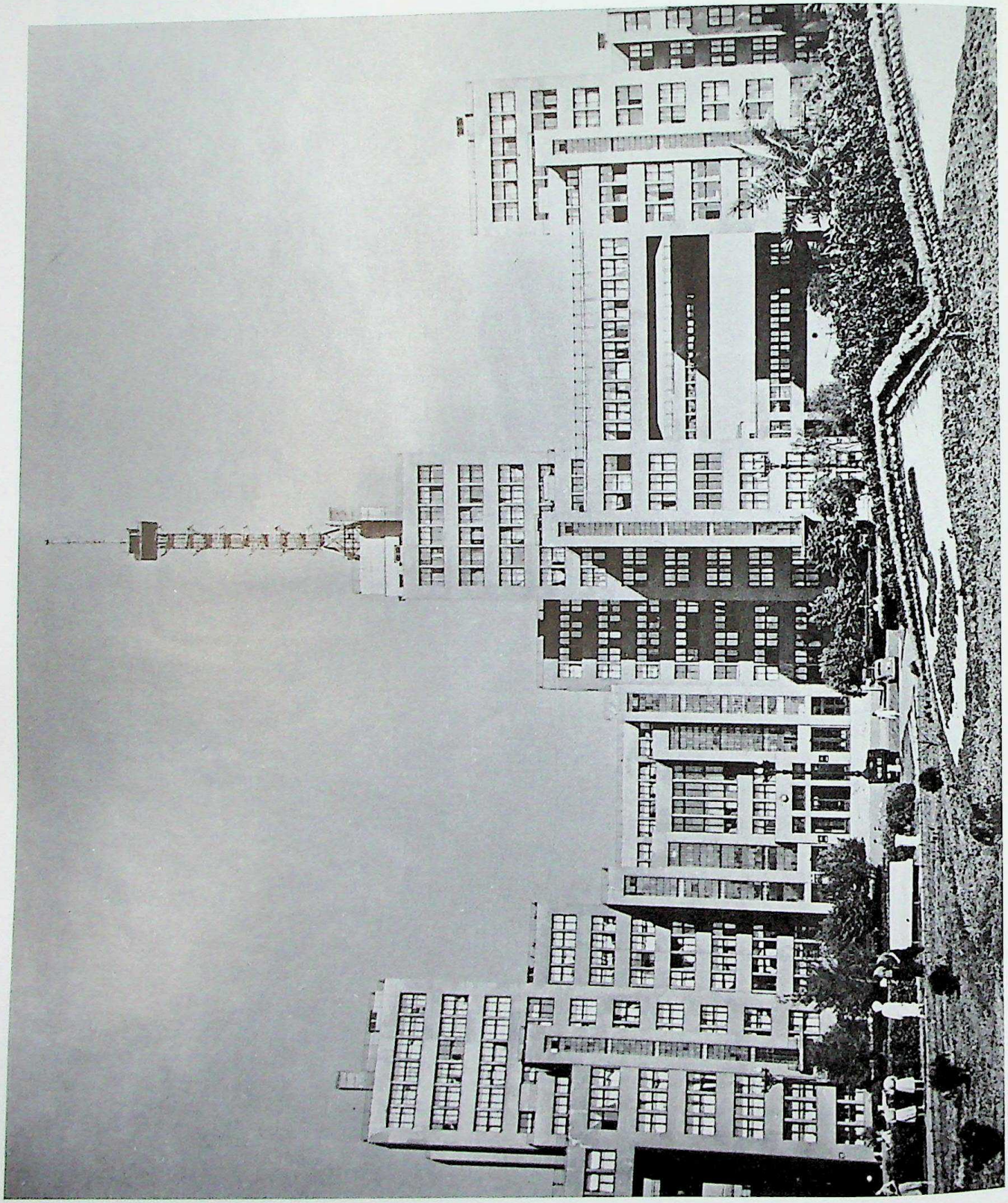
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 250. V. I. Mukhina, Worker and Kolkhoz Woman, 1937. Stainless steel, ht., ca. 80 ft. Moscow, entrance to the U.S.S.R. Economic Achievement Exhibition grounds.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

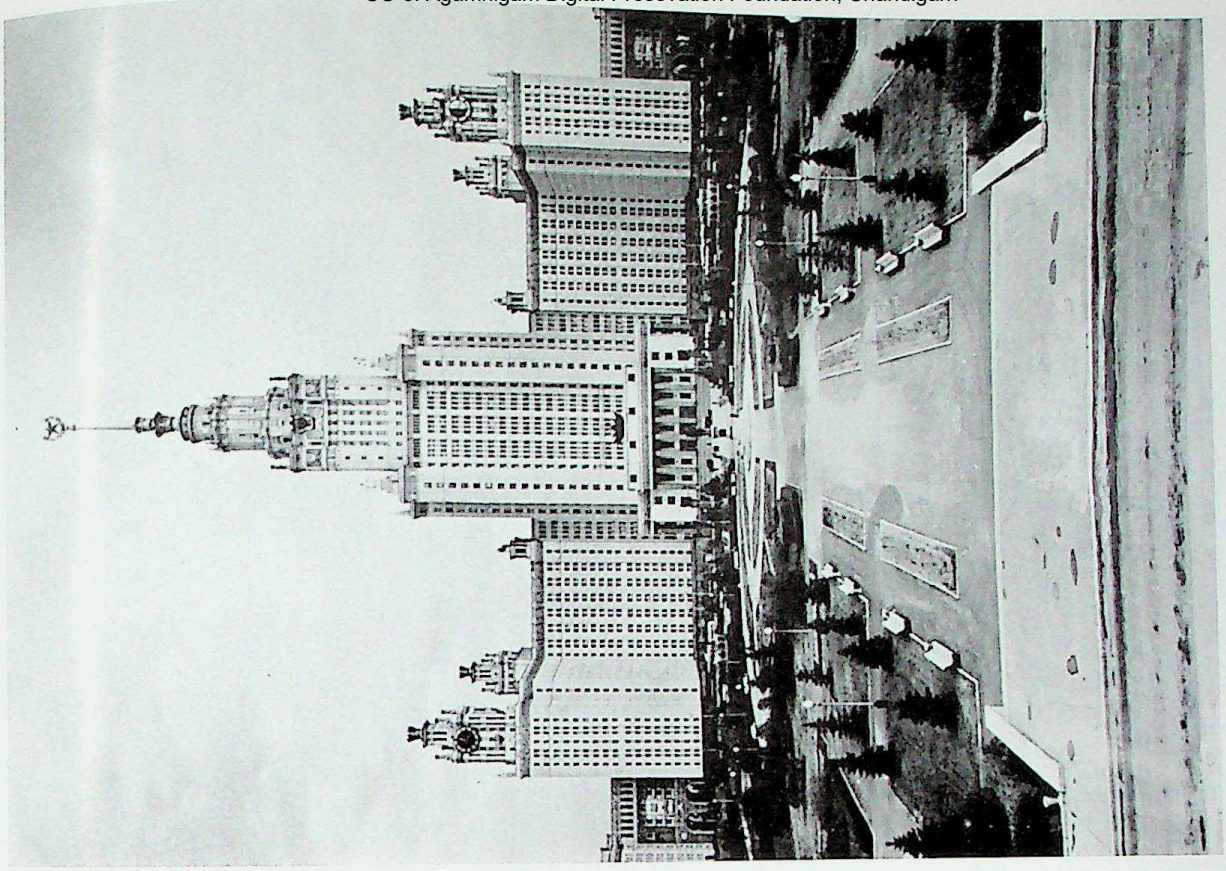
Pl. 251. *Above*: A. V. Shchusev, mausoleum of Lenin, Moscow, 1924–30. *Below*: B. Bykov and I. Taranov, Byelorusskaya station of the Moscow subway, 1952.

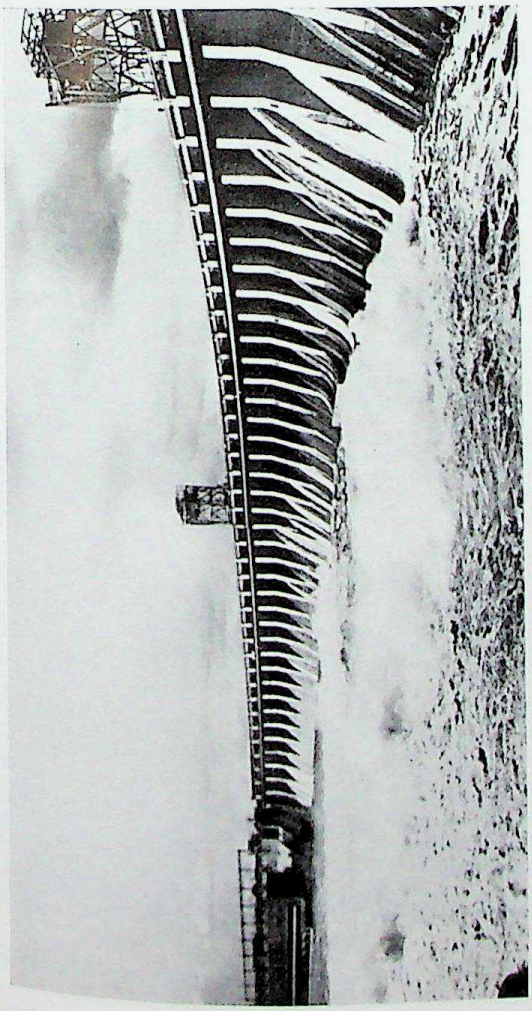
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

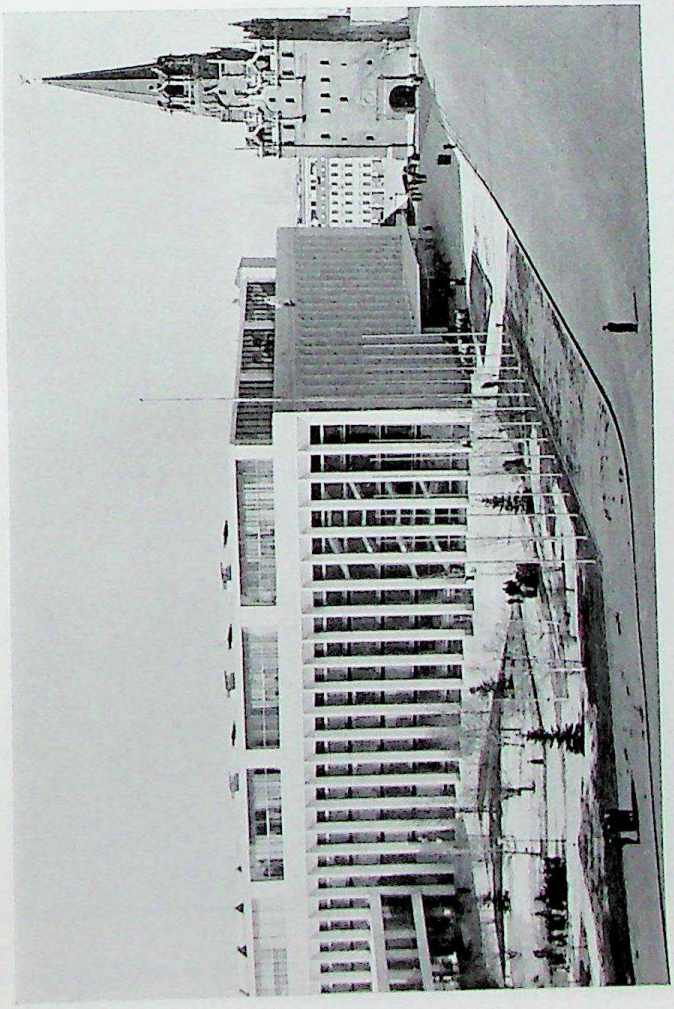


Pl. 252. S. S. Serafimov, M. D. Felger, and S. M. Kravets, House of Industry, Kharkov, 1925–29.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

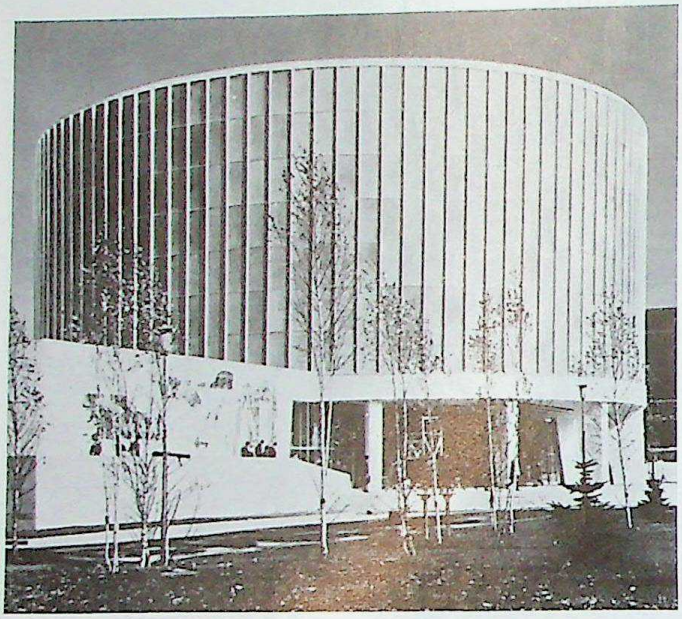


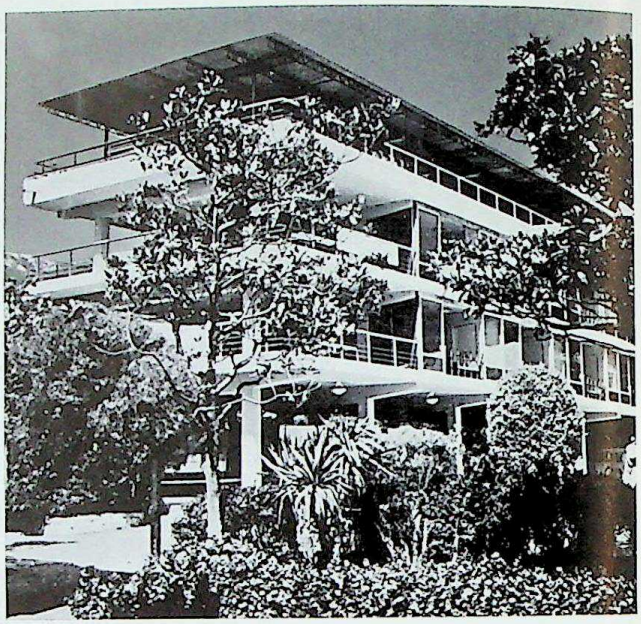




Pl. 253. *Left, above*: Dam on the Dnieper River at Dniepropetrovsk, Ukrainian S.S.R., 1927–32 (destroyed during World War II). *Below*: Convention Hall, the Kremlin, Moscow, 1960–61. *Right*: Moscow State University, central building of the ensemble on Lenin Hills, Moscow, 1949–53.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 254. *Above, left*: Panorama of the Battle of Borodino (1812), Moscow, 1958–62. *Right*: Building of the sea camp at Artek, Crimea, 1961. *Below*: House of the Young Pioneers, partial view, Moscow, 1958–62.

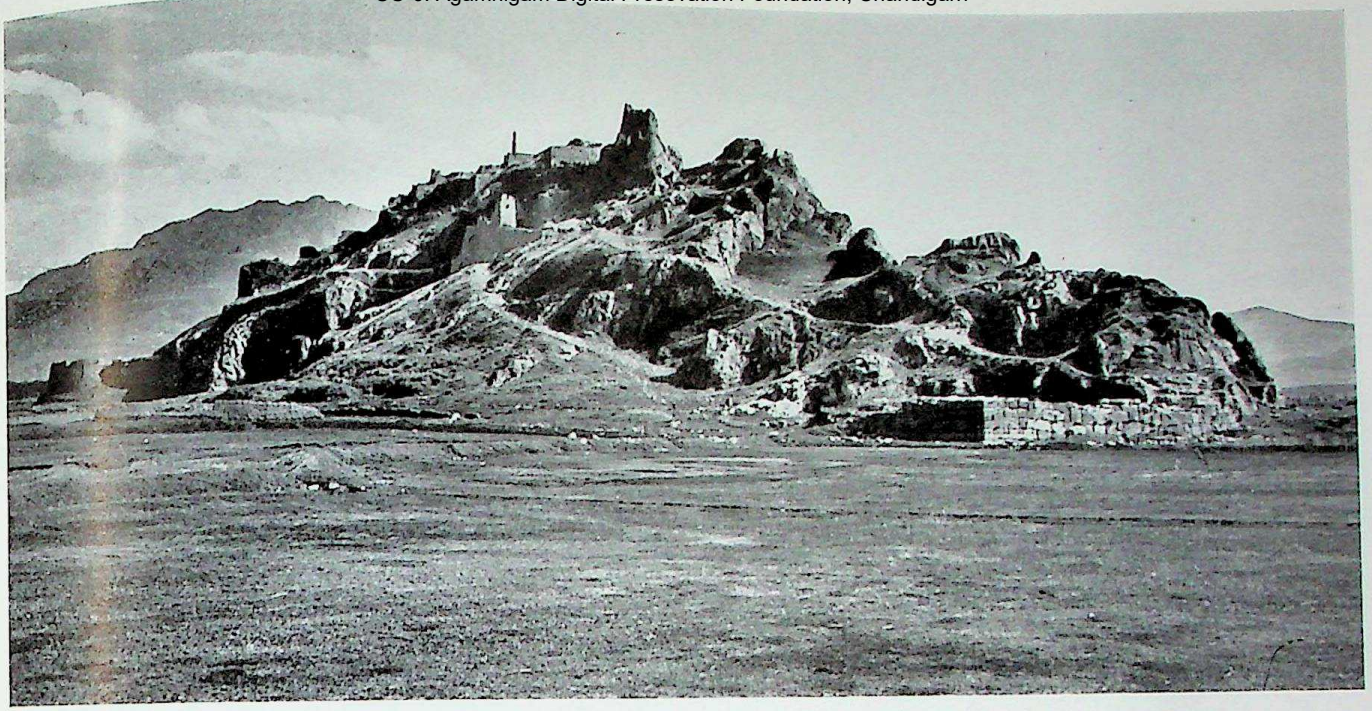
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 255. Unkei, with Kaikei, detail of one of the Niō guarding the Great South Gate of the Tōdaiji, Nara. Wood, ht., ca. 27 ft. (For companion piece, see VIII, PL. 291.)

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

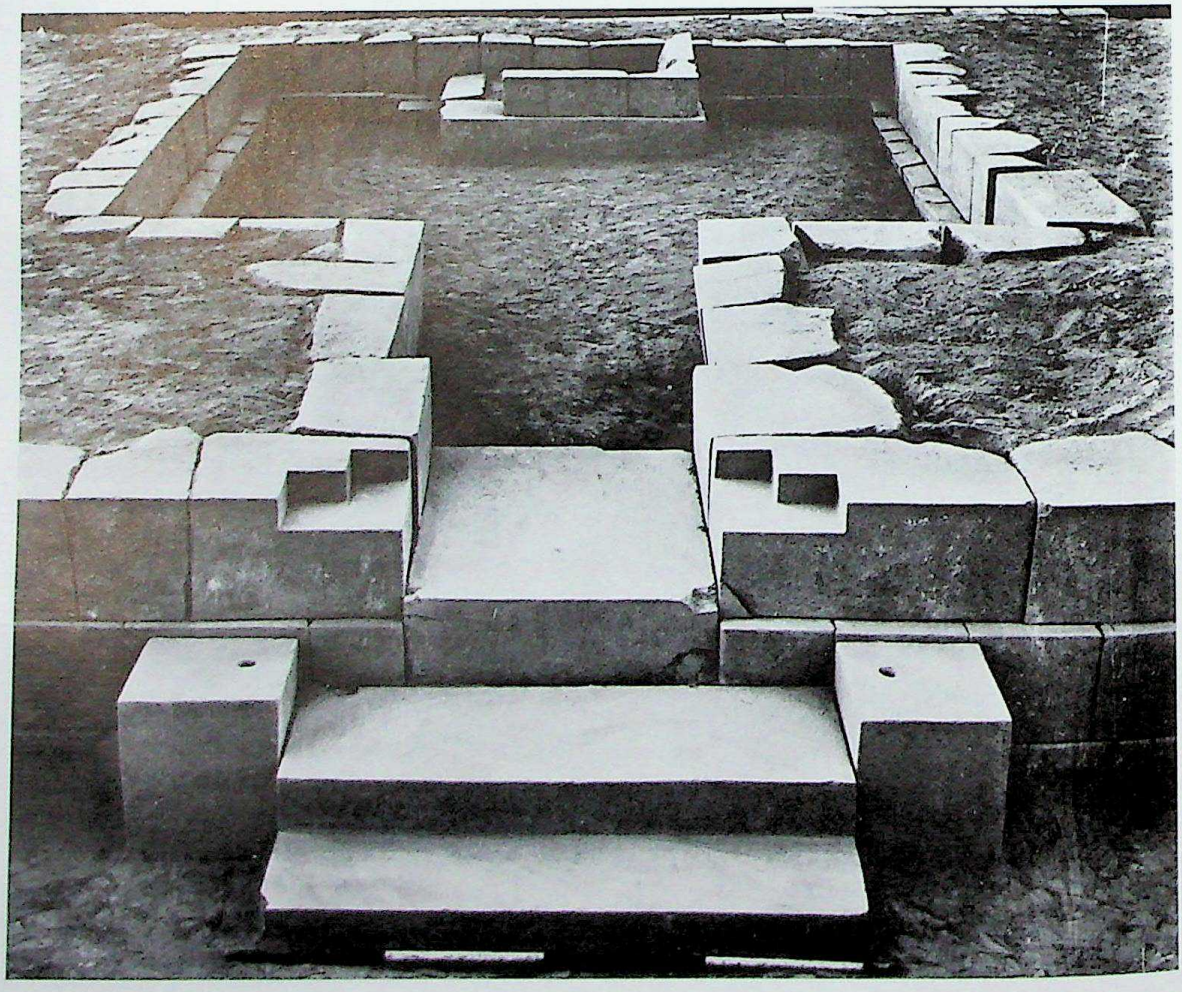
Pl. 256. Unkei, with Kaikei, standing Amida. Wood; ht., including base, 49 3/8 in. Nara, Saihōin.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



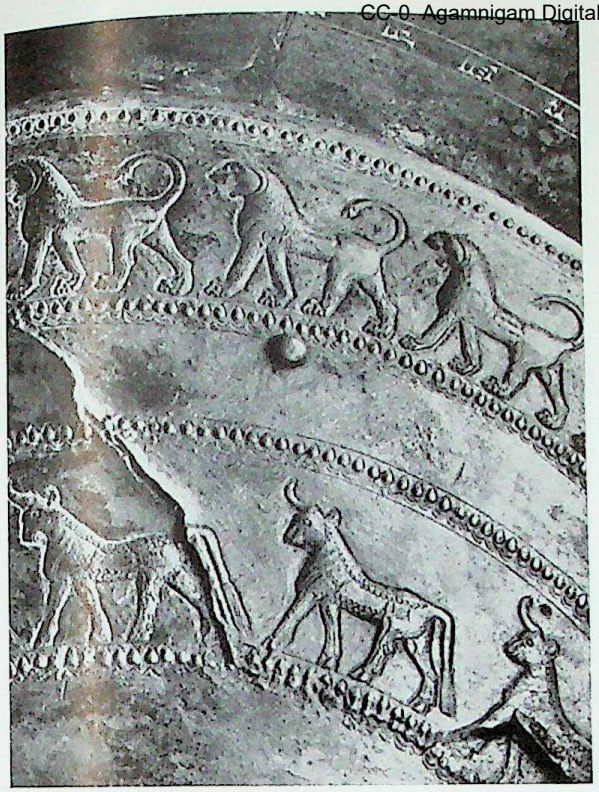
Pl. 257. The citadel on Lake Van, Turkey. *Above*: General view. *Below*: Doorway of a tomb and rock-cut stairs, 9th–7th cent. B.C.

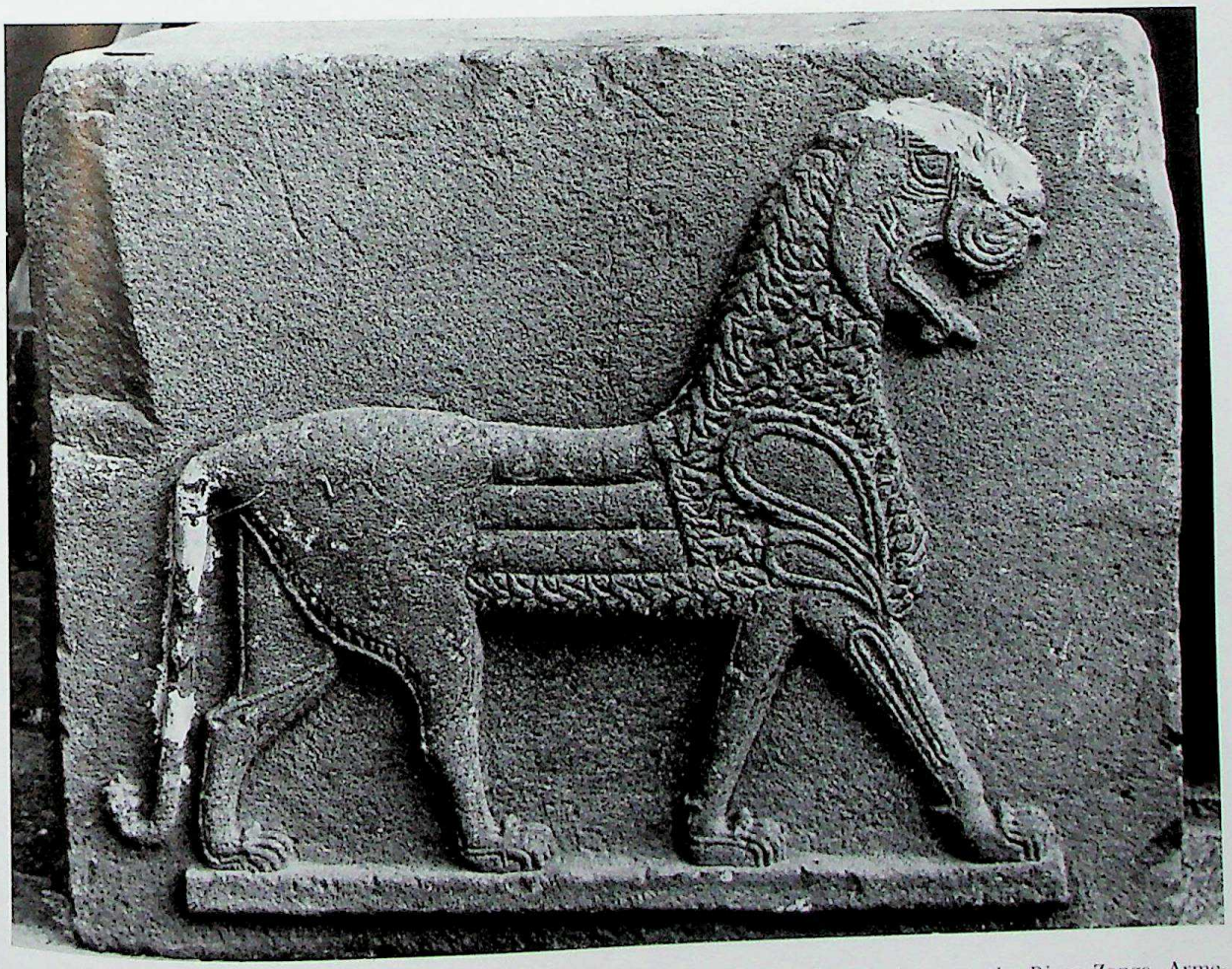
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 258. *Above*: The citadel on Lake Van, Turkey, rock-cut burial chamber, 9th–7th cent. B.C. *Below*: Temple of Altintepe, near Erzincan, Turkey, stepped entrance and cella, 8th–7th cent. B.C.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 259. *Above, left*: Shield, detail, with lions and bulls, from the citadel of Karmir Blur, on the River Zanga, Armenian S.S.R., 8th cent. B.C. Bronze. Leningrad, The Hermitage. *Right*: Helmet, front view, with frieze of ritual scenes enclosed by lion-headed snakes, from the citadel of Karmir Blur, 8th cent. B.C. Repoussé bronze. Erevan, Armenian S.S.R., Museum. *Below*: Relief of a lion, from Erzincan, Turkey, 7th cent. B.C. Stone. Ankara, Archaeological Museum.

Pl. 260. Caldron and tripod, from Altıntepe, near Erzincan, Turkey, second half of 8th cent. B.C. Bronze; ht. of caldron, 20 1/8 in.; stand, 26 in. (Cf. detail, I, PL. 524.) *Right*: Caldron appliqués, from Gordium, Turkey, ca. 700 B.C. Bronze. (Cf. X, PL. 403.) All, Ankara, Archaeological Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 261. *Left*: Winged centauress, part of a throne, from Toprakkale, near Van, Turkey, 7th cent. B.C. Bronze, originally inlaid; ht., 8 in. (Cf. side view, IX, PL. 497.) London, British Museum. *Right*: Royal attendant, the so-called "eunuch," from Toprakkale, 7th cent. B.C. Bronze, originally gilded, with face of white stone; ht., 14 3/4 in. Berlin, Staatliche Museen.

URARTU
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 262. Pendant medallion, from Toprakkale, near Van, Turkey, ca. 600 B.C. Gold, $2^1/_2 \times 2^3/_8$ in. Berlin, Staatliche Museen.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 263. Toilet of the young women at 10 o'clock in the morning, from the series *Musume Hidokei*. Woodprint (*nishiki-e*), standard large size (*ōban*).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 264. Female figures. Color on silk. Present location unknown.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 265. Three beauties of the Kansei period. Woodprint, standard large size.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 266. *Left*: A teahouse beauty. Woodprint, standard large size. *Right*: Beauty behind mosquito netting reading a love letter. Woodprint, standard large size.

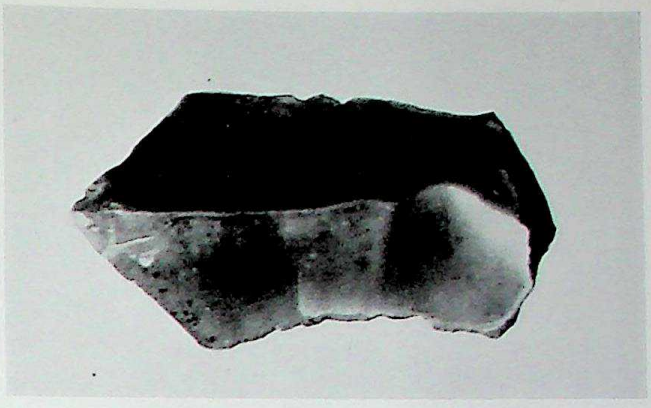
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

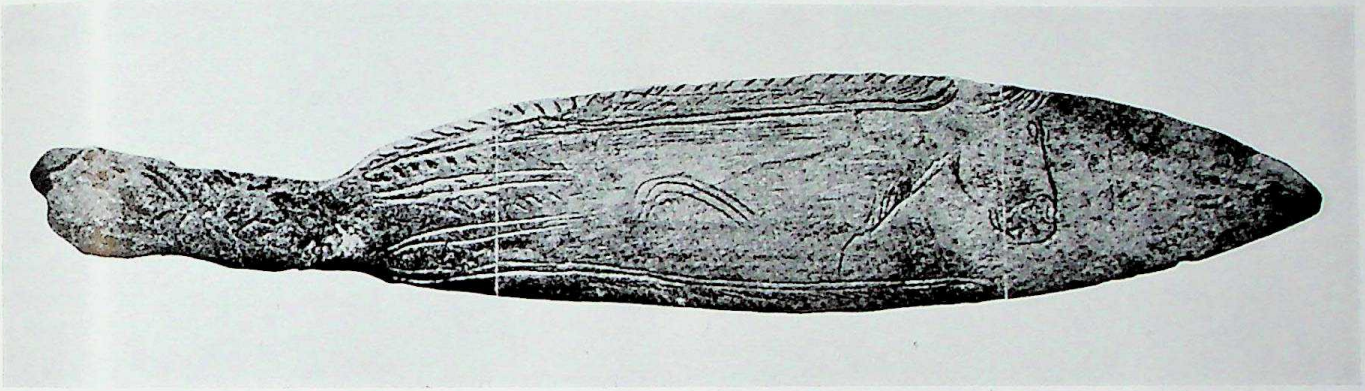
Pl. 267. Women playing at "tug of neck." Woodprint, standard large size.

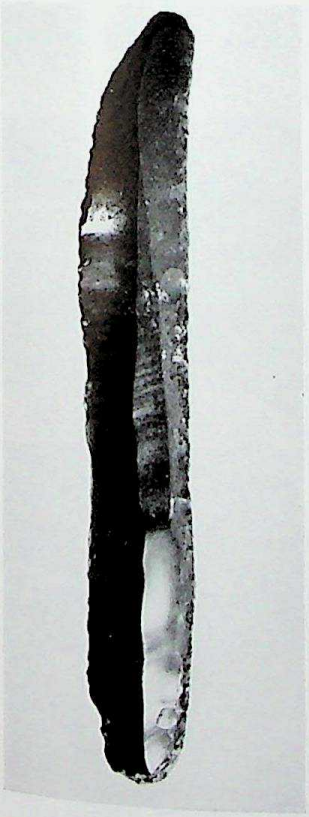
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

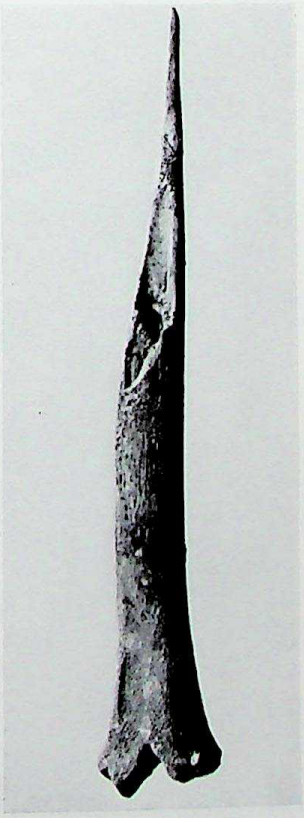
Pl. 268. *Above, left*: Okoma and Saizaburo (protagonists of the play *Chiwakagami Tsukinomurakumo*). Woodprint, standard large size. *Right*: Mother nursing her child. Woodprint, standard large size. *Below*: Abalone fishers, three sheets of a series of six. Woodprint, standard small size.

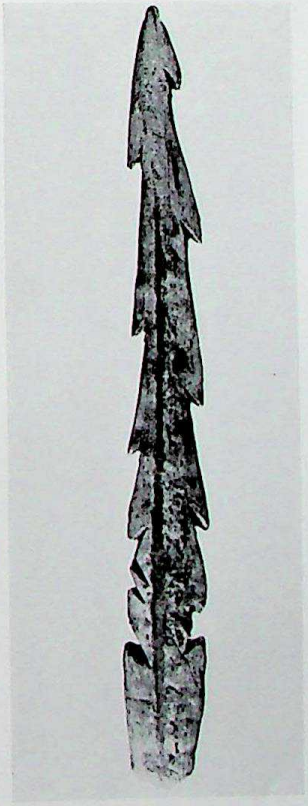
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

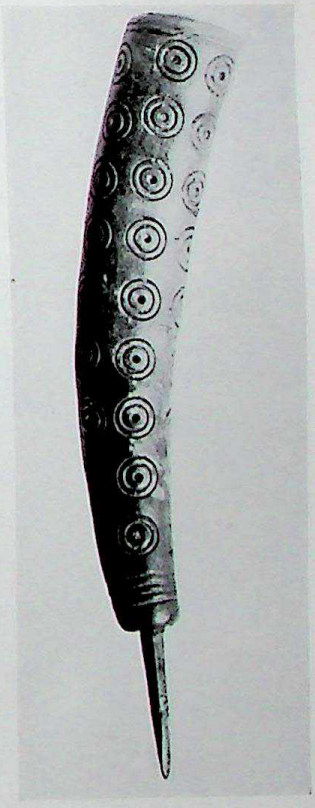






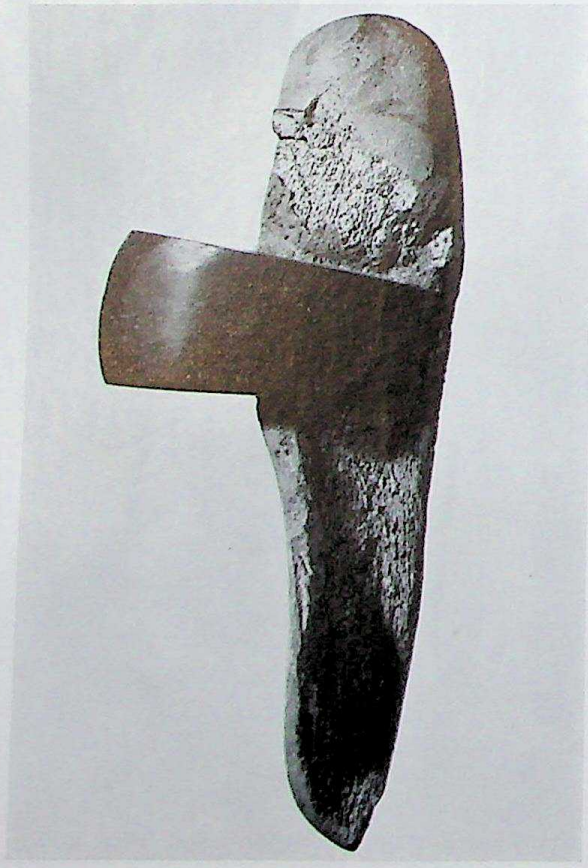






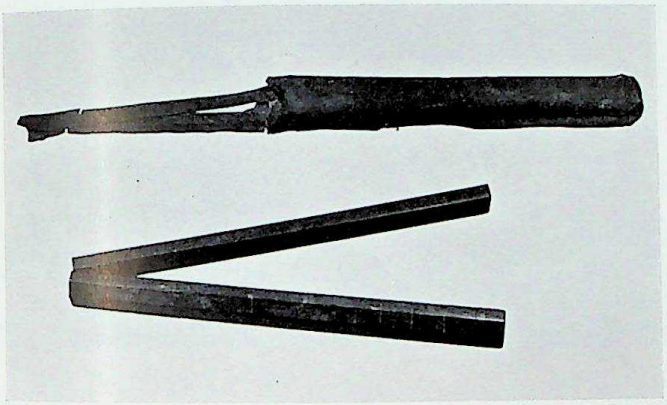
Pl. 269. *Above, left*: End scraper on a blade, from Valle della Vibrata, Teramo, Italy, Paleolithic period. Flint, l., $2^{1}/_{8}$ in. *Right*: Microlithic burin, Mesolithic period. Flint, l., $^{3}/_{4}$ in. Both, Rome, Museo Pigorini. *Center*: Spatula with engraving of a horse, from Pékarna, Czechoslovakia, Upper Magdalenian period. Bone, l., $11^{1}/_{4}$ in. Brno, Czechoslovakia, Moravian Museum. *Below, left to right*: Blade, from Valle della Vibrata, Teramo, Italy, Neolithic period. Flint, l., $6^{7}/_{8}$ in. Instrument of uncertain use (awl?), from Sasso di Furbara, Italy, Neolithic period. Bone, l., $5^{7}/_{8}$ in. Harpoon, from the Palude Brabbio, near Varese, Italy, Bronze Age. Bone, l., $8^{1}/_{4}$ in. Awl, from the Terramara Ognissanti site, Pieve San Giacomo, near Cremona, Italy, Bronze Age. Bronze with horn handle, l., $6^{7}/_{8}$ in. Last four, Rome, Museo Pigorini.

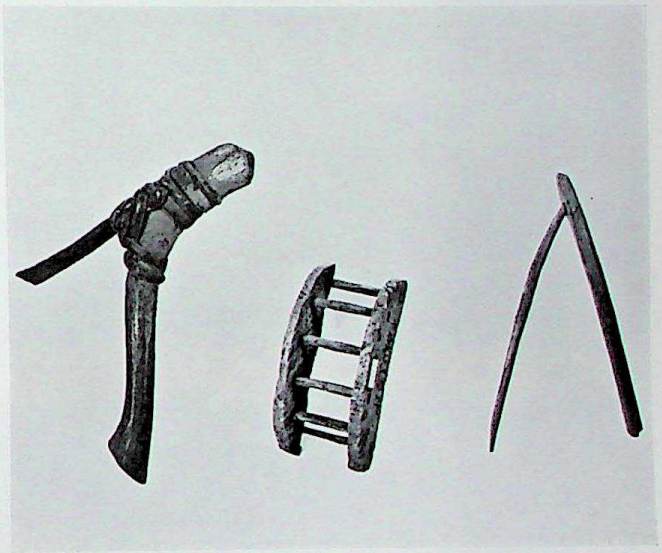
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

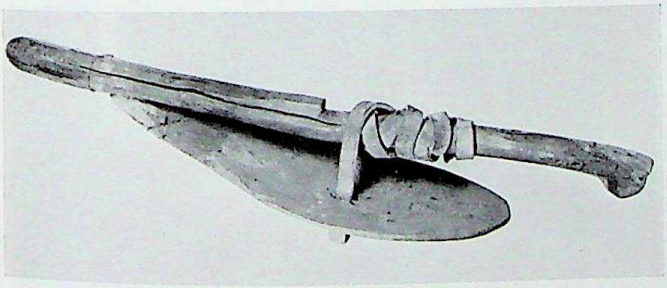


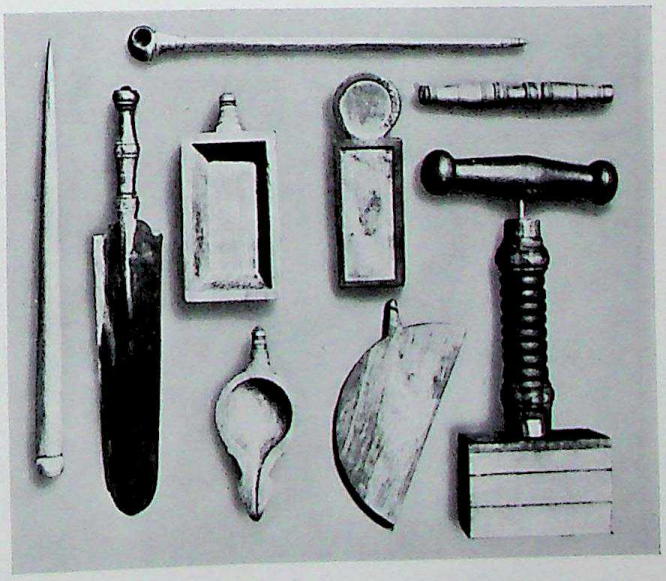
Pl. 270. *Left, above*: Ax, from Chiozza di Scandiano, Reggio Emilia, Italy, Neolithic period. Polished stone, l., $5^{5}/_{8}$ in. *Below*: Adz with handle, from Lake Constance, Switzerland, Aëneolithic period. Stone and horn, l., $8^{5}/_{8}$ in. *Right, above*: Flanged ax, from Cerea San Vito, near Verona, 8th cent. B.C. Bronze, l., $7^{7}/_{8}$ in. All three, Rome, Museo Pigorini. *Below*: Ax, from Luristan, 8th–7th cent. B.C. Bronze, l., $6^{1}/_{4}$ in. Teheran, Foroughi Coll.

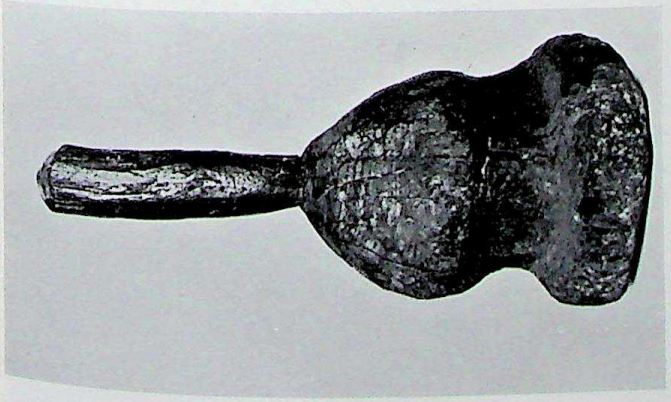
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



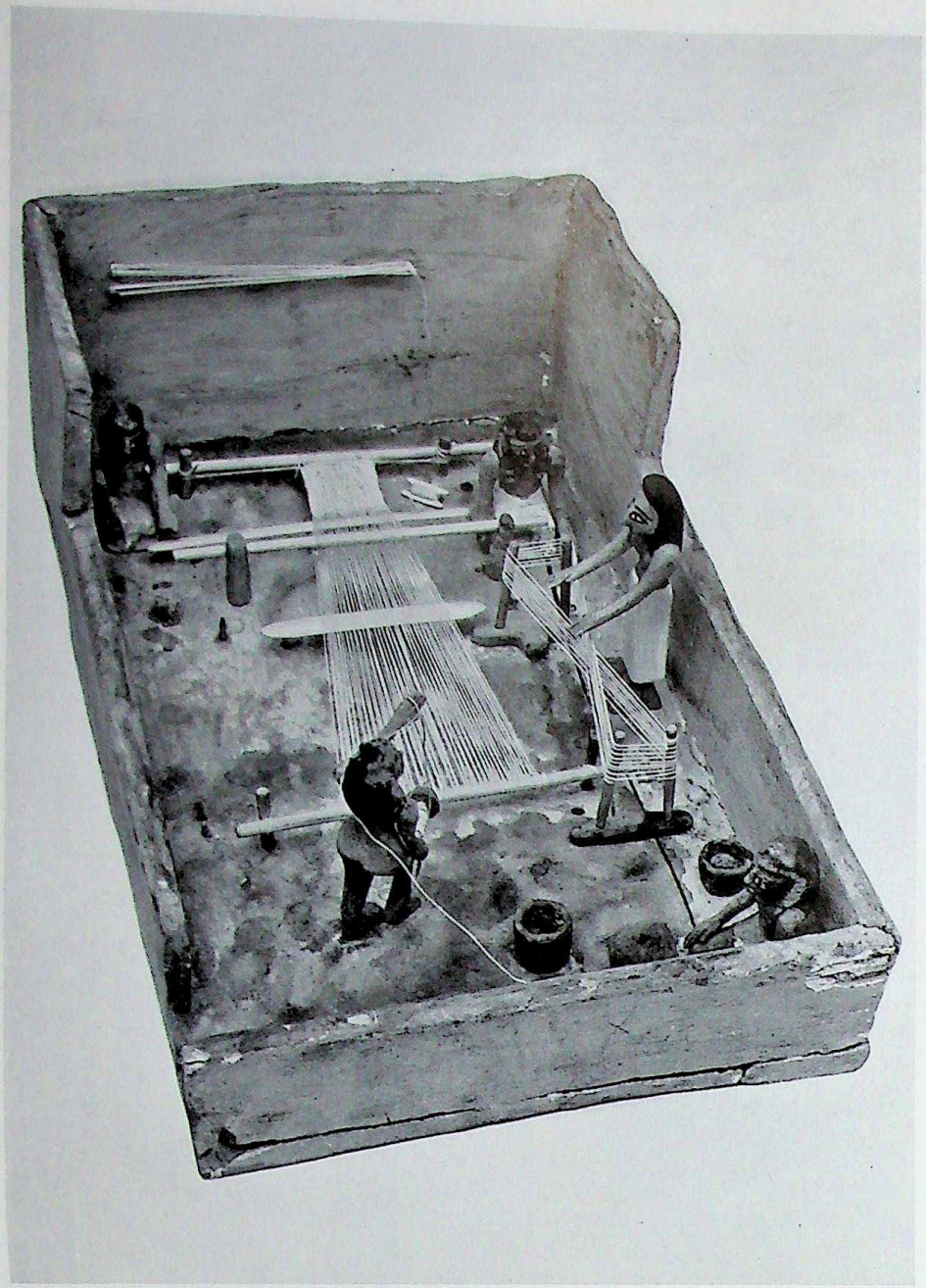


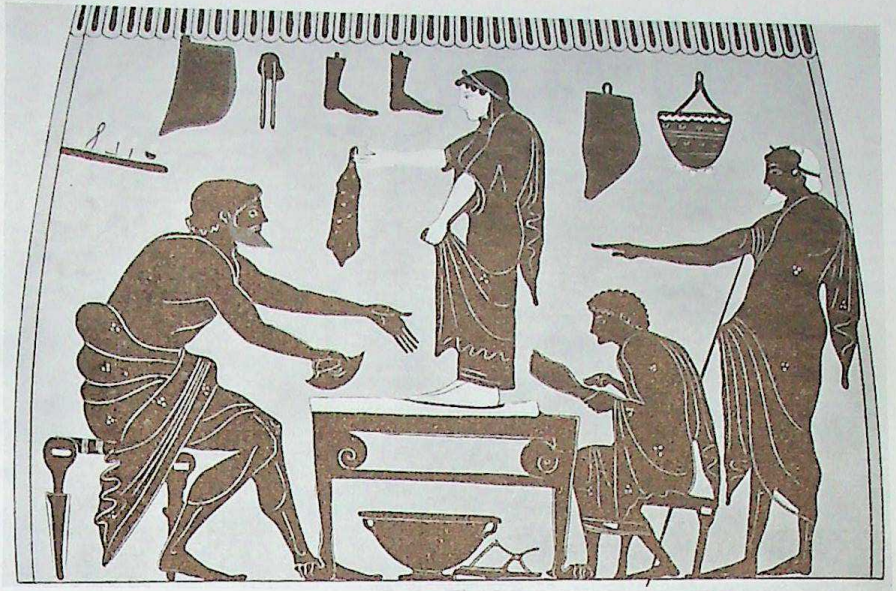


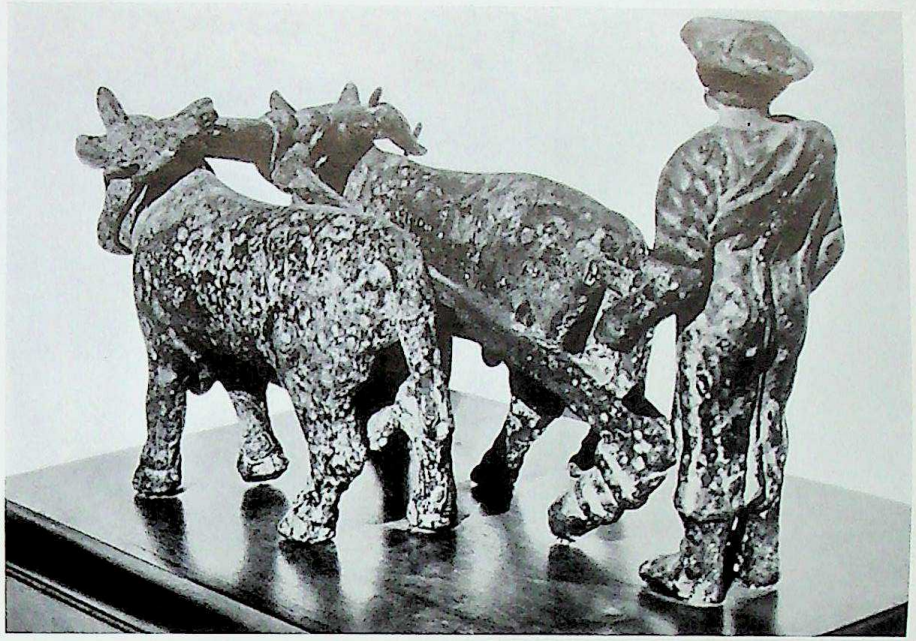




Pl. 271. *Above, and left, center*: Pincers and folding cubit with case, from the tomb of Kha, Thebes, 18th dynasty. Bronze, and acacia wood and leather. Both, Turin, Museo Egizio. *Left, two below*: Hoe and mallet, from Theban tombs 18th–20th dynasty. Wood and leather; l. of hoe, 27 3/8 in. *Right, center*: Models of a hatchet, mason's rocker, and hoe, from a foundation deposit of the tomb of Queen Hatshepsut, Deir el-Bahri, 18th dynasty. Wood, leather, and bronze. Last five, Florence, Museo Archeologico. *Below*: Implements of the Vedic sacrifice, from India. Berlin, Staatliche Museen.



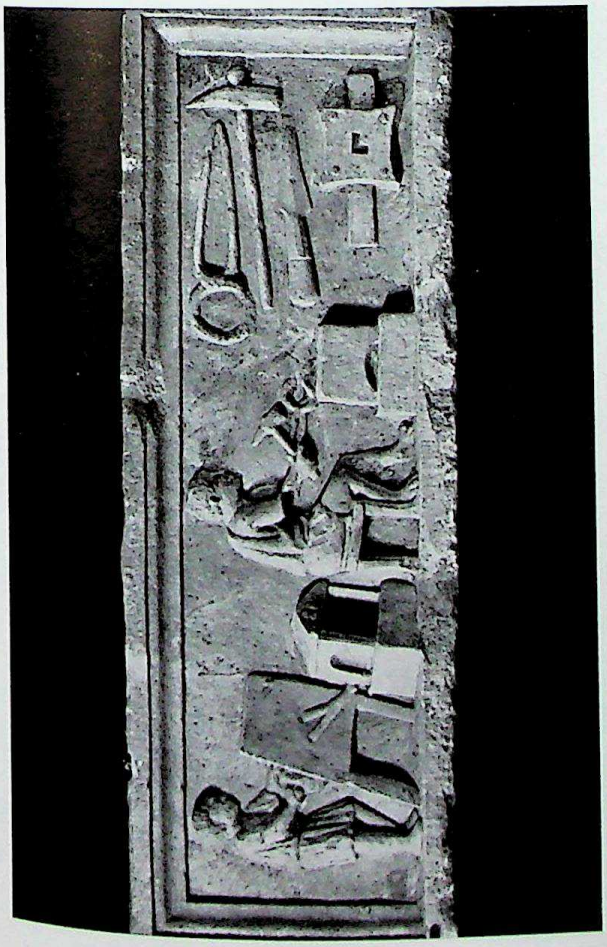


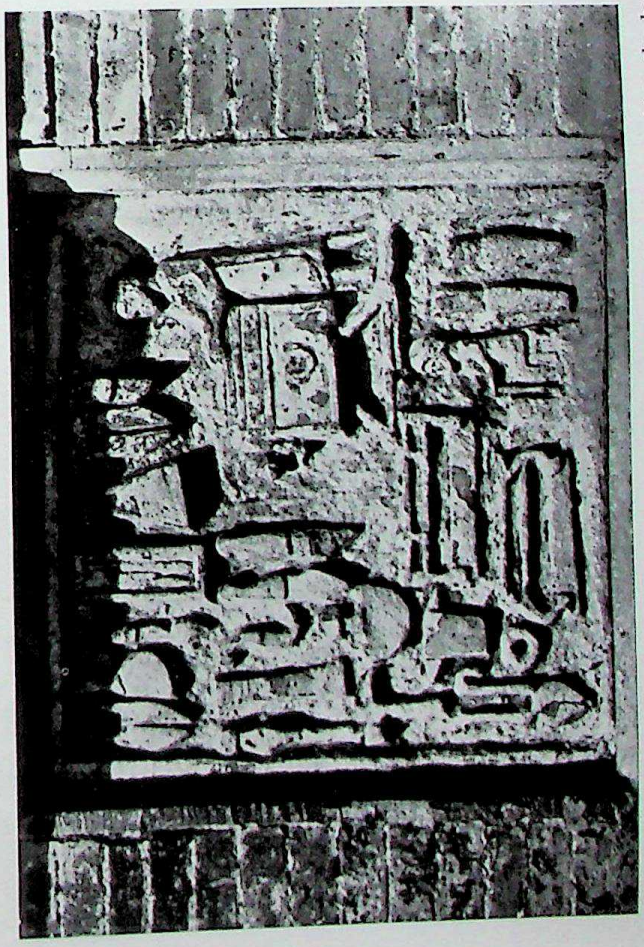


Pl. 272. *Left*: Egyptian simple horizontal loom, in a funerary model of a weaver's workshop from Girga, 12th dynasty. Wood, stuccoed and painted (restored); ht., 8¾ in. New York, Metropolitan Museum. *Right, above*: Greek shoemaker cutting a pattern with a half-moon knife, drawing of a scene on an amphora of the late 6th cent. B.C. Boston, Museum of Fine Arts. *Below*: Etruscan plowman with yoked oxen, figurine from Arezzo, Italy, ca. 400 B.C. Bronze, ht., 4⅜ in. Rome, Museo di Villa Giulia.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

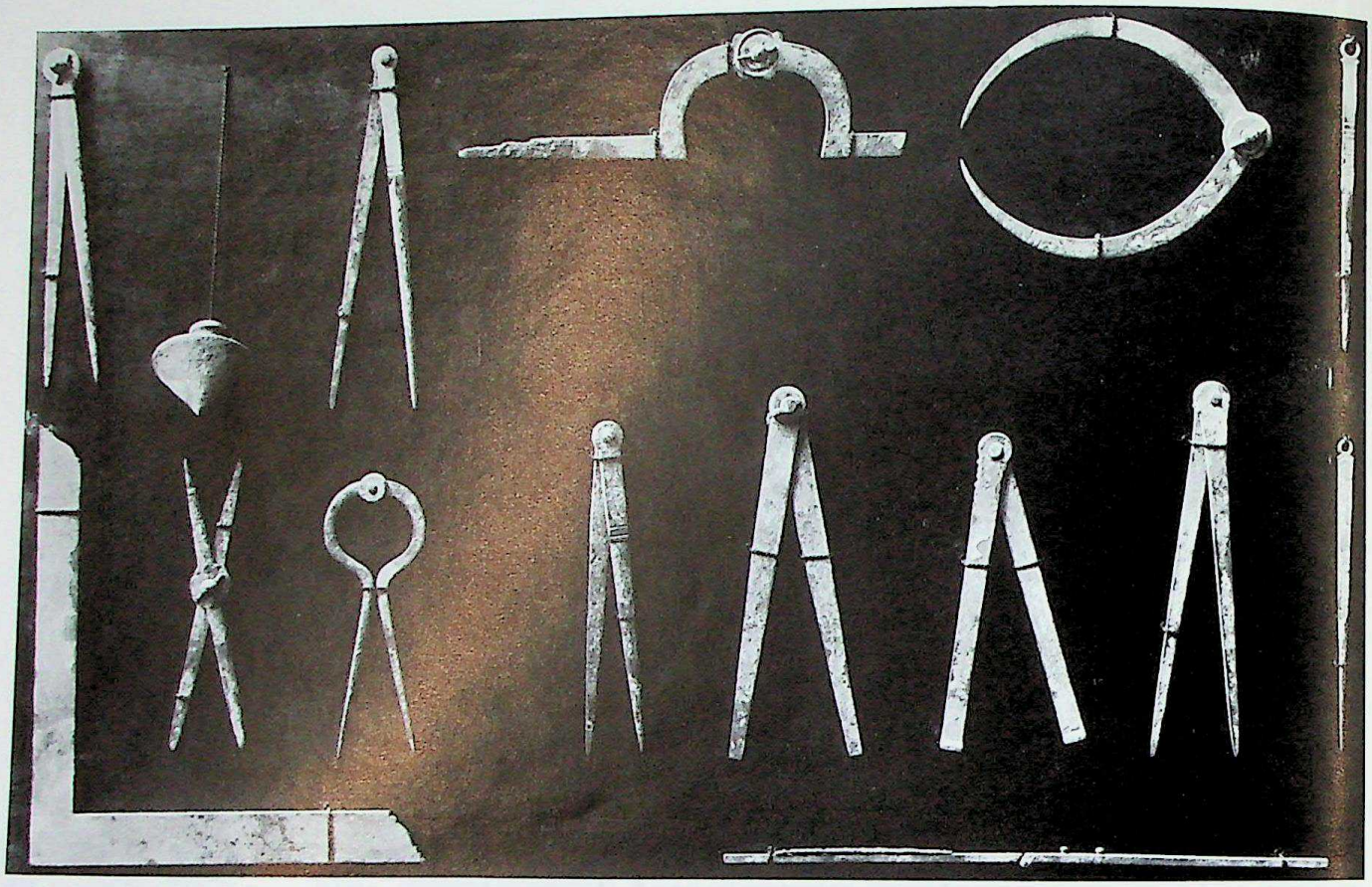
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

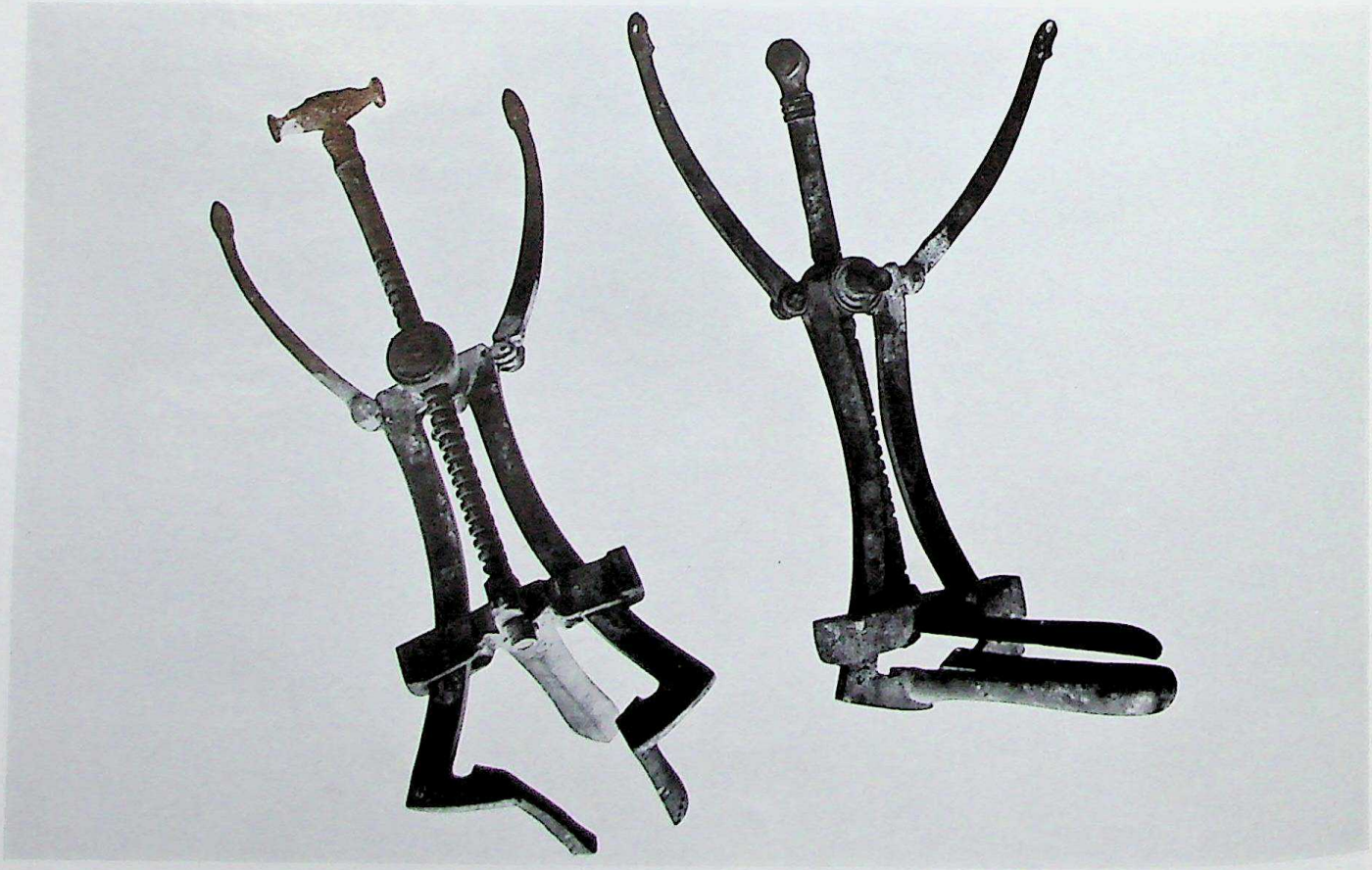




Pl. 273. *Left, above:* Roman smithy, relief from a stele showing a boy working the bellows and the smith at the forge, with (*at right*) tongs, hammer, rasp, and lock, 1st–2d cent. Marble, ht., 16 1/8 in. Aquileia, Italy, Museo Archeologico. *Below:* Roman ironmongery, relief showing knives, saws, hammers, chisels, and other tools, on a tomb of the Isola Sacra, near Ostia, 2d cent. Terra cotta, 18 3/4 × 17 3/4 in. *Right:* Gallo-Roman shoemaker at work, relief on a stele, 3d cent. Stone, ht., 39 in. Reims, Musée Historique et Lapidaire. (Photo from a cast.)

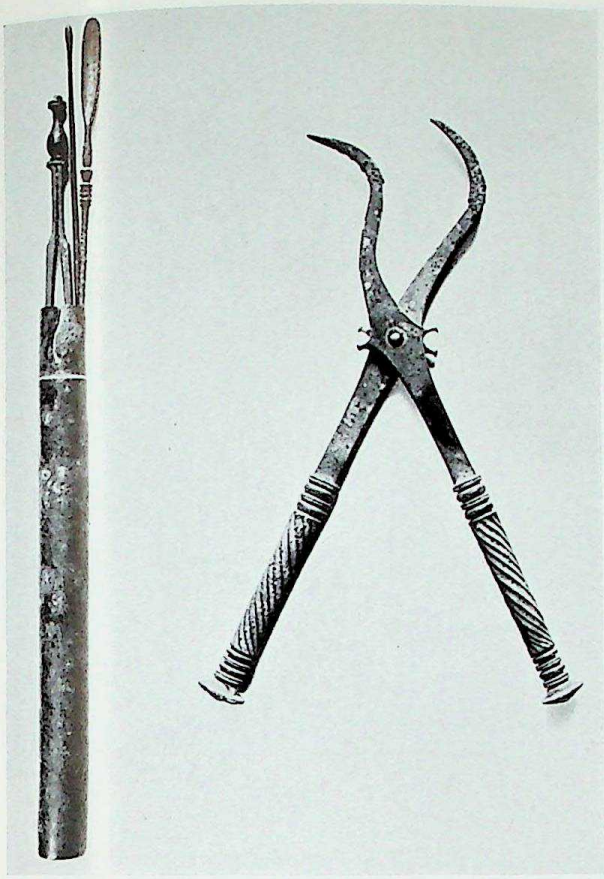
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

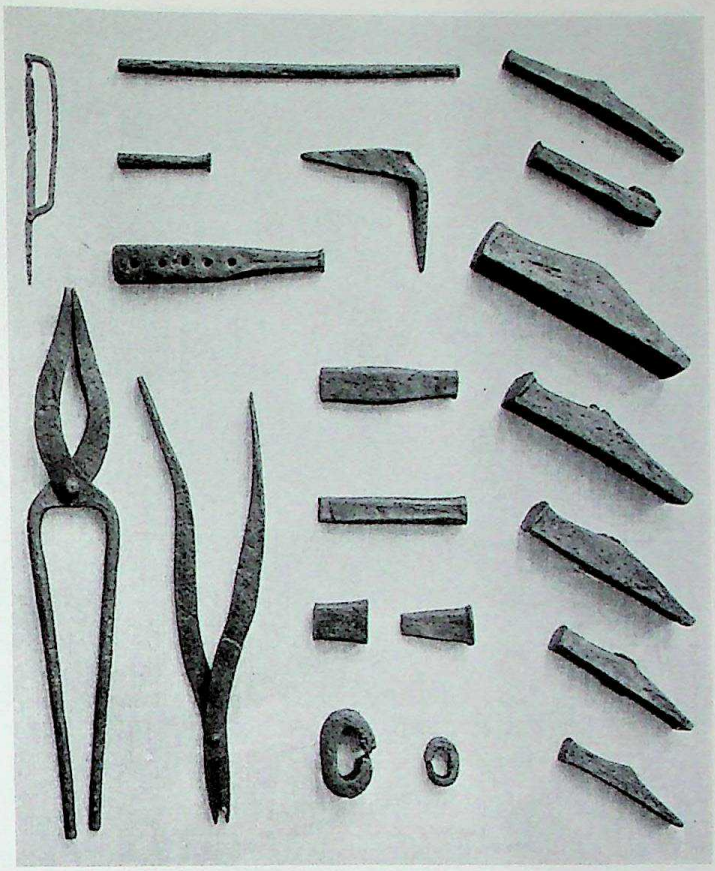


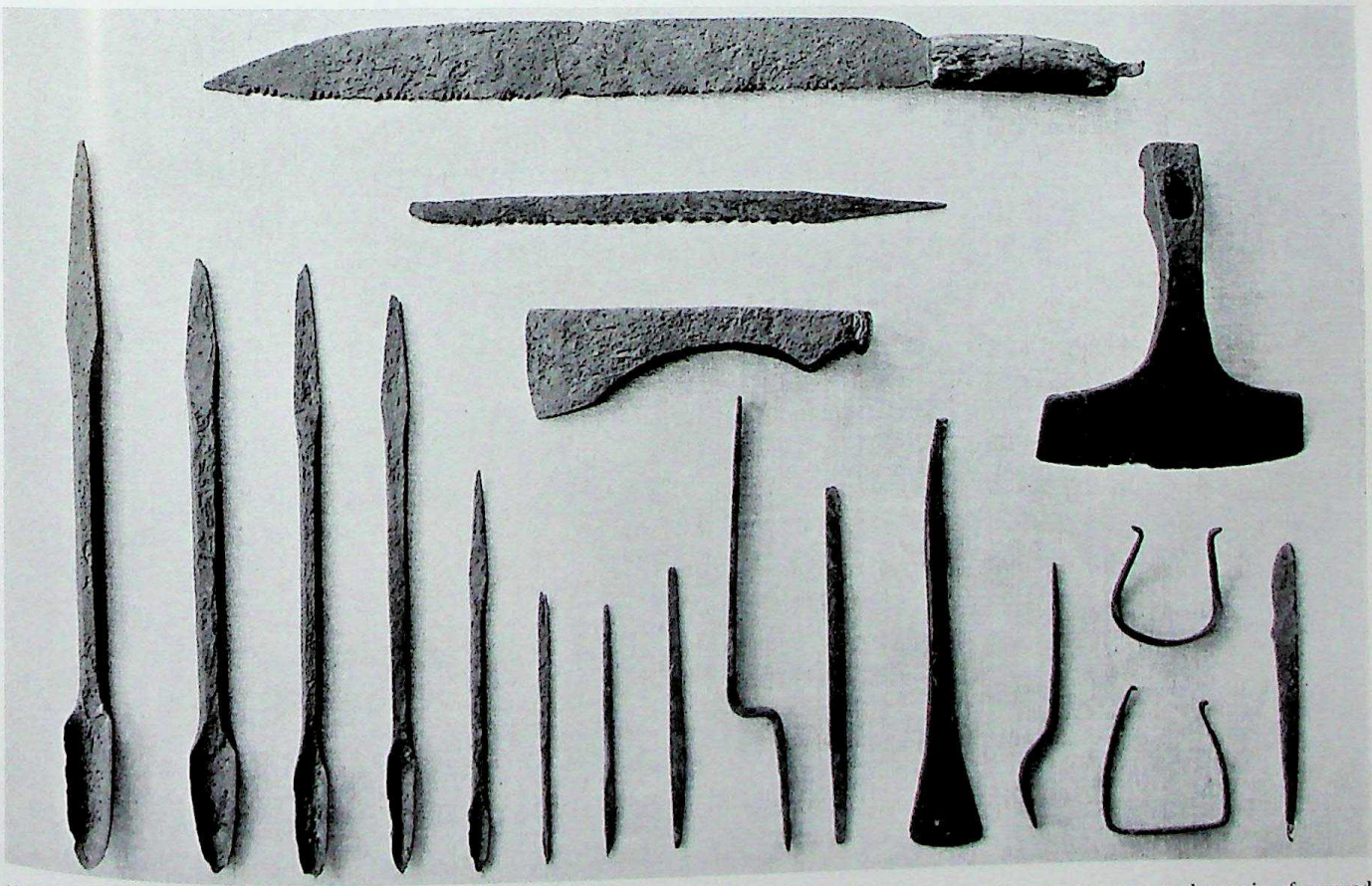


Pl. 274. Roman instruments from Pompeii, 1st cent. Bronze (silver inlay on curved calipers). *Above*: Calipers, compasses, square, plummet. *Below*: Trivalve vaginal speculum. All, Naples, Museo Nazionale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

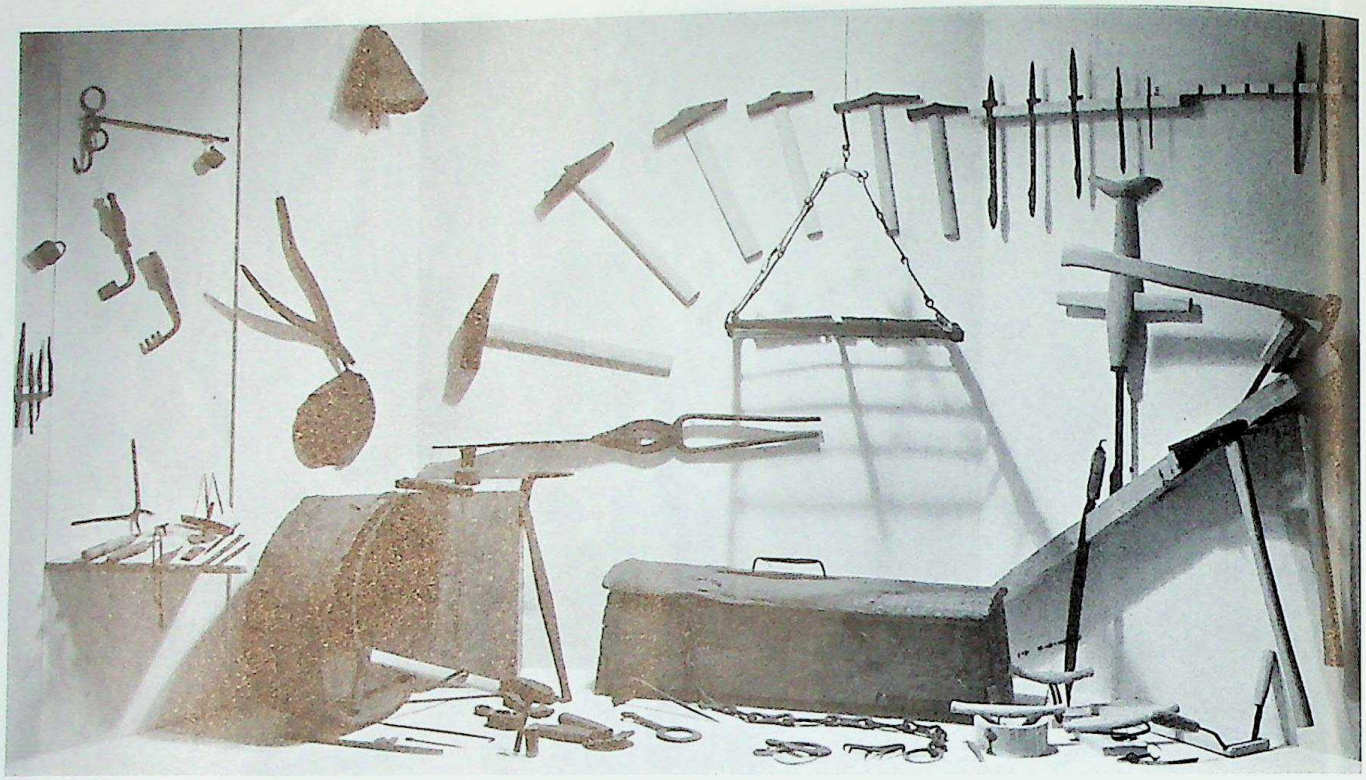


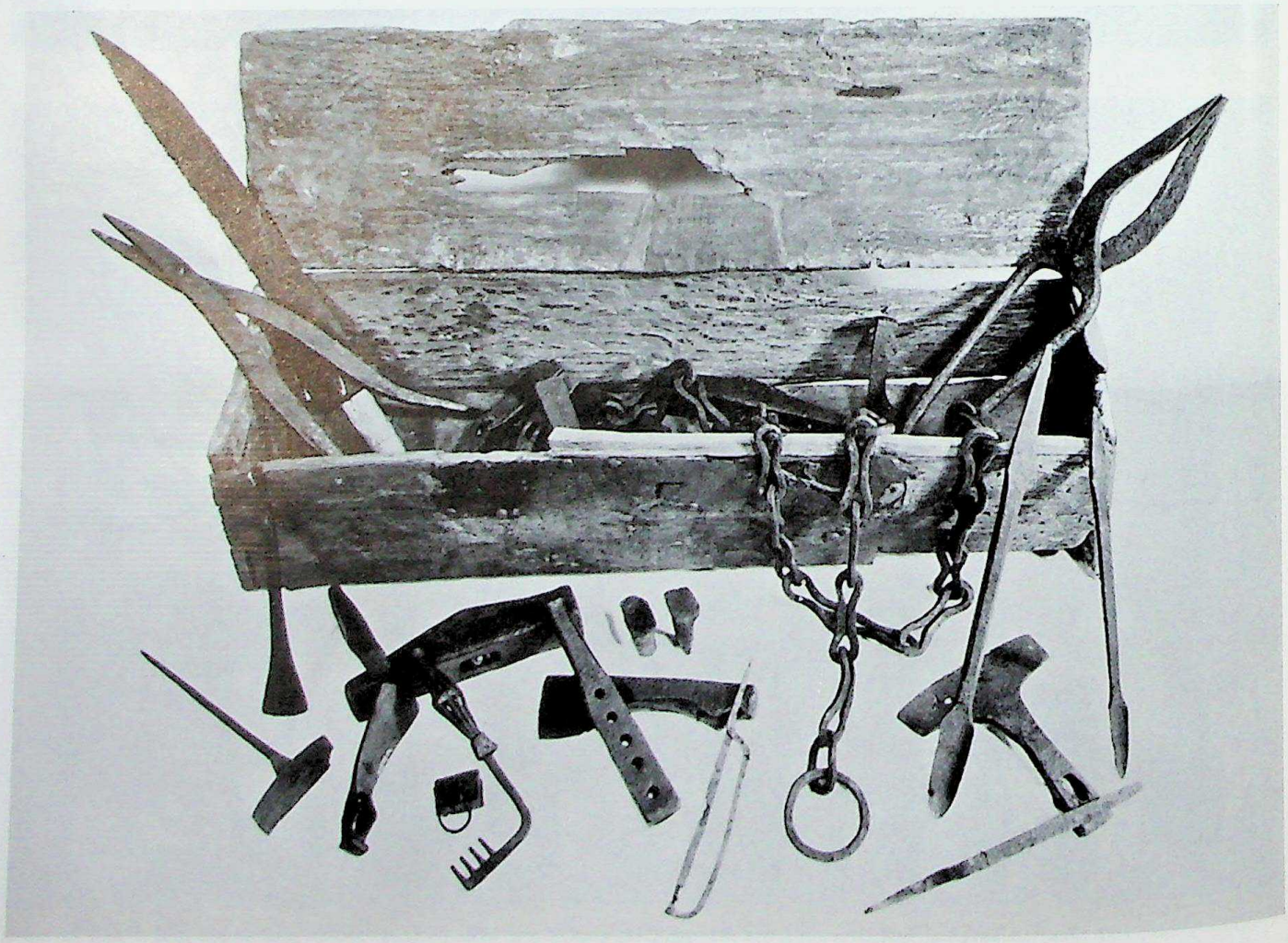




Pl. 275. *Above, left*: Roman surgical instruments from Pompeii, 1st cent. Case with pincers, probe, and spoon and a pair of curved forceps. Bronze, l. of forceps, 7 7/8 in. Naples, Museo Nazionale. *Above, right and below*: Viking tools from Mastermyr, Gotland, Sweden, 950–1000. *Above, right*: Smith's tools, including hammers, punches, tongs, and a small saw. *Below*: Shipwright's tools, including an adz, ax, chisels, augers, draw knives and a saw. All, Stockholm, Statens Historiska Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 276. Viking tools and toolbox (also shown in close-up), from Mastermyr, Gotland, Sweden, 950–1000. Stockholm, Statens Historiska Museum.

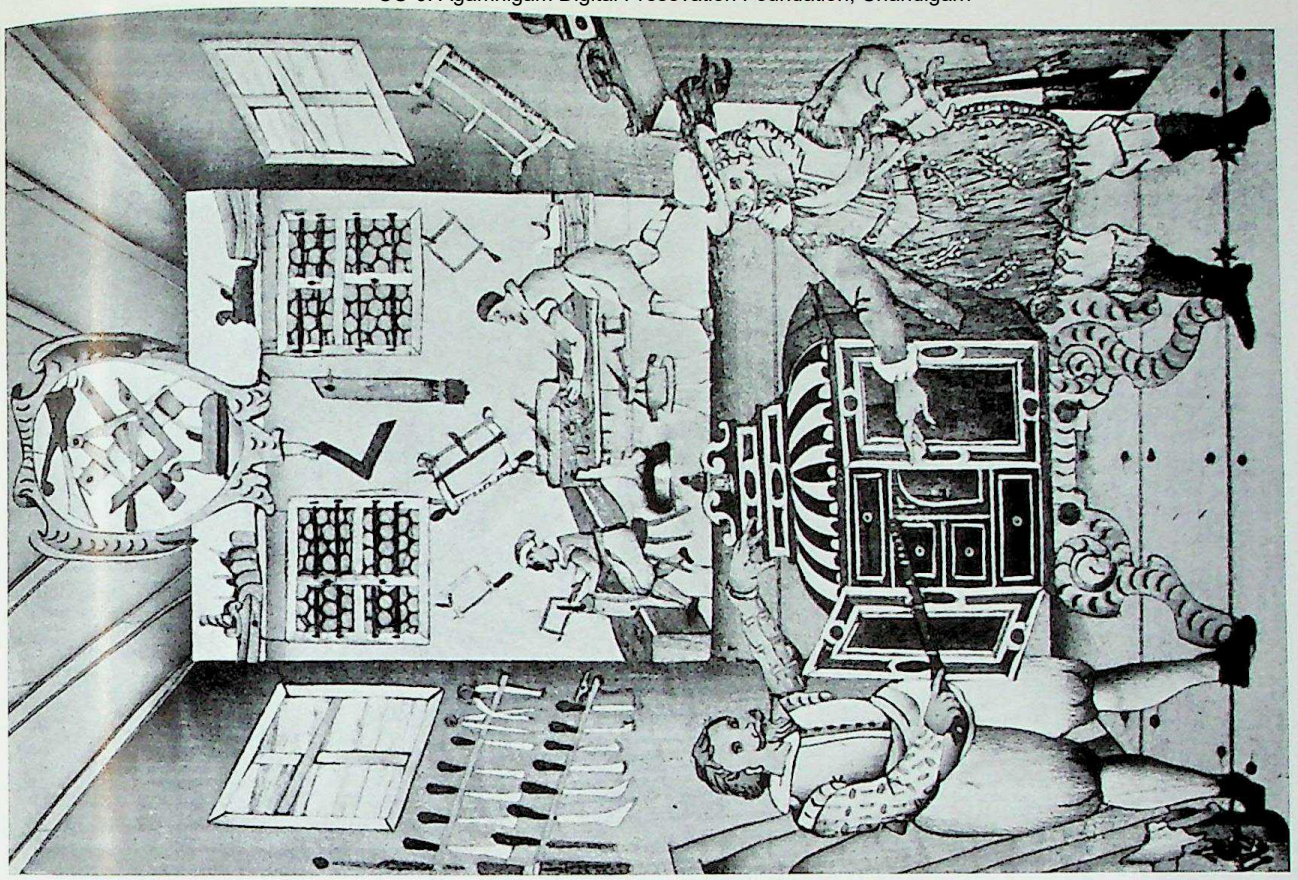
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

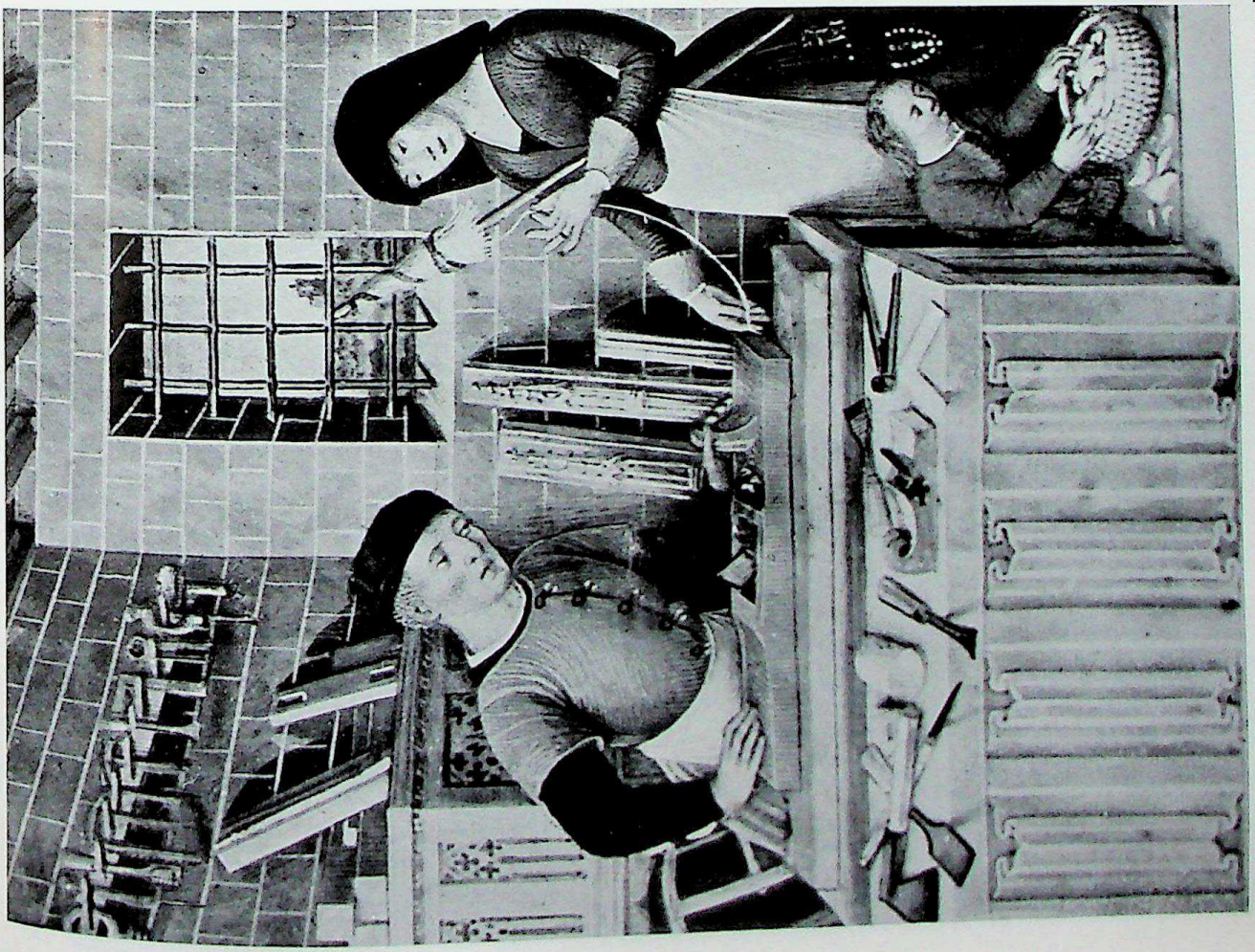
Pl. 277. Shipbuilders at work, showing use of a two-handed auger, adz, hammers, and chisels, relief on the great arch of the west façade of S. Marco, Venice, third quarter of 13th cent.

Pl. 278. *Left*: Monk using mallet and chisel at a carpenter's bench, detail of a choir stall, from the convent church of Pöhlde, Germany, 1284. Oak. Hannover, Germany, Landesmuseum. *Right*: Tubalcain using tongs at a forge, with bellows at left, relief by Giotto and Andrea da Pontedera on the Campanile of Florence Cathedral, 14th cent.

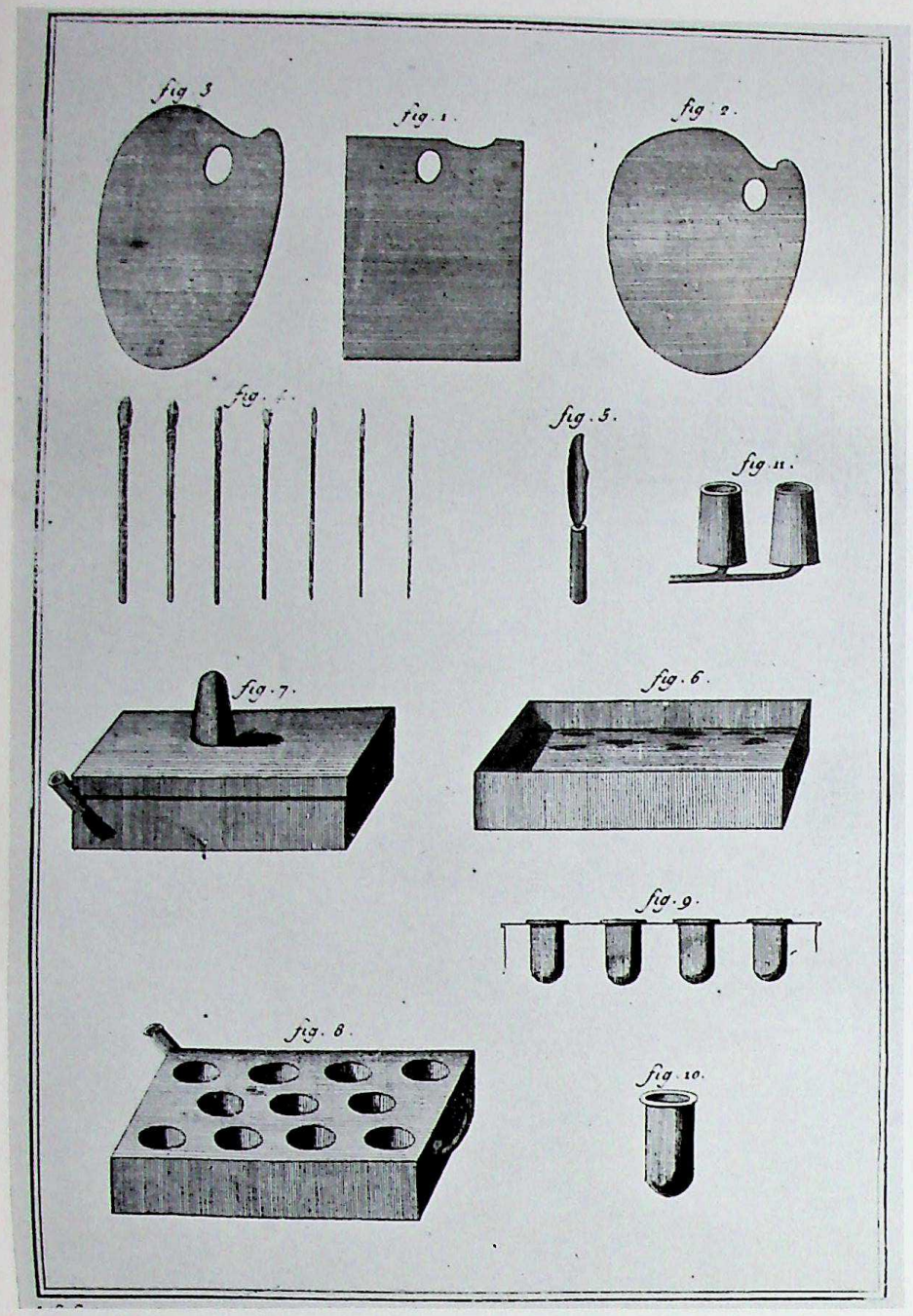
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

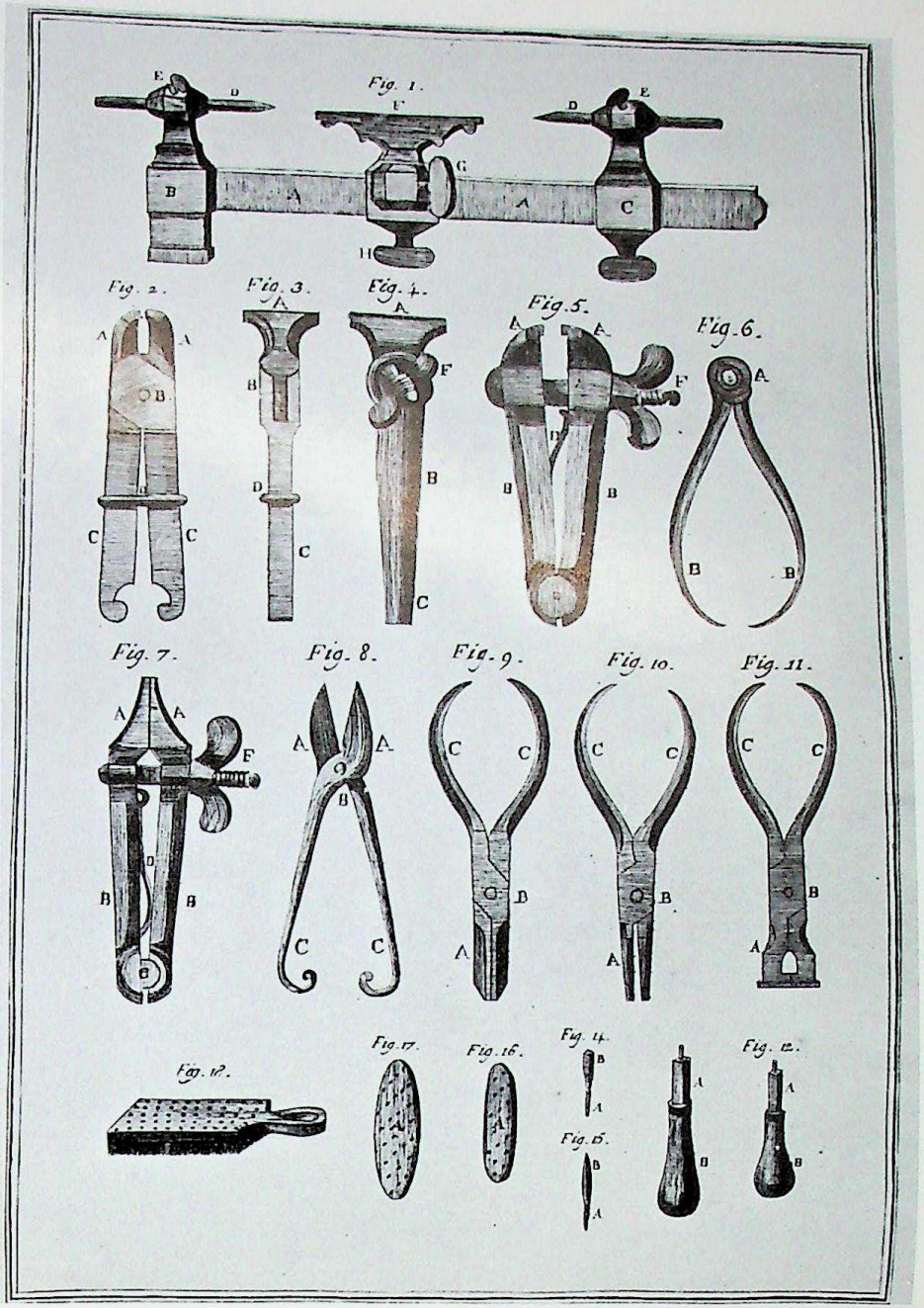
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





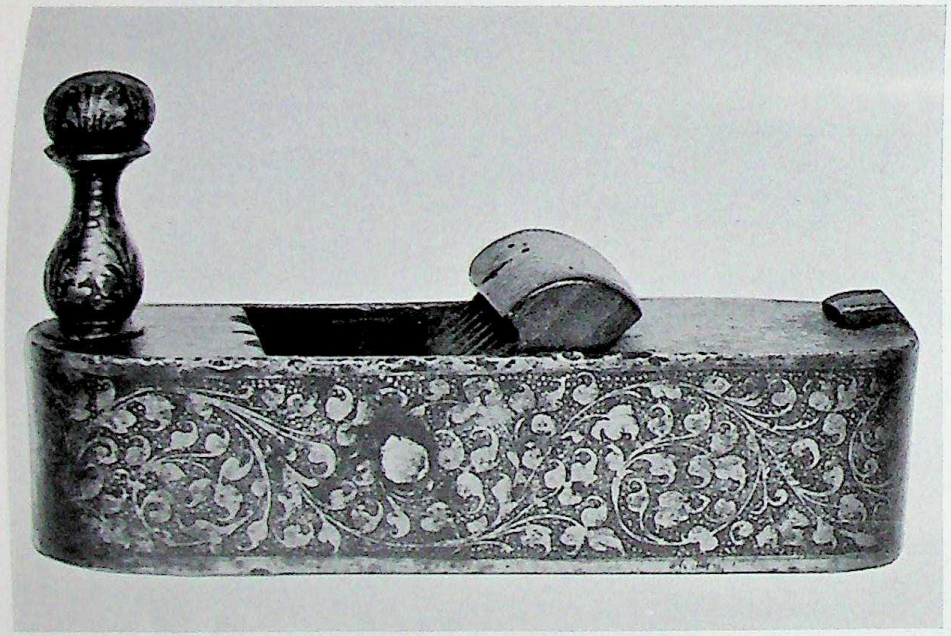
Pl. 279. *Left*: Carpenter in his workshop using a trying plane, depicted in a painting on vellum by J. Bourdichon, ca. 1510. Paris, Musée de l'Ecole des Beaux-Arts. *Right*: Cabinetmaker's workshop, showing (in the background) the fret saw and veneer plane in use, marquetry panel on a chest made for Gustavus II of Sweden, Augsburg, Germany, ca. 1632. Uppsala, Sweden, University Museum.

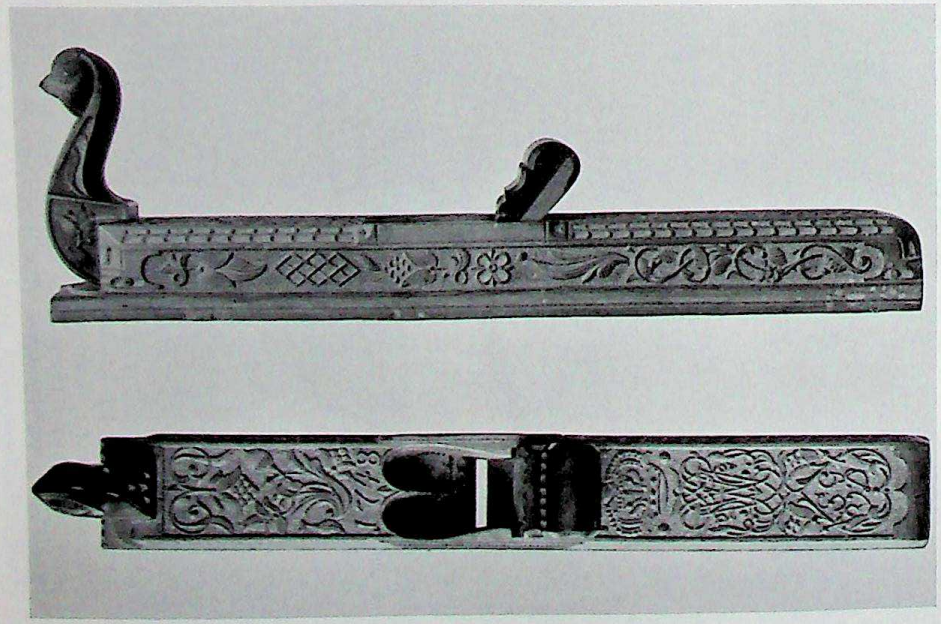


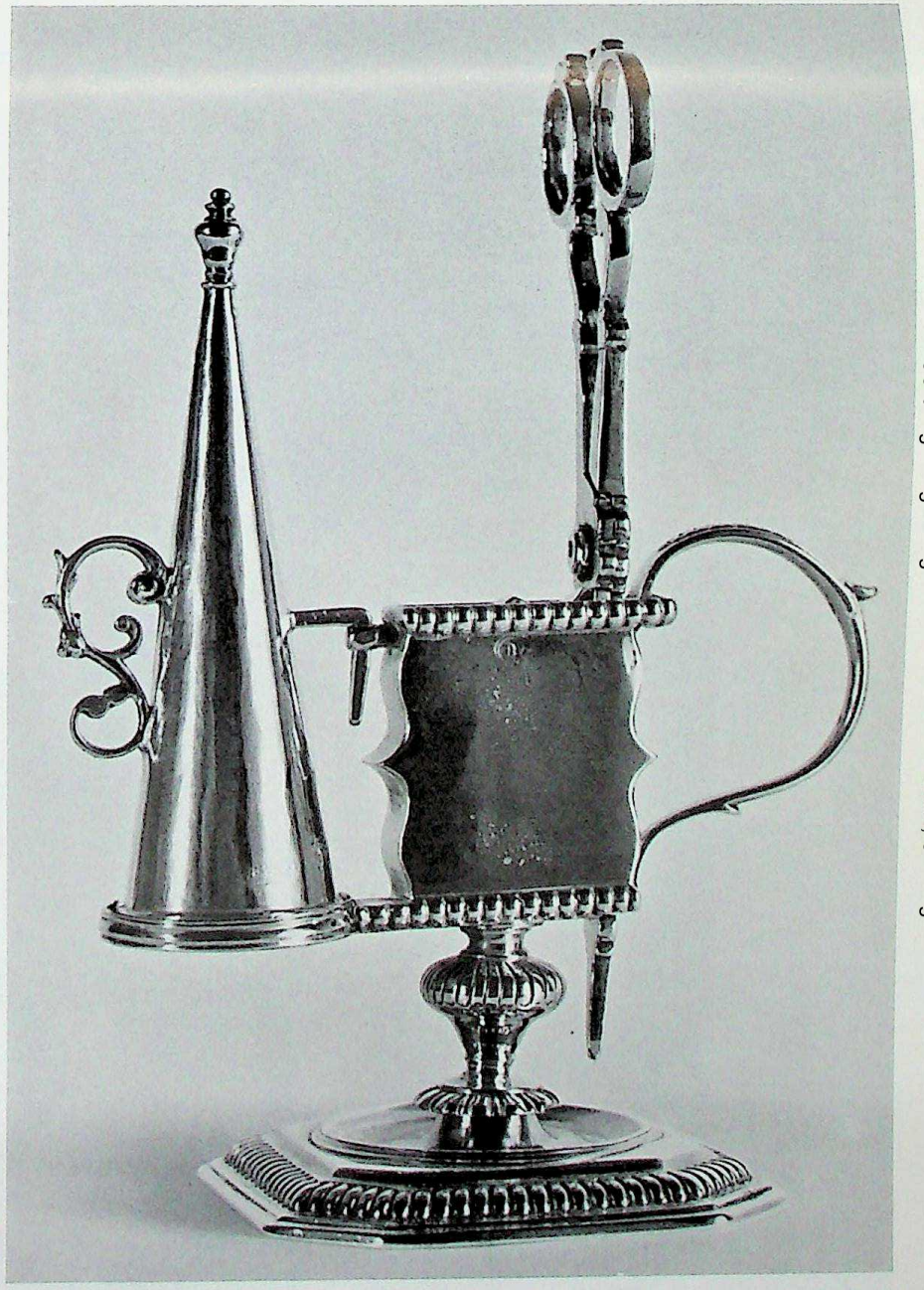


Pl. 280. Tools used in encaustic painting (*left*) and in *orfèvrerie* (*right*). Illustrations in the *Encyclopédie des Sciences, des Arts, et des Métiers*, 18th cent. *Left*: Palettes, brushes, containers, and box for melting the colors. *Right*: Hand lathe, vises, compass, shears, pliers, punches, brush. [Reproduced from the Lucca edition, Plates VIII, XIII (144, 45), Tome VIII, 1773, *Planches pour L'Encyclopédie des Sciences, des Arts Libéraux, et des Arts Méchaniques.*]

CC-0. Agamnigal Tiwari Digital Research Foundation, Chandigarh



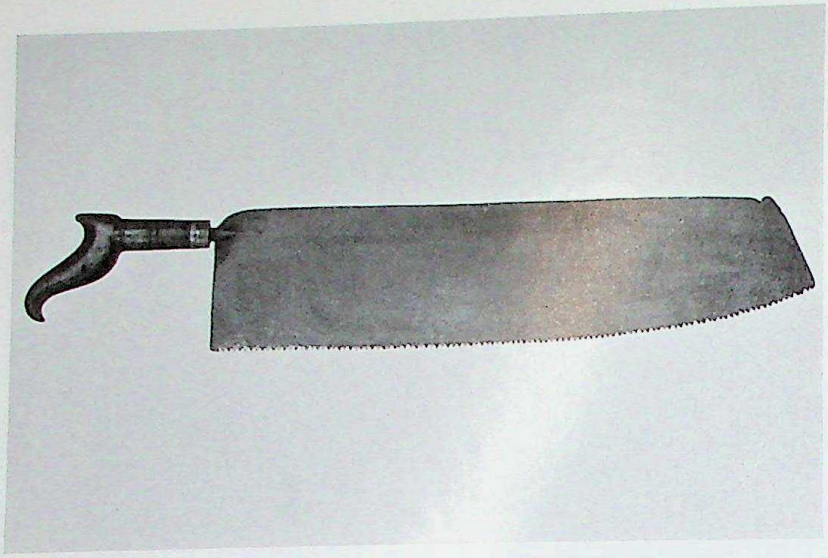


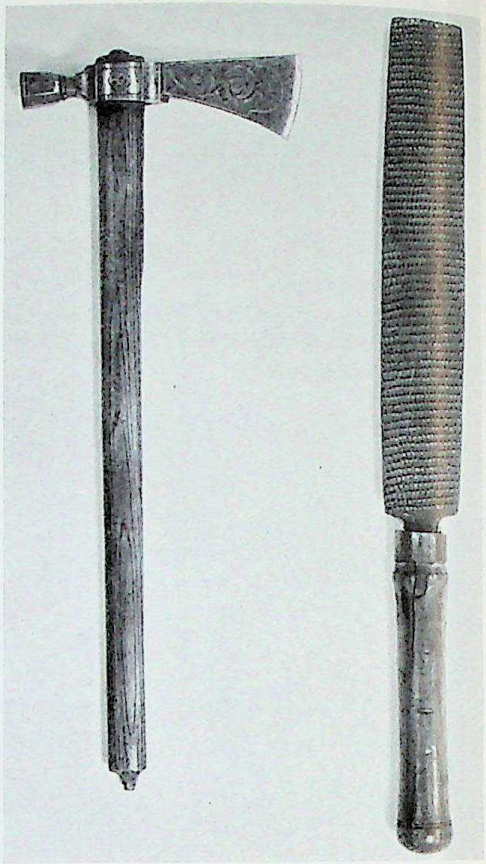


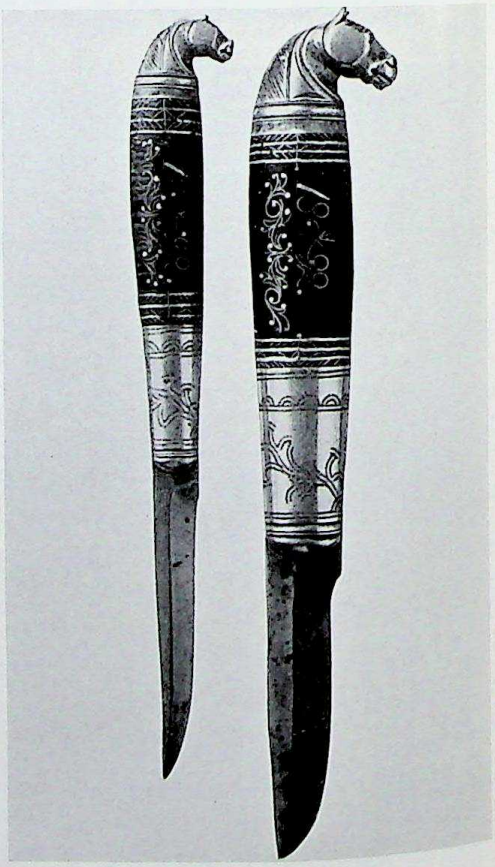
Pl. 281. *Left, above*: Block plane, Austria, ca. 1575. Steel. Vienna, Österreichisches Museum für Angewandte Kunst. *Below*: Jack plane of Adolphus Frederick of Sweden, dated 1748, side and top views. Wood and iron. Stockholm, Nordiska Museet. *Right*: Candle extinguisher and snuffers, by T. Brydon, London, 1697–98. Silver. London, Assheton-Bennett Coll.

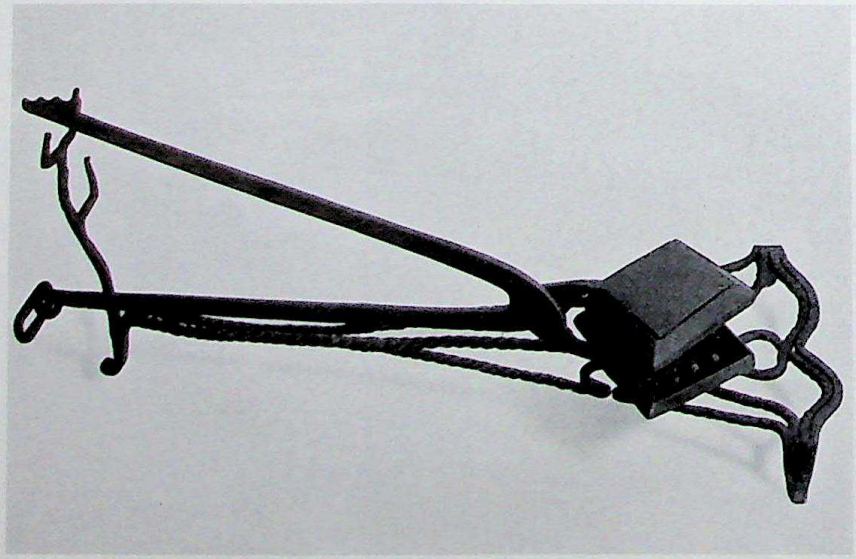
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh







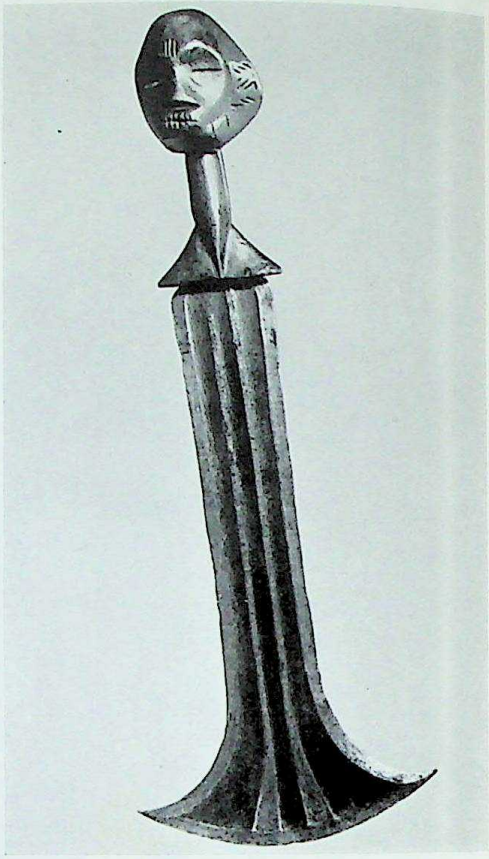


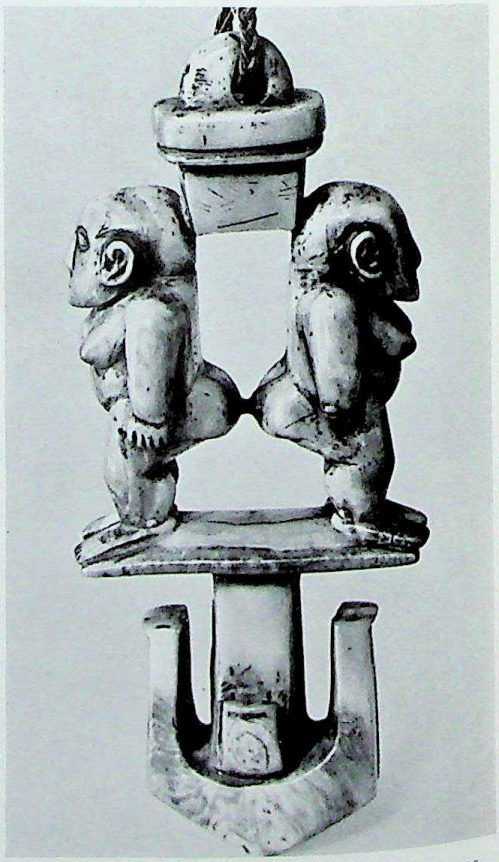
Pl. 282. *Left, above*: Dutch handsaw with medieval-type tanged handle, ca. 1750. Wood and iron. Leeuwarden, Netherlands, Fries Museum. *Center*: Sheep shears and sheath, central Italy, 19th cent. Iron. *Below*: Wafer iron with stand, central Italy, 19th cent. Both, Rome, Museo delle Arti e delle Tradizioni Popolari. *Right, above*: Dutch engraved hammer ax and rasp, ca. 1690. Wood and steel. Leningrad, The Hermitage. *Below*: Pair of Finnish sheath knives for working and eating, made by Kustaa Lammi, Kauhava parish, dated 1892. Birch bark and metal, l., $6^1/_2$ and $5^7/_8$ in. Helsinki, Kansallismuseo.

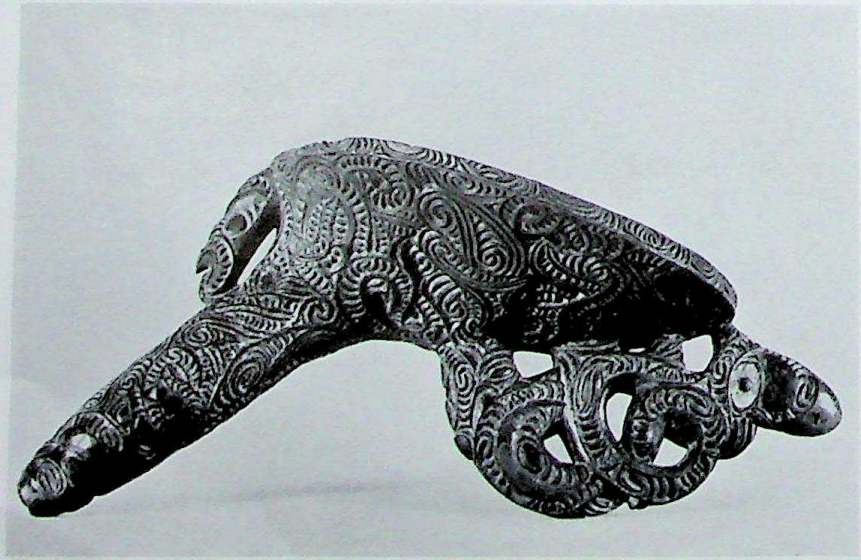
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 283. Wool winder and spinning wheel with distaff, from Lombardy, Italy, 19th cent. Wood. Rome, Museo delle Arti e delle Tradizioni Popolari.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh







Pl. 284. *Left, above*: Betel-lime spatulas, from the Trobriands. Wood, l. of center spatula, 25 5/8 in. *Center*: Rice-harvesting knife, from Borneo. Wood with iron blade, l., 11 3/4 in. Both, Vienna, Museum für Völkerkunde. *Below*: Maori chief's feeding funnel, used during application of facial tattoo, from New Zealand, 19th cent. Wood, l., 9 7/8 in. London, British Museum. *Right, above*: Mpama-Kutu ceremonial knife, Lukolela area, Congo, before 1914. Wood with iron blade, l., 18 1/2 in. Tervueren, Belgium, Musée Royal de l'Afrique Centrale. *Below*: Fiji ceremonial object in the form of a meathook, ca. 1875. Whaletooth ivory, ht., 7 in. Cambridge, England, University Museum of Archaeology and Ethnology.

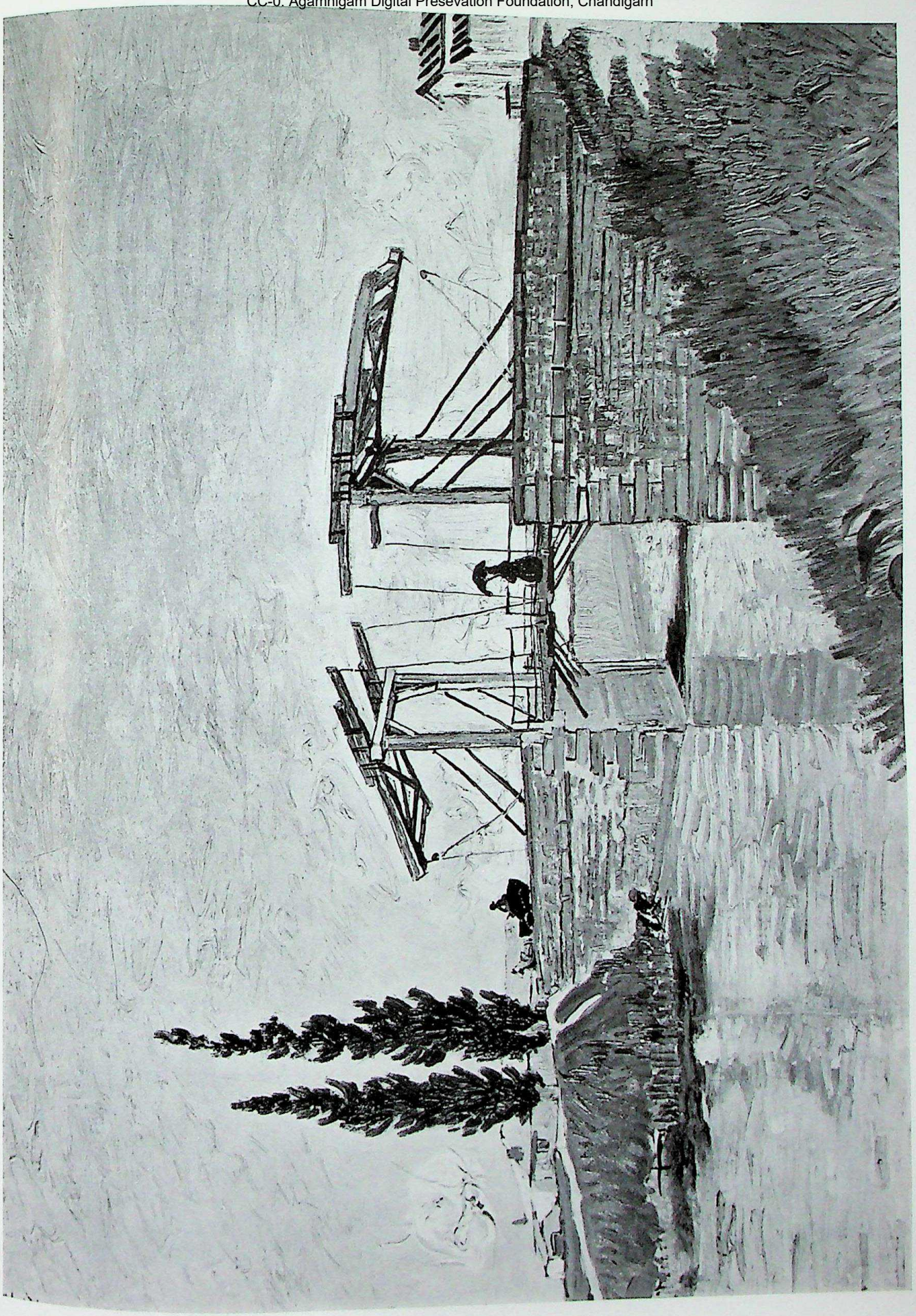
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 285. Symbols of the arts and trades in the city of Orvieto, showing tools and products, parchment listing the order of precedence for religious processions, 1602. Orvieto, Italy, Museo dell'Opera del Duomo.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

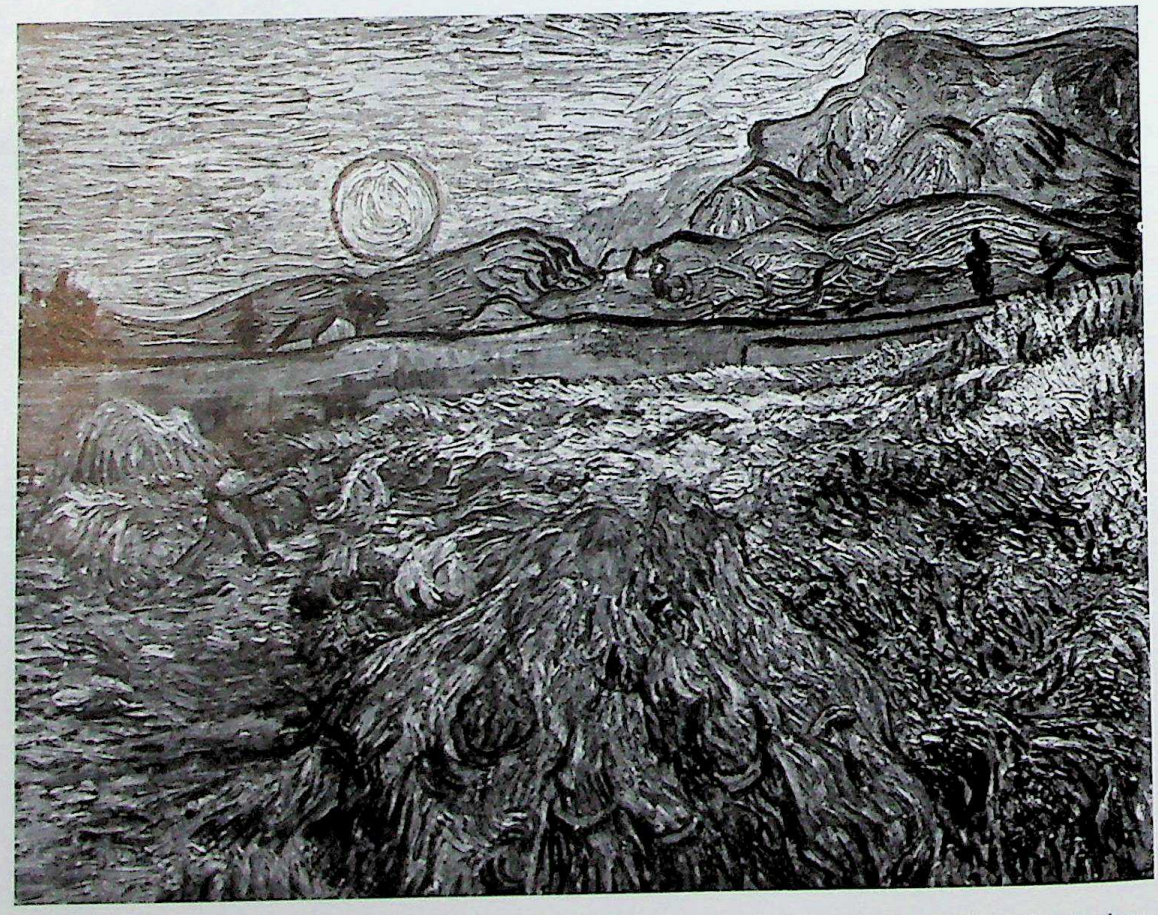
Pl. 286. The Potato Eaters. Canvas, 32¹/₄×44⁷/₈ in. Amsterdam, V. W. van Gogh Coll., on loan to Stedelijk Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



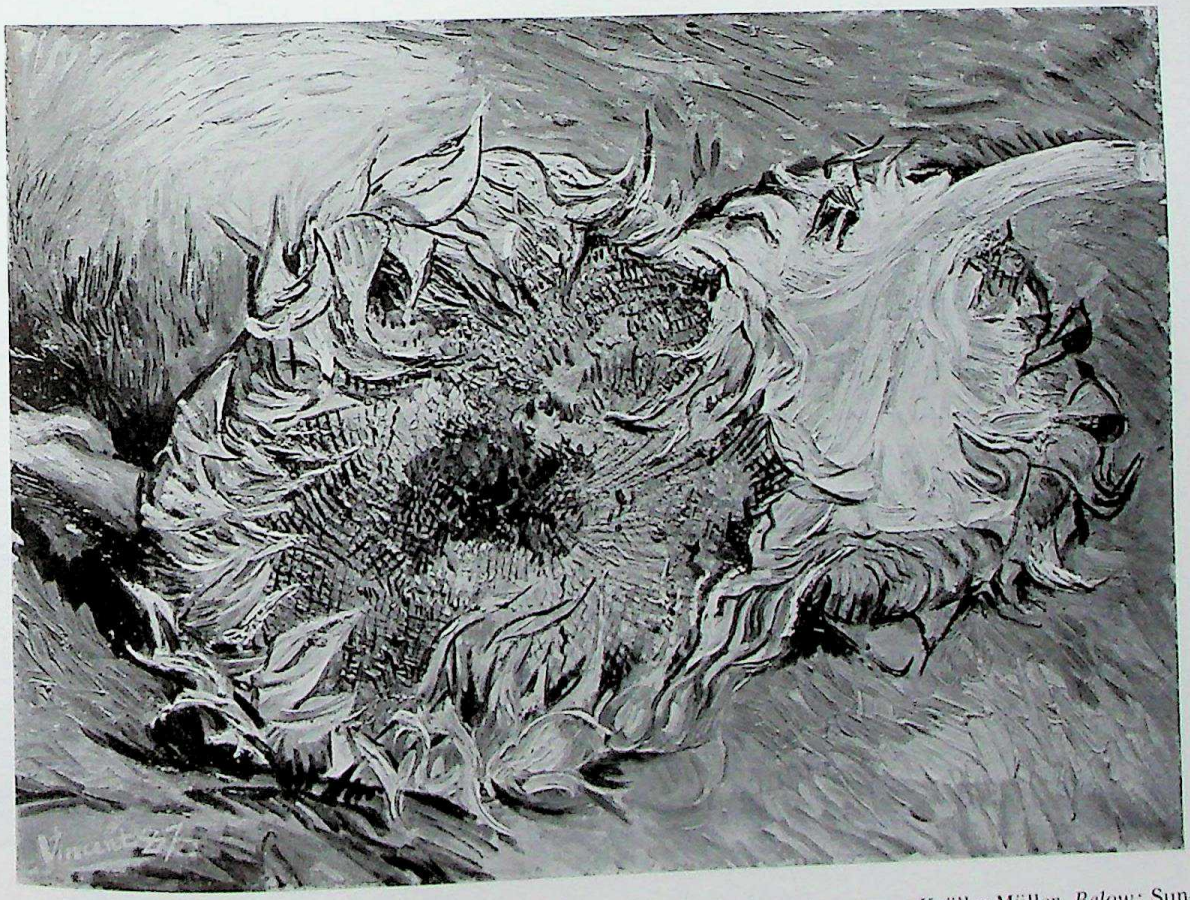
Pl. 287. The Drawbridge. Canvas, 19¼ × 25⅓ in. Cologne, Wallraf-Richartz-Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 288. *Above*: Fishing Boats on the Beach at Saintes-Maries-de-la-Mer. Canvas, $25^{3}/_{8} \times 31^{7}/_{8}$ in. Amsterdam, V. W. van Gogh Coll., on loan to Stedelijk Museum. *Below*: Cornfields at Sunset. Canvas, $28 \times 35^{7}/_{8}$ in. Otterlo, Netherlands, Rijksmuseum Kröller-Müller.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

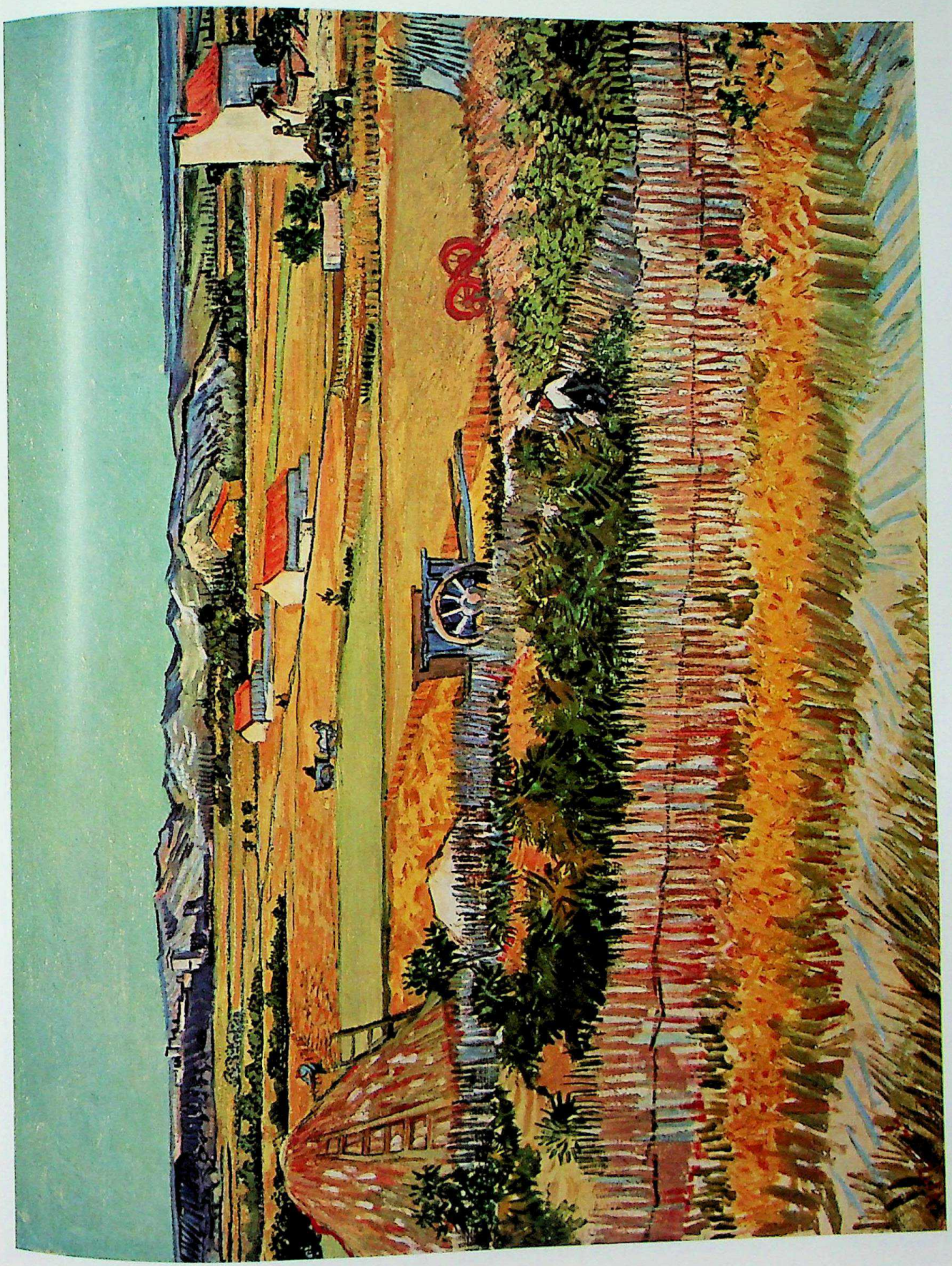


Pl. 289. *Above*: Olive Orchard. Canvas, 28 × 35 5/8 in. Otterlo, Netherlands, Rijksmuseum Kröller-Müller. *Below*: Sunflowers. Canvas, 17 × 24 in. New York, Metropolitan Museum.

Pl. 290. *Left*: View of Saintes-Maries-de-la-Mer. Canvas, $25^{1}/_{4} \times 20^{1}/_{2}$ in. *Right*: A Road with Cypresses. Canvas, $35^{3}/_{4} \times 28$ in. Both, Otterlo, Netherlands, Rijksmuseum Kröller-Müller.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

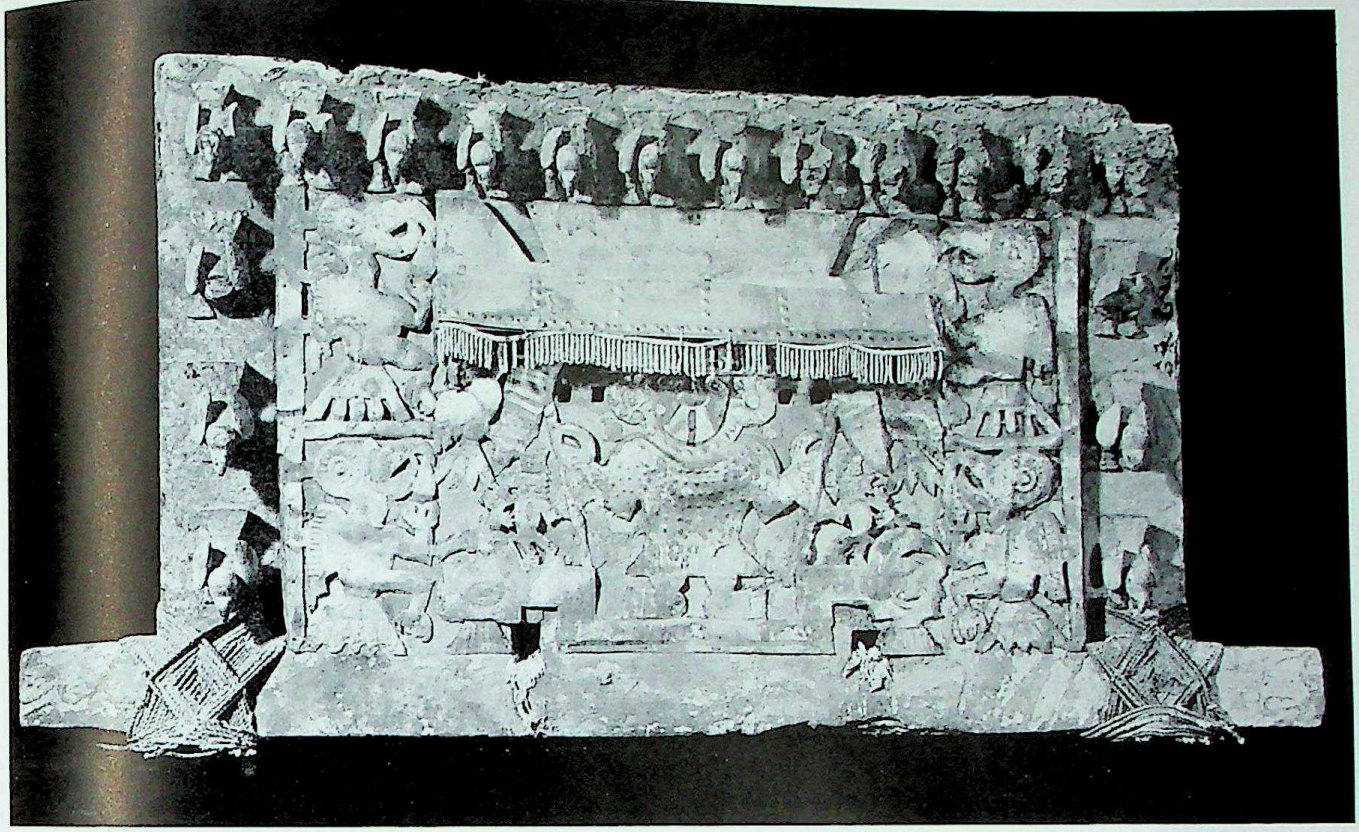


Pl. 291. A View of La Crau. Canvas, 28½×36¼ in. Amsterdam, V. W. van Gogh Coll., on loan to Stedelijk Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

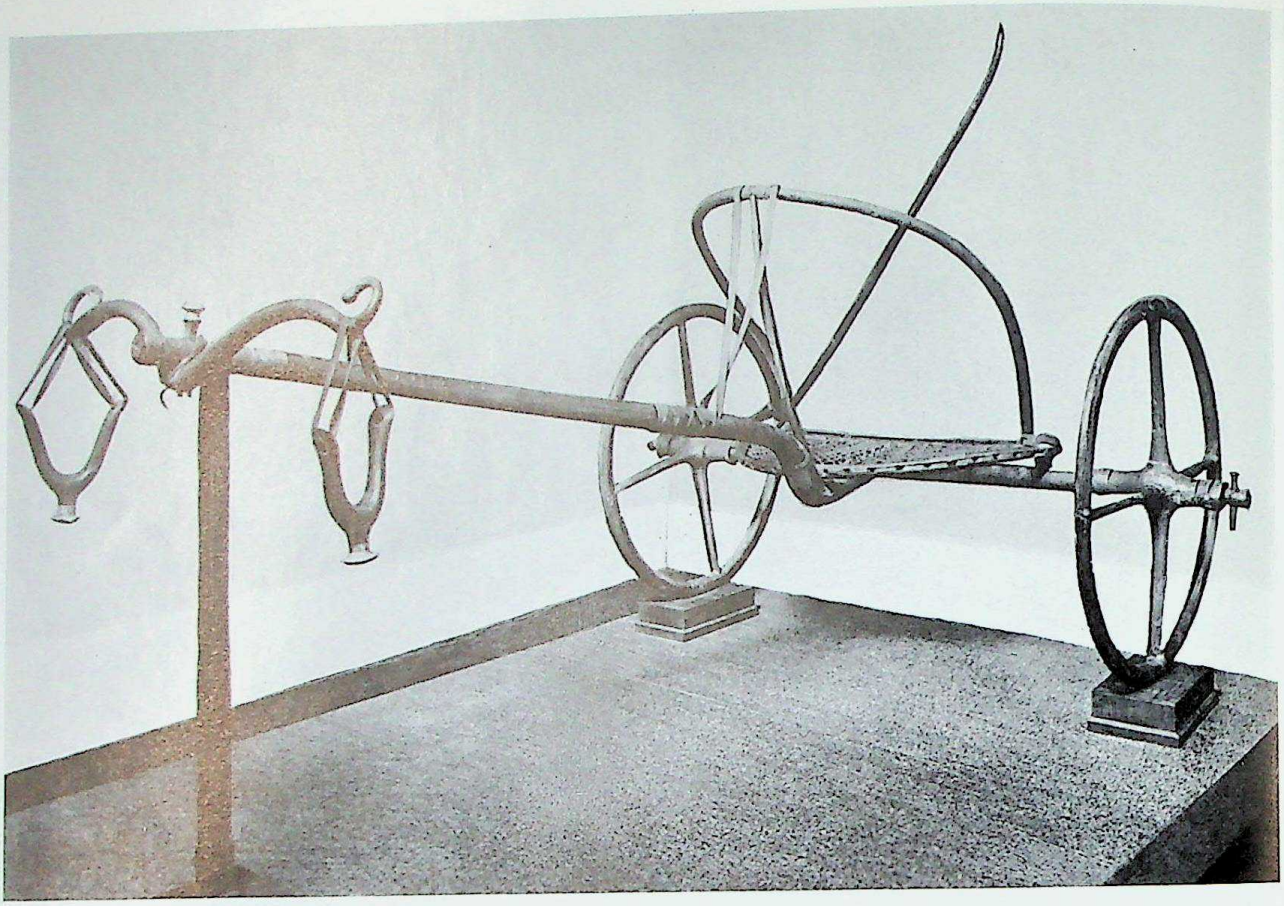
Pl. 292. La Berceuse. Canvas, 35 3/4 × 28 1/8 in. Amsterdam, Stedelijk Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



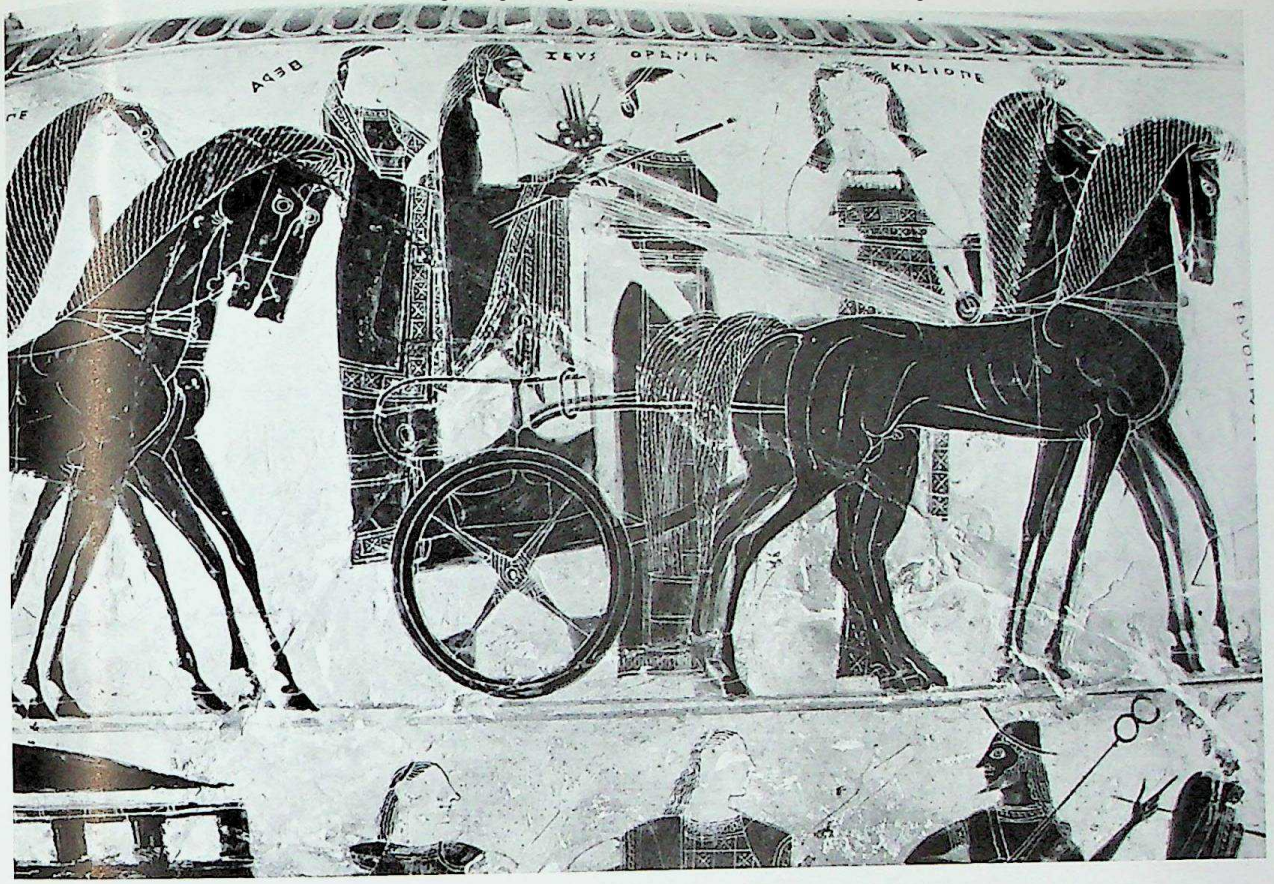
Pl. 293. *Above*: Part of a Chimu litter, Huarmey Valley, Peru, 13th–15th cent. Wood with silver and fringe of pink shell beads, ht., ca. 20 in. Cambridge, Mass., Peabody Museum of Archaeology and Ethnology. *Below*: Santal marriage litter, from Bihar, India.

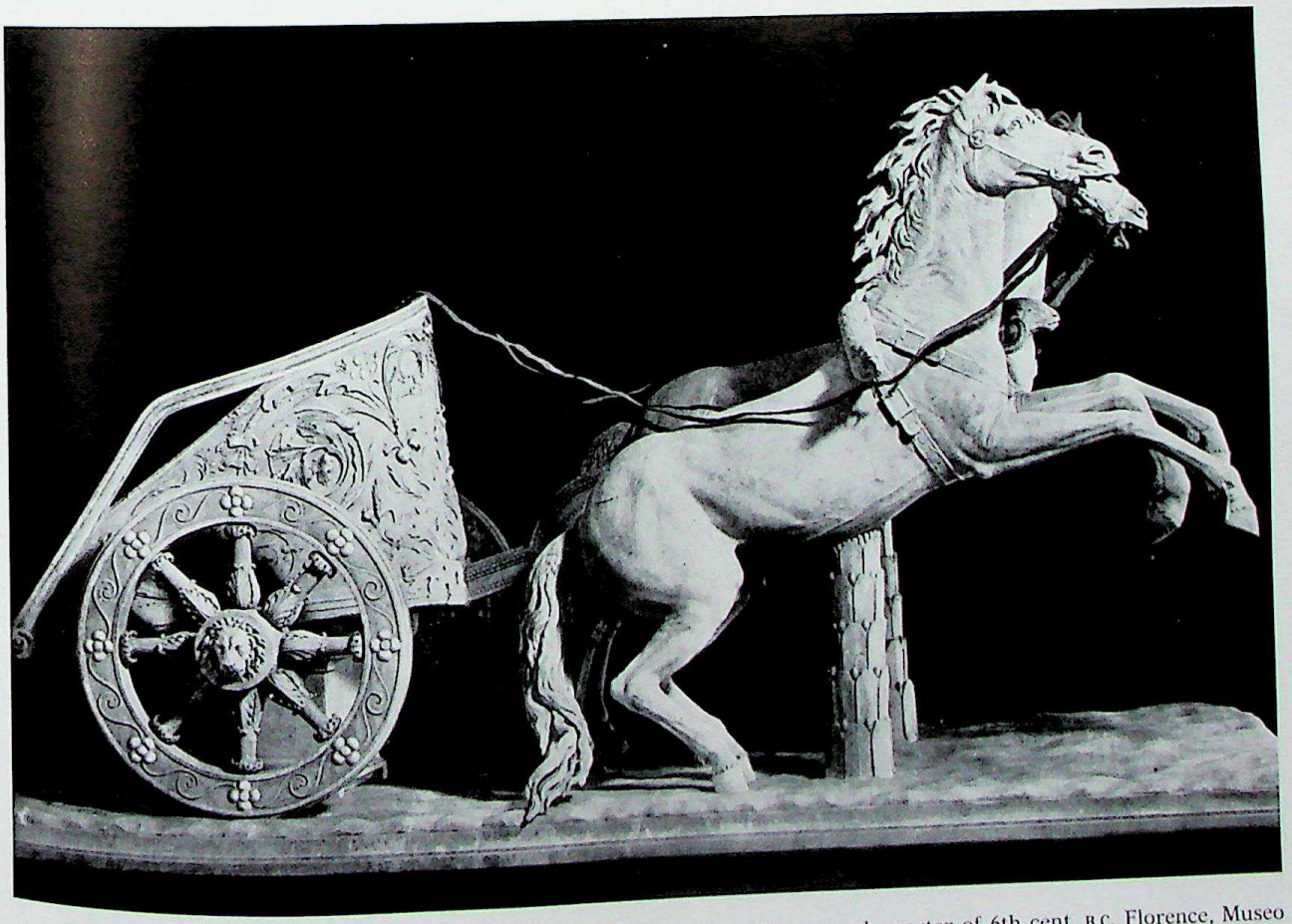
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



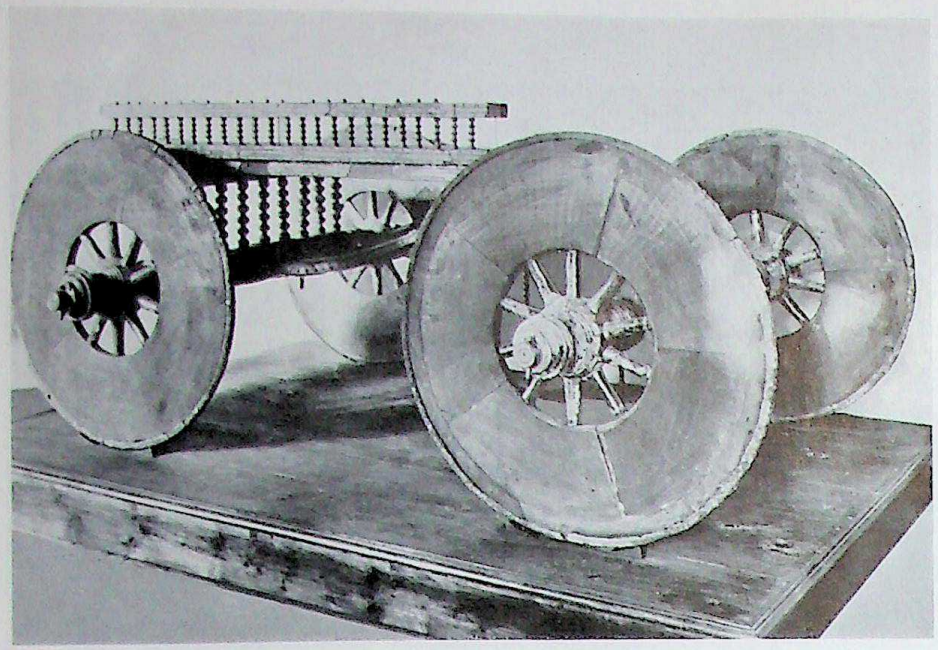
Pl. 294. *Above*: Egyptian chariot, from the necropolis of Thebes, 18th dynasty. Wood. Florence, Museo Archeologico. *Below*: Assyrian war chariot, on a stone relief from the palace of Ashurbanipal at Nineveh, 7th cent. B.C. Paris, Louvre.

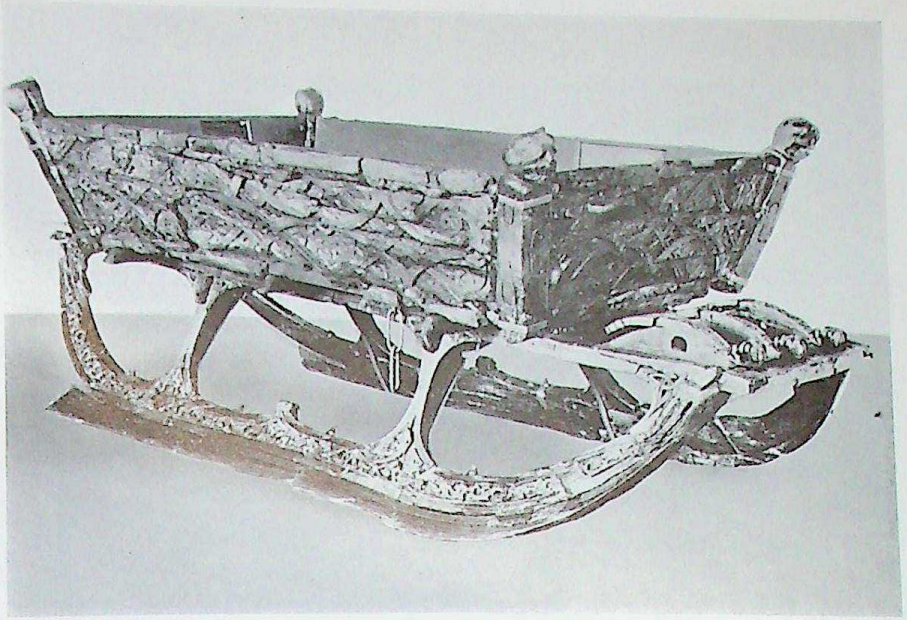
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

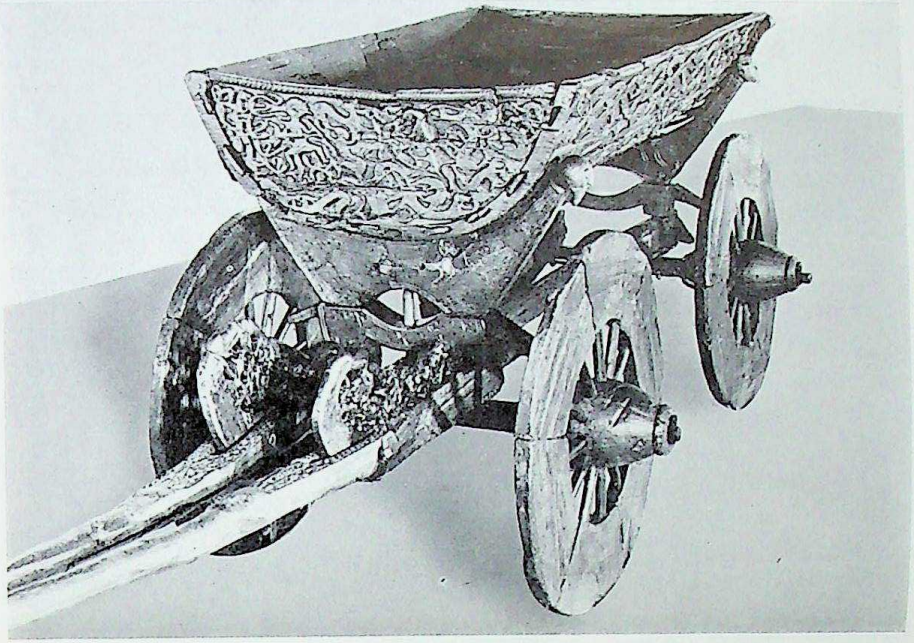




Pl. 295. *Above*: Greek quadriga, depicted on the François Vase (II, PL. 36), second quarter of 6th cent. B.C. Florence, Museo Archeologico. *Below*: Marble sculpture of a Roman biga typical of late 1st cent. B.C., reconstructed with modern and antique elements. Ht. of chariot, 48 3/8 in. Rome, Vatican Museums.



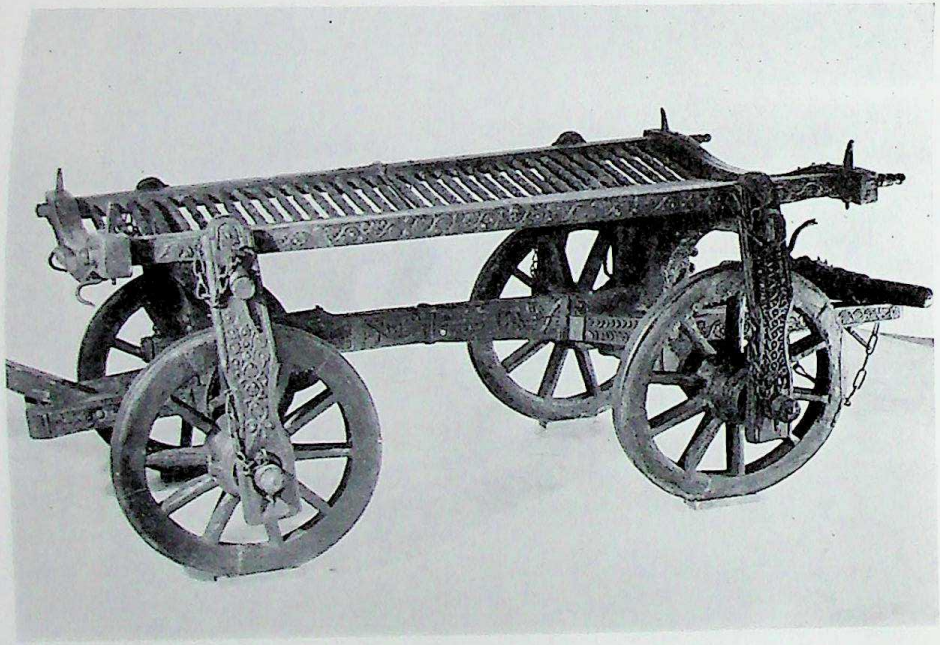


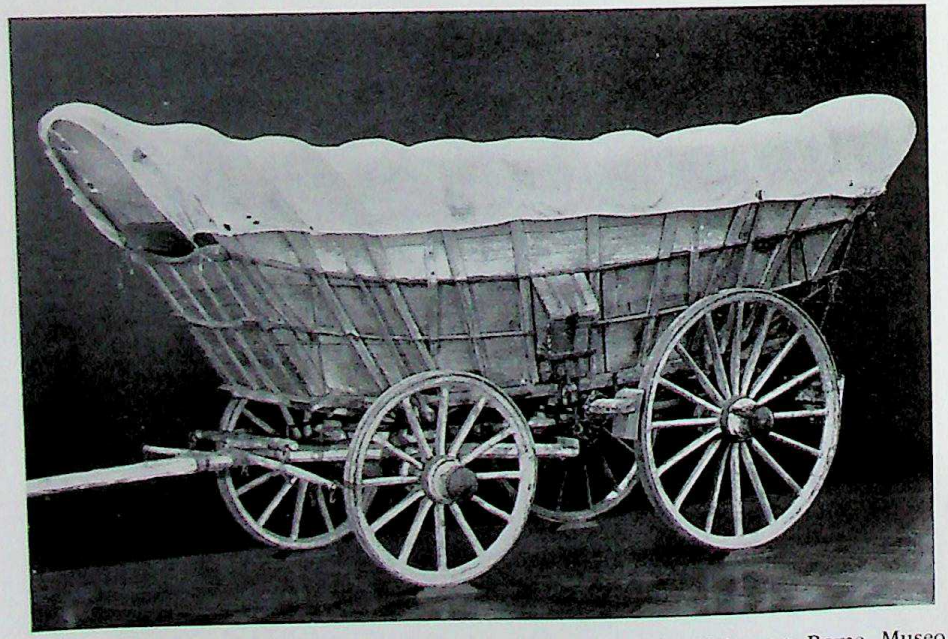


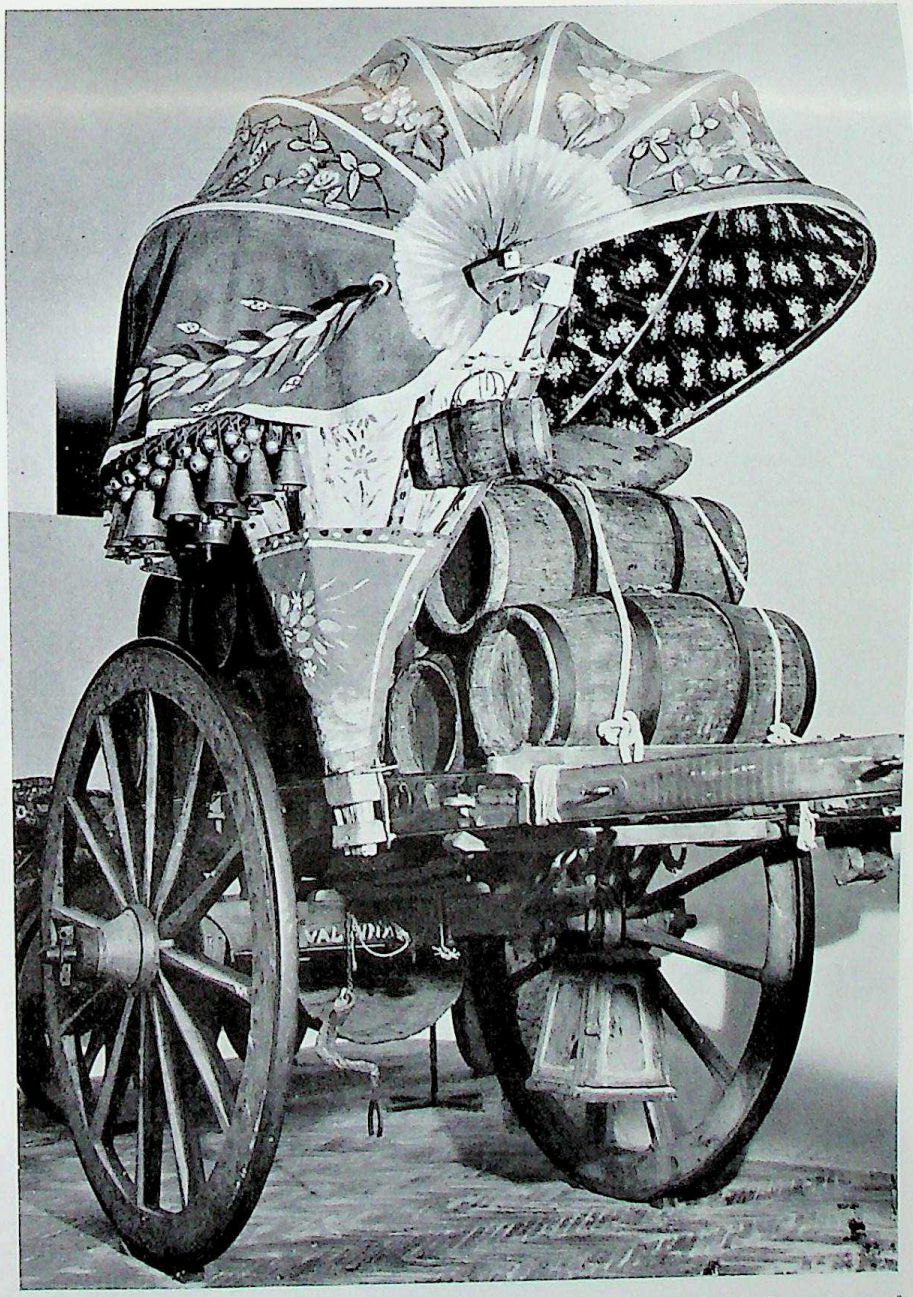
Pl. 296. *Left, above*: Ceremonial wagon, from the necropolis of Ca' Morta, near Como, Italy, 6th–5th cent. B.C. Wood with sheet bronze (partially reconstructed). *Como, Museo Civico. Below*: Roman traveling wagon, on a funerary relief from Zollfeld (anc. Virunum), Austria, ca. 2d cent. Ht. of relief, 23 5/8 in. *Parish church of Maria Saal, near Klagenfurt, Austria.* (Cast.) *Right*: Viking sleigh and cart, from the Oseberg ship burial, Norway, ca. 850. Beechwood. *Oslo, Universitetets Oldsaksamling.*

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

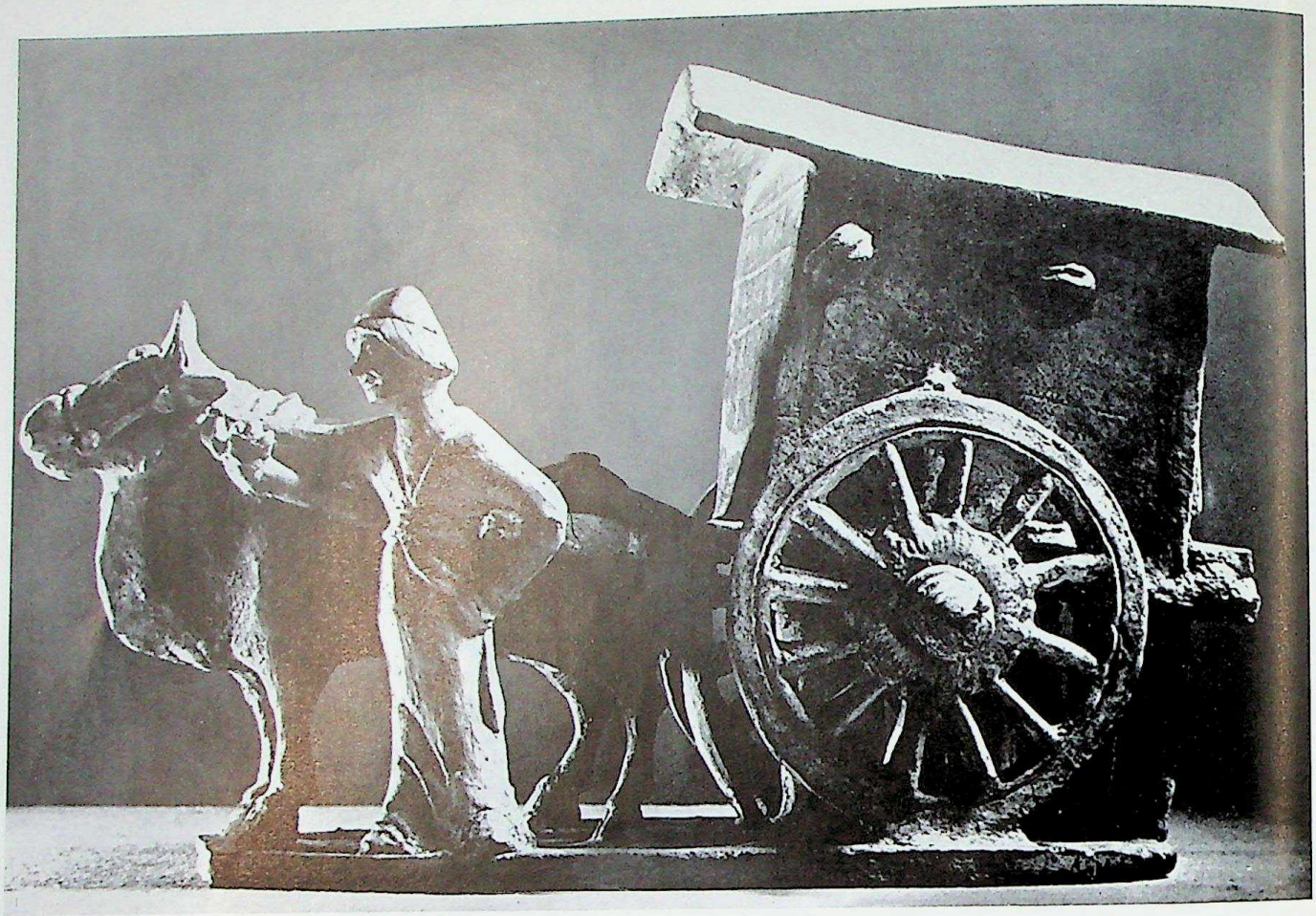


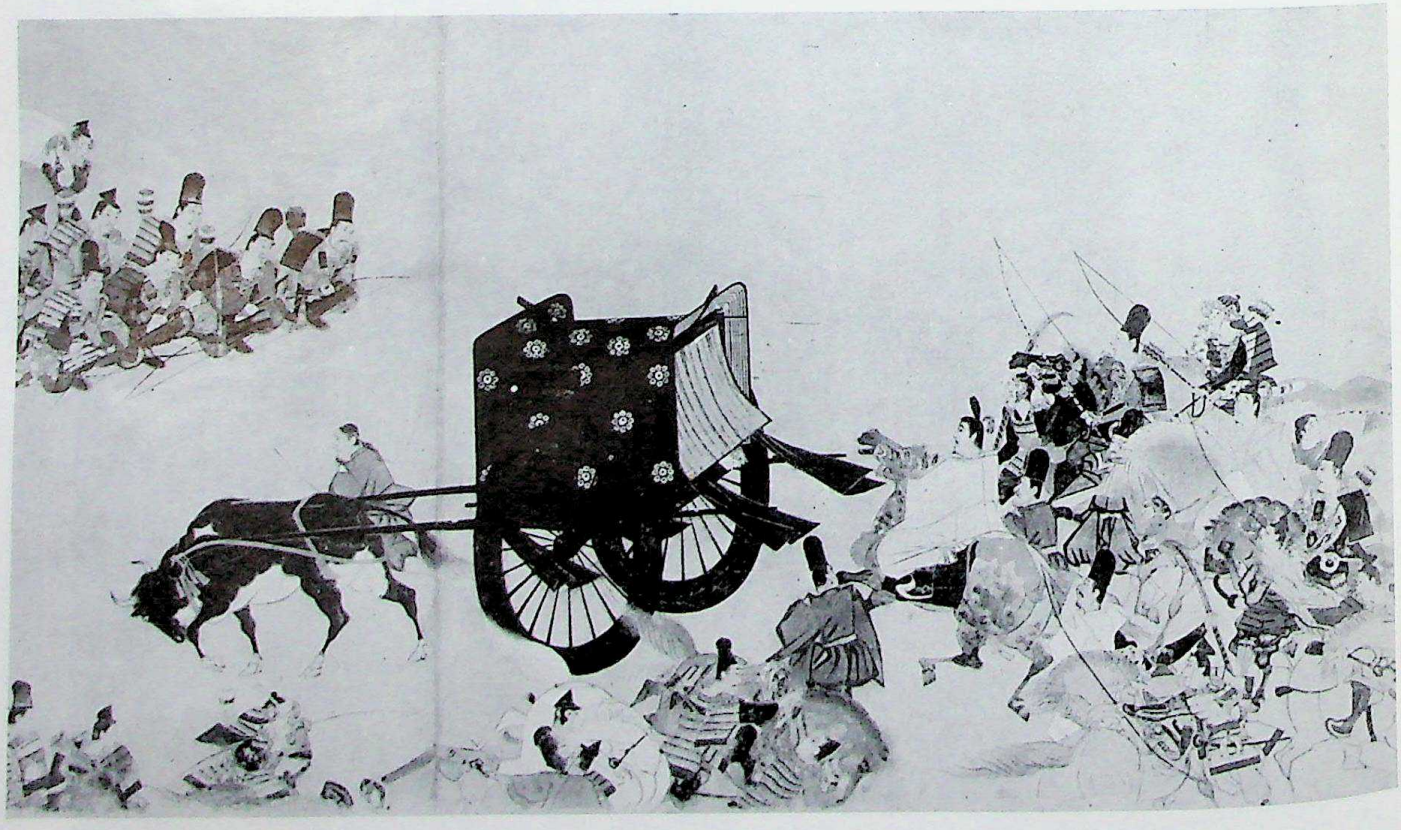




Pl. 297. *Left, above*: Romagnese farm wagon (*plaustro*), Italy, 19th cent. Rome, Museo delle Arti e Tradizioni Popolari. *Below*: Conestoga wagon, Lancaster Valley, Pa., a type of freight vehicle used ca. 1740–1830. Dearborn, Mich., Henry Ford Museum. *Right*: Wine cart, from Latium, Italy, 19th cent. Rome, Museo delle Arti e Tradizioni Popolari.

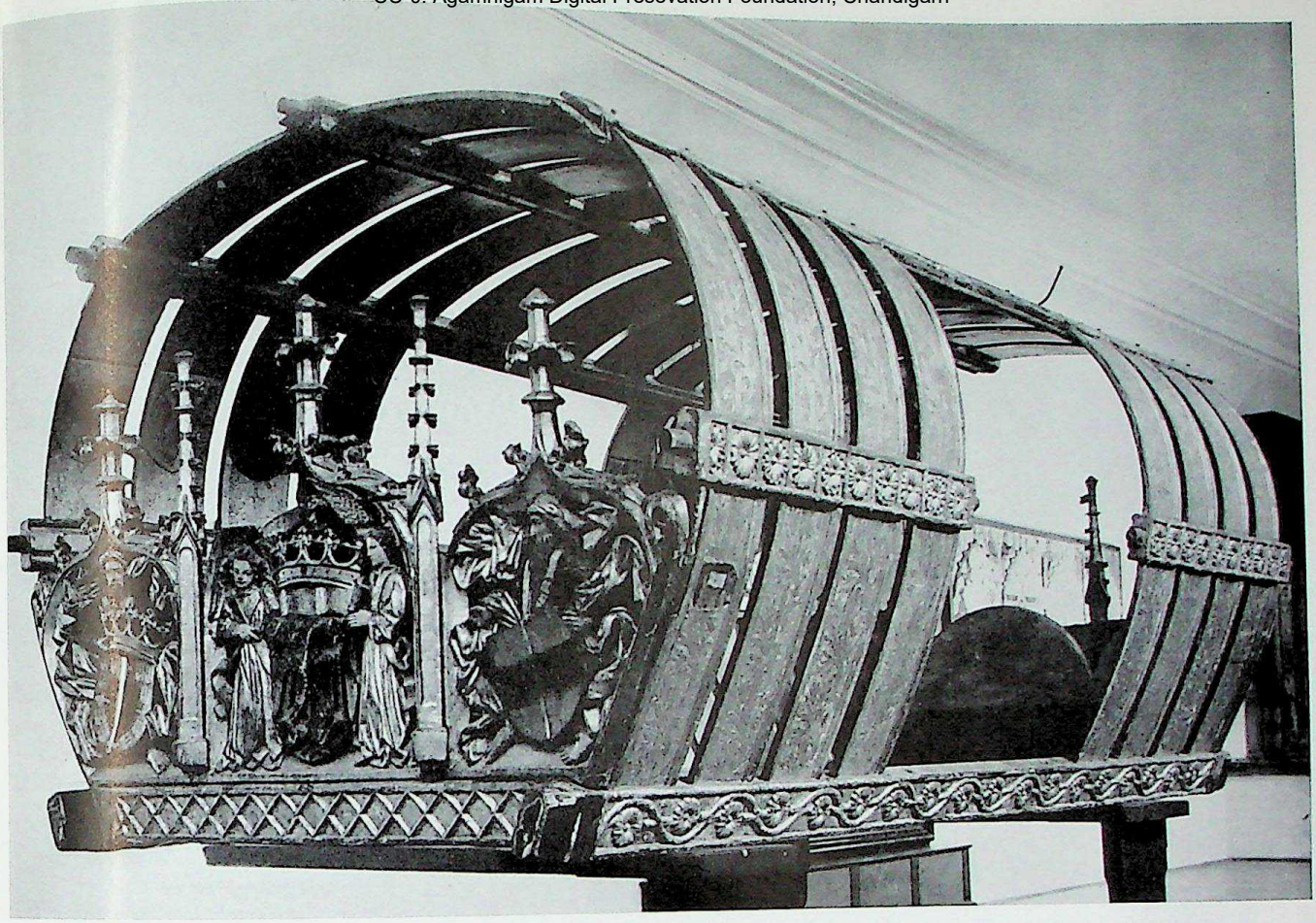
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

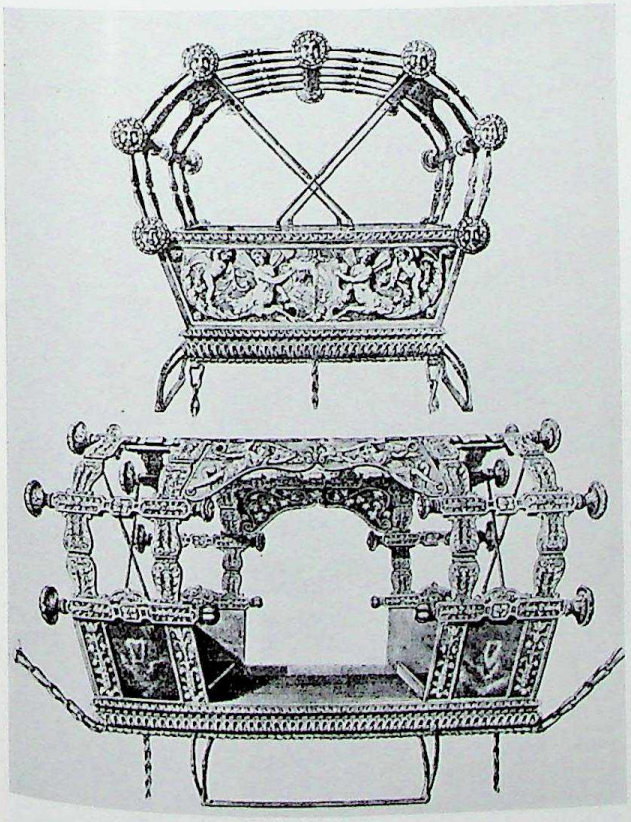


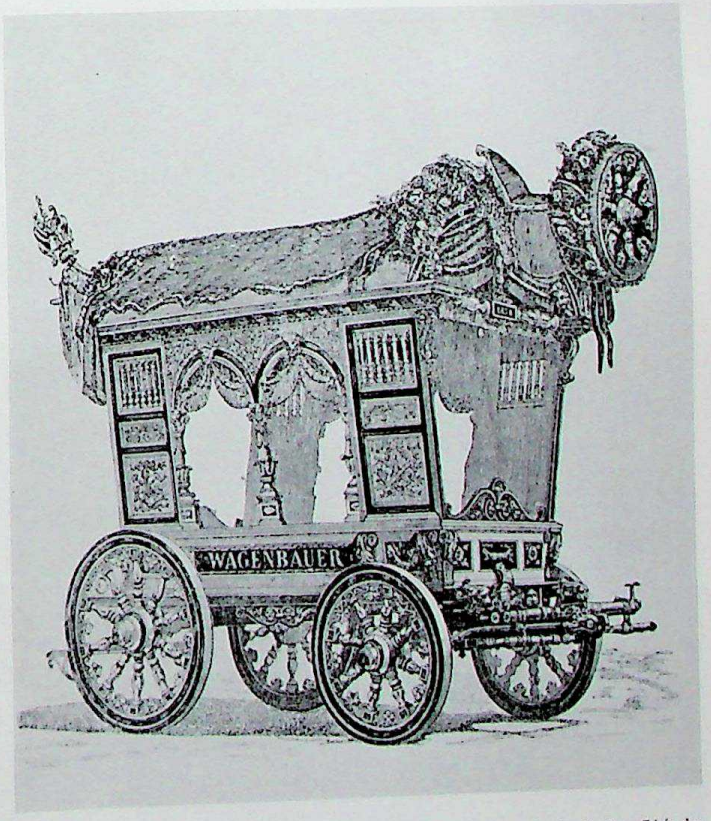


Pl. 298. Ox-carts. *Above*: Tomb model, from Honan, China, ca. 6th cent. Painted clay, ht., 10 5/8 in. Prague, Kuba Coll. *Below*: Detail of a *Heiji Monogatari* scroll, Japan, Kamakura period. Color on paper. Tokyo, National Museum.

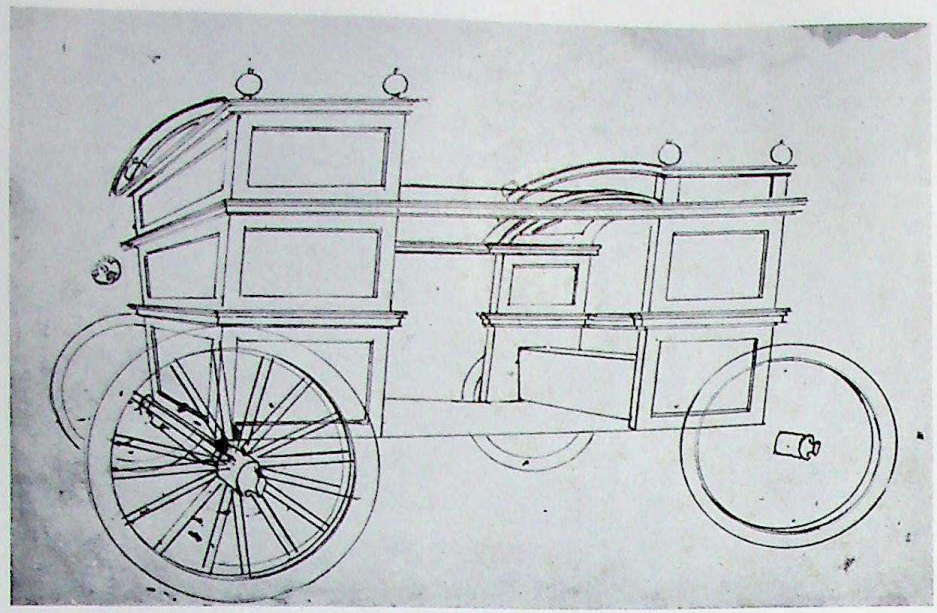
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

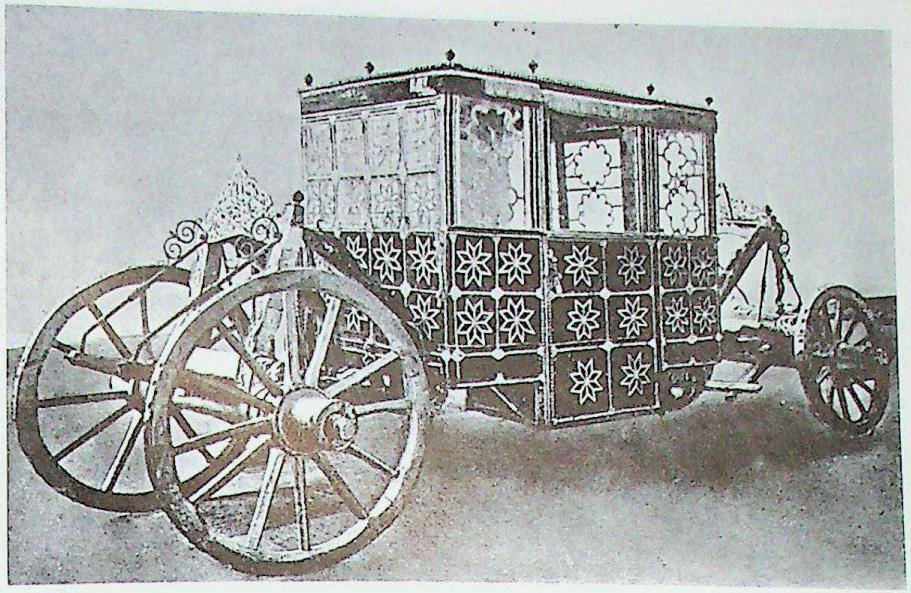


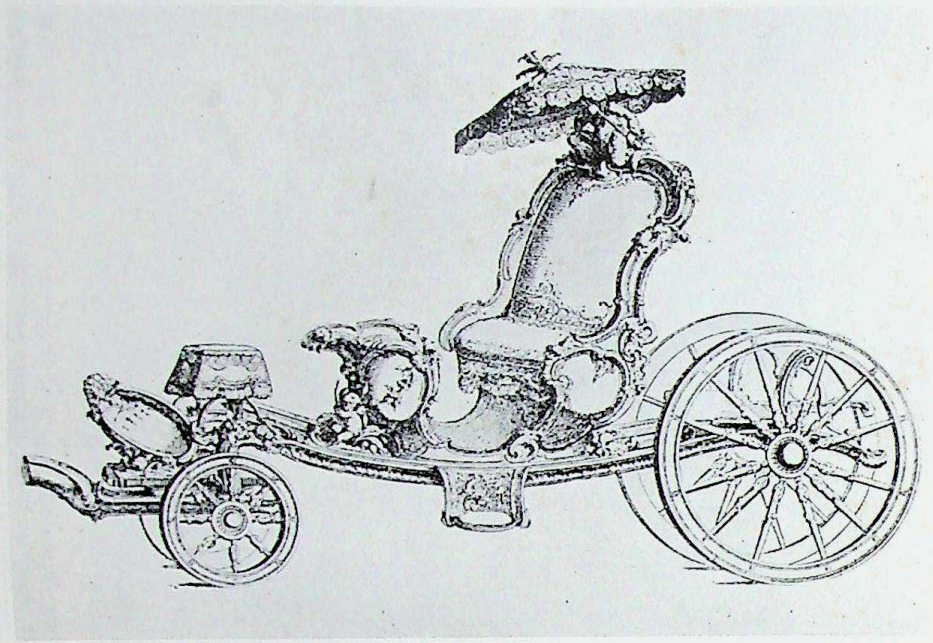


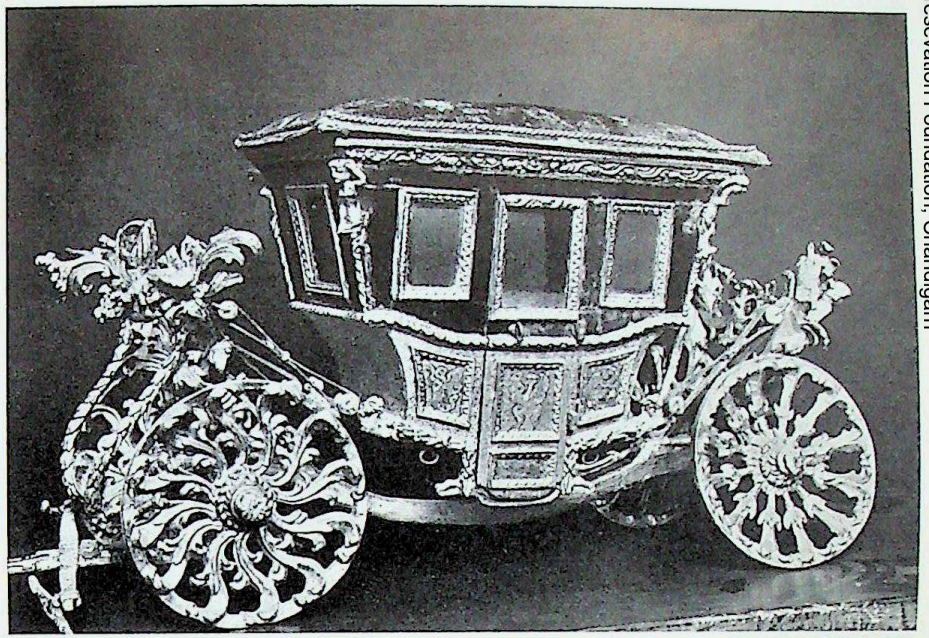


Pl. 299. *Above*: Traveling wagon of Emperor Friedrich III, Steiermark, Austria, ca. 1475. Gilded and painted wood, l., 8 ft., 5½ in. Graz, Austria, Landesmuseum Joanneum. *Below, left*: Traveling wagon, end and side view, from Verona, Italy, third quarter of 16th cent., after a drawing by G. Franco, 1864. *Right*: Coach (19th cent.), reproduction of a 16th-century model, used for the silver-wedding festivities of Emperor Franz Josef I and Elizabeth in Vienna, illustration in *Guide du Carrossier*, 1879.





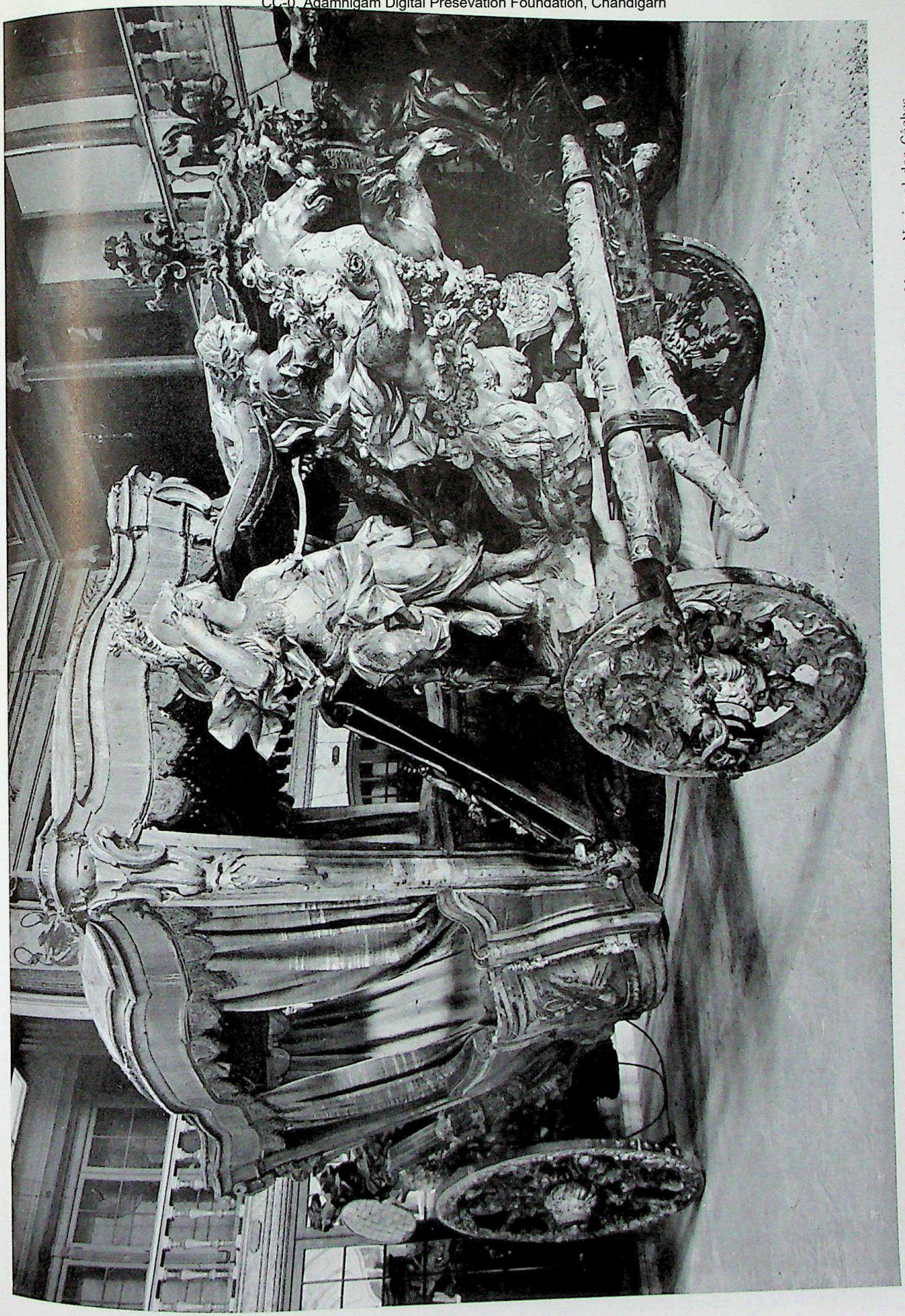




Pl. 300. *Above, left*: Coach, pen drawing from the sketchbook of Bastiano ("Aristotile") da Sangallo (1481–1551). Florence, Uffizi, Gabinetto dei Disegni e Stampe. *Right*: Closed coach of Tsar Alexis I Mikhailovich, Russia, ca. 1658. Velvet-covered frame in red with brass and gold trimming and lead-set glass windows. Moscow, the Kremlin, Hall of Arms. *Below, left*: Calash, design by J. M. Hoppenhaupt, Berlin, 1740–50, pattern engraved by J. A. Nahl (?). *Right*: Pontifical closed coach, Rome (?), 18th cent., model in stuccoed and gilded wood. Ht. of model, 12⅝ in. Rome, Vatican.

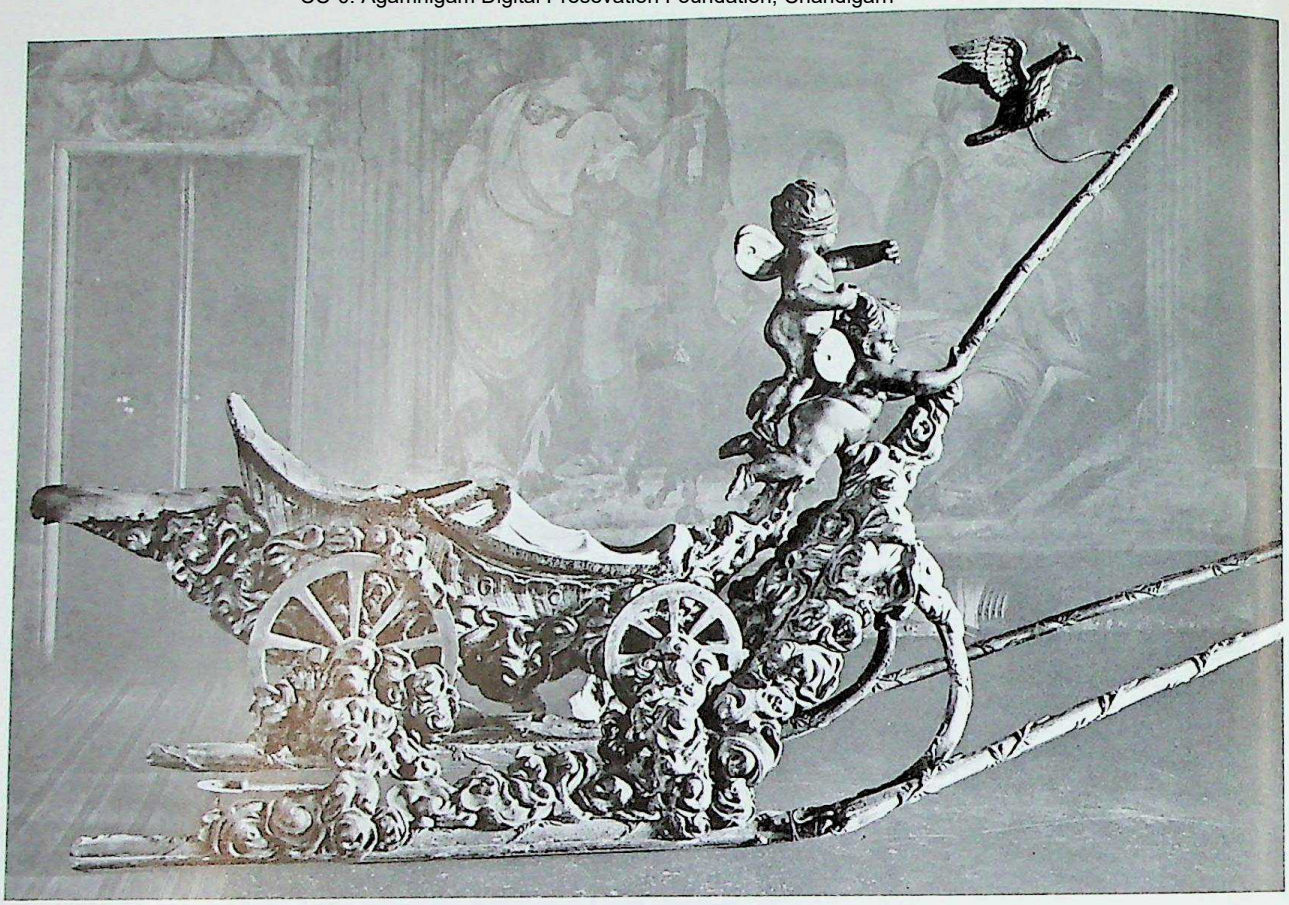
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

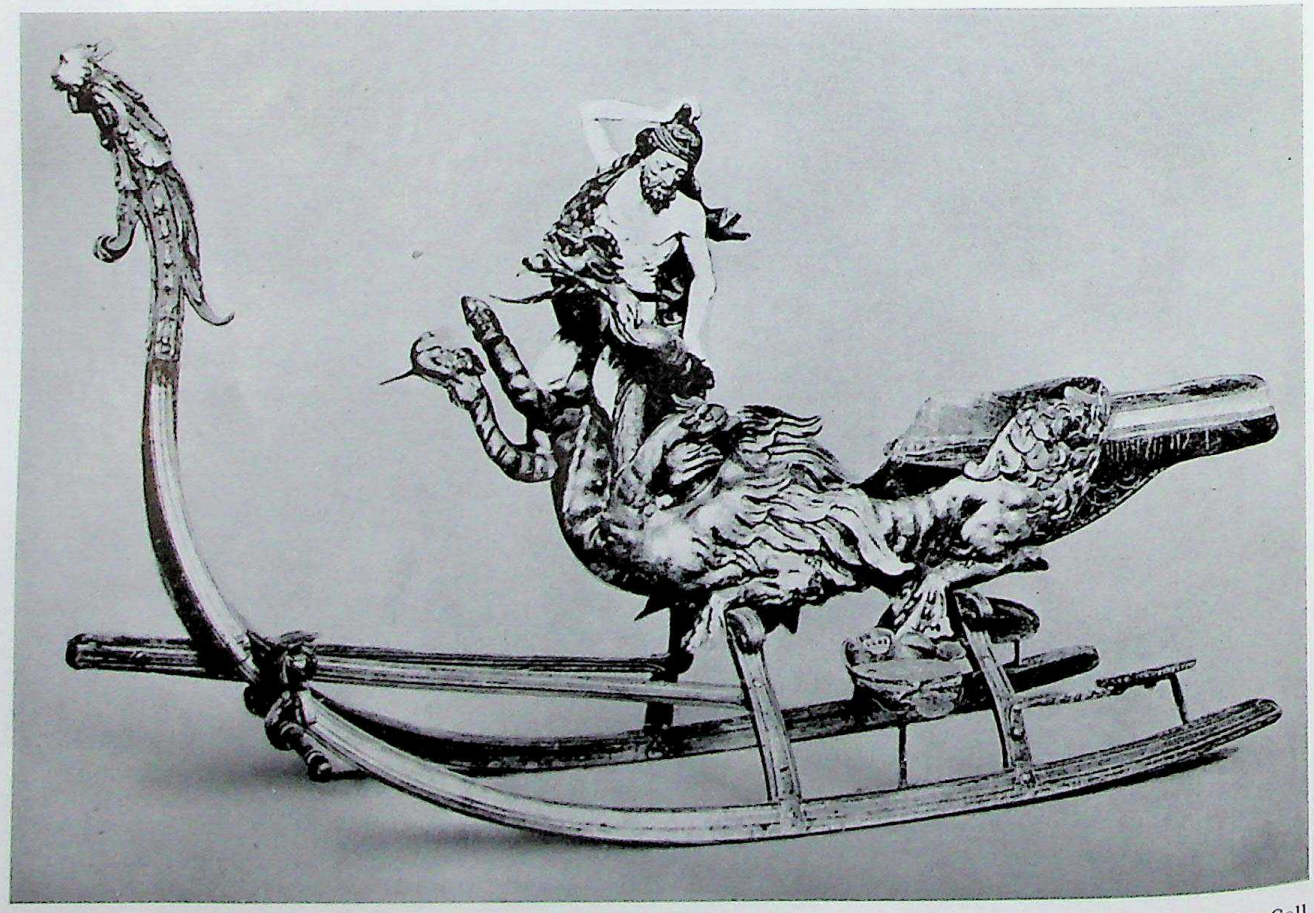
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 301. Open coach with allegorical figures, made for the Portuguese ambassador to Pope Clement XI, Rome, ca. 1716. Ht., 7½ ft. Lisbon, Museu Nacional dos Côches.

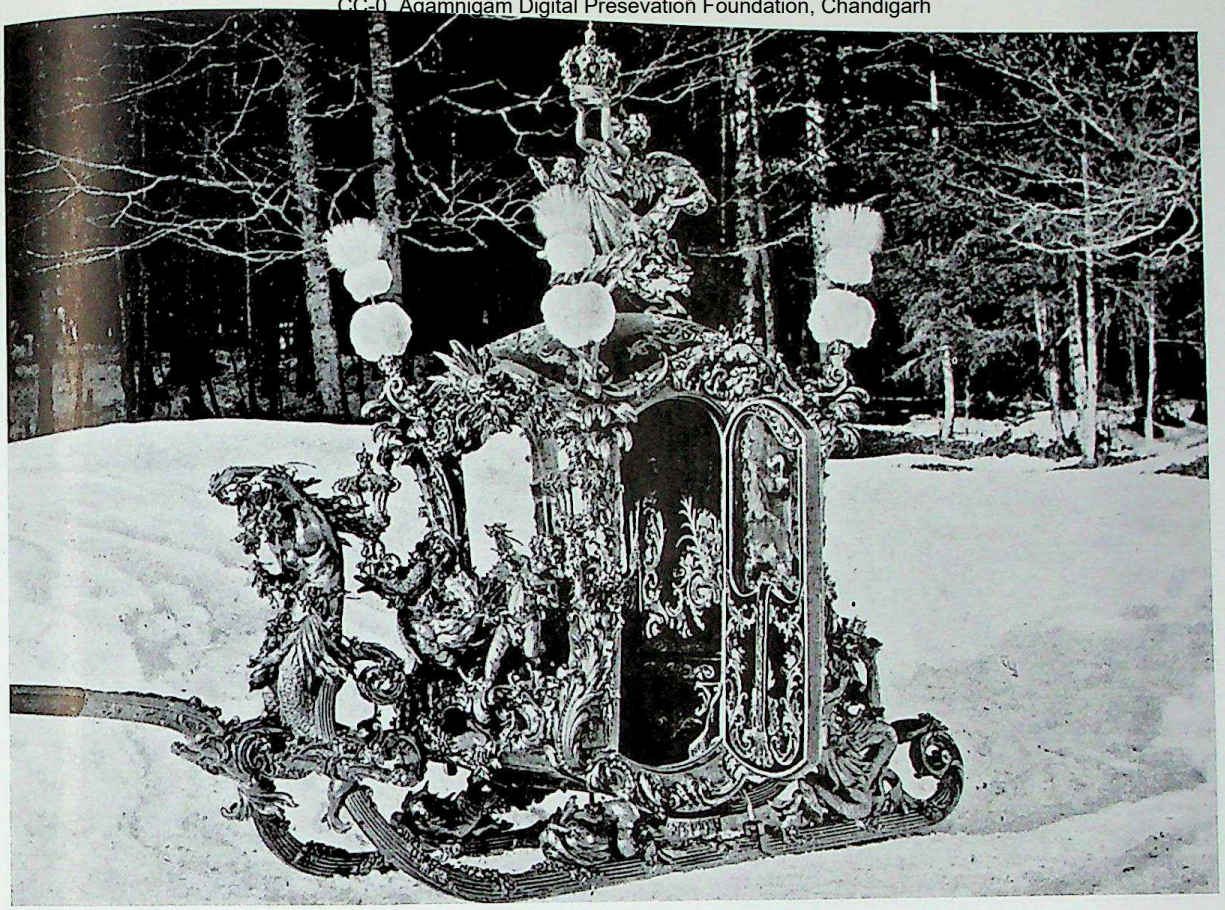
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

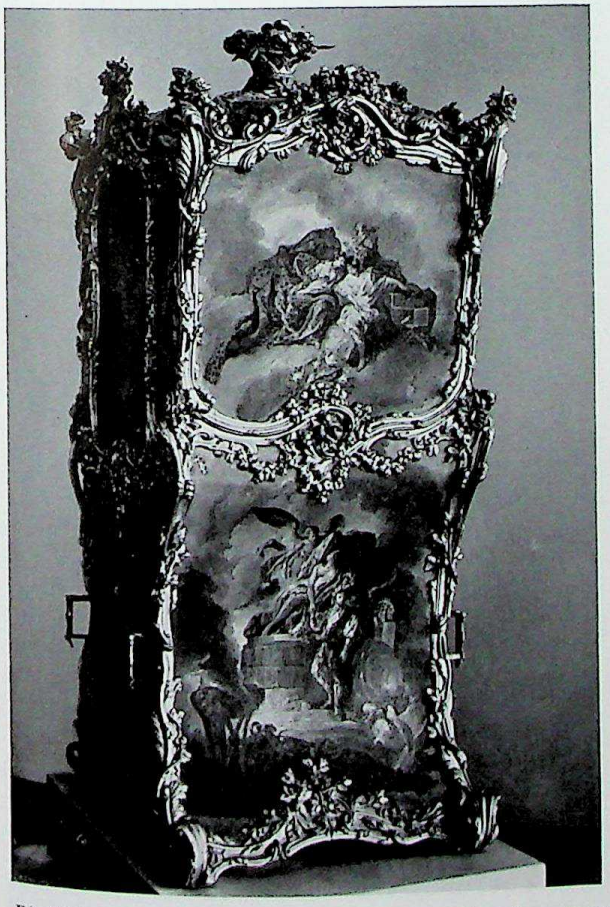


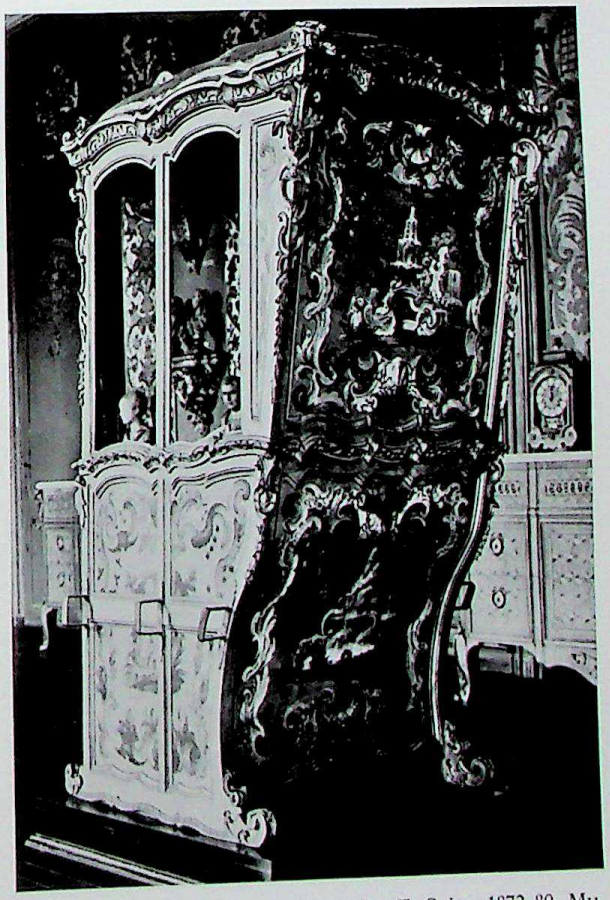


Pl. 302. Racing sleighs. *Above*: A. Brustolon (?), "Il Carro di Venere," Venice, mid-18th cent. Formerly, Thiene, Italy, Coll. Colleoni. *Below*: J. B. Straub, the Hercules sleigh, Munich, ca. 1730. Wood, painted, gilded, and lacquered. Munich, Schloss Nymphenburg, Marstallmuseum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

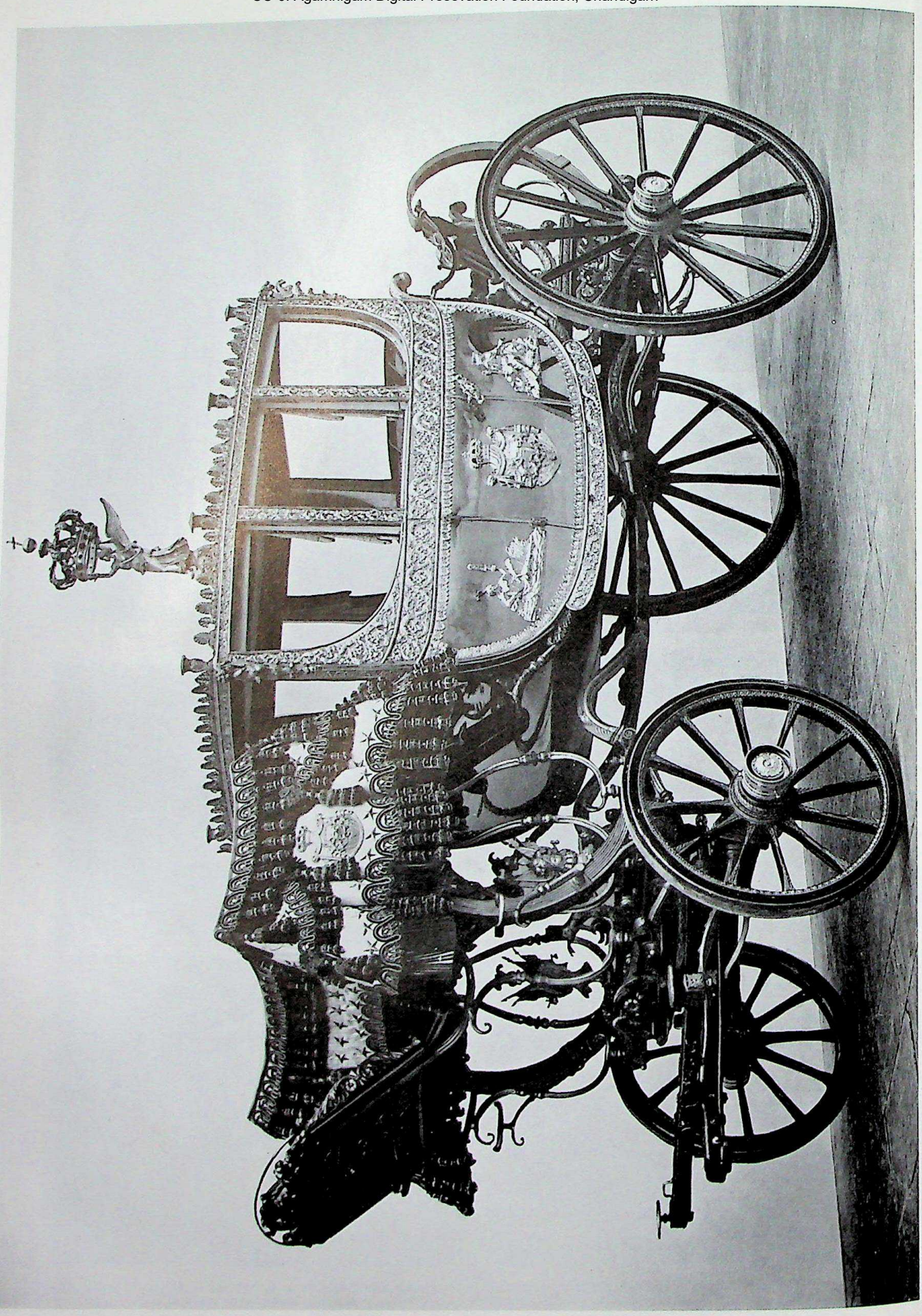






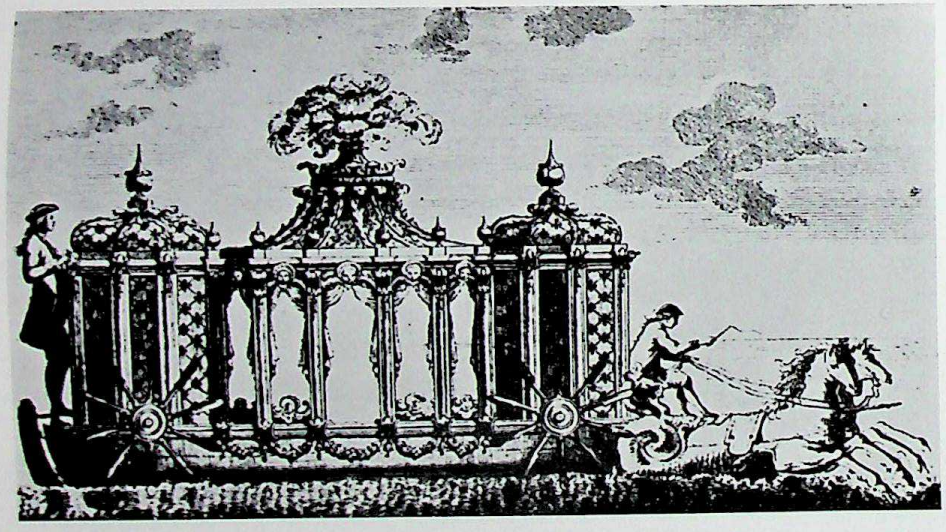
Pl. 303. *Above*: Sleigh of Ludwig III of Bavaria, convertible to use on wheels, after a design by F. Seitz, 1872–80. Munich, Deutsches Museum. *Below, left*: Sedan chair, Spain, second half of 18th cent. Gilded wood, with oil paintings. Madrid, Museo Arqueológico Nacional. *Right*: Sedan chair, Naples, 18th cent. Turin, Museo Civico.

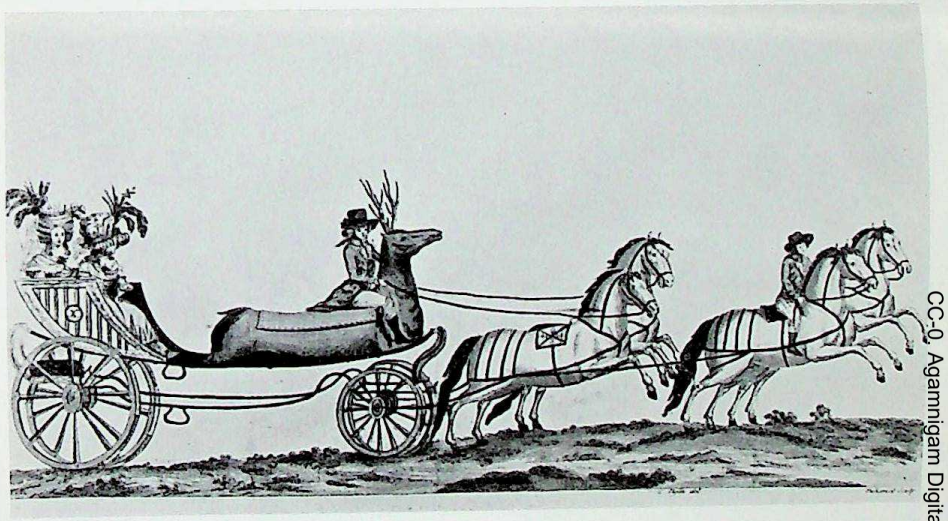
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

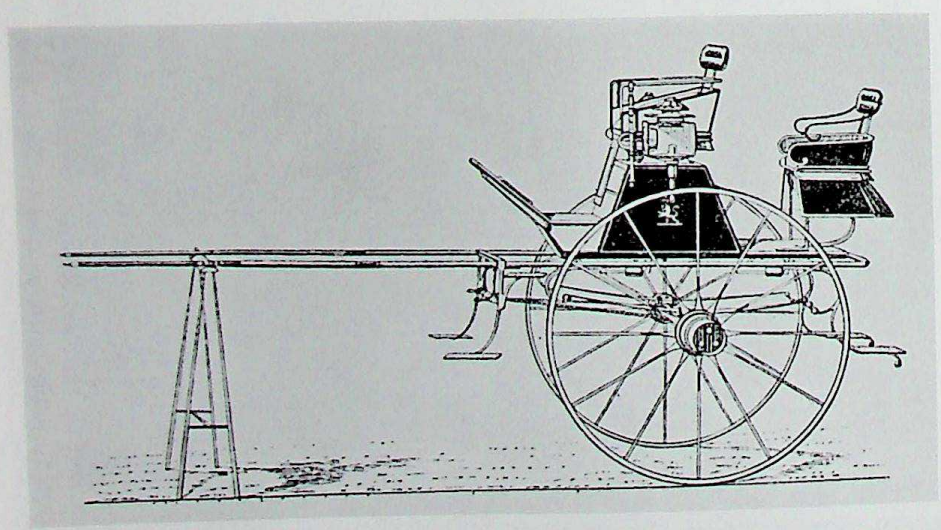


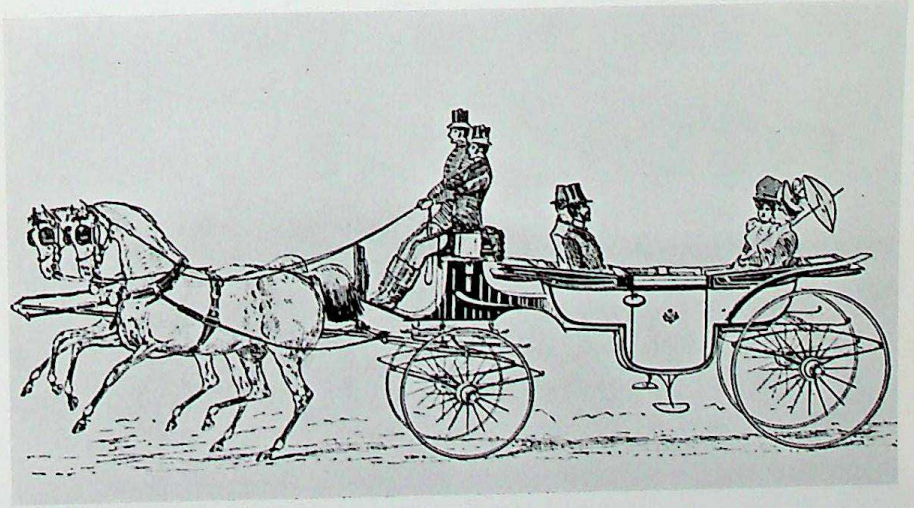
Pl. 304. State coach of Ferdinand II, King of the Two Sicilies, Italy, 1839. Dark-blue lacquer with gilded bronze and silver. *Florence, Pitti, Museo delle Carrozze.*

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



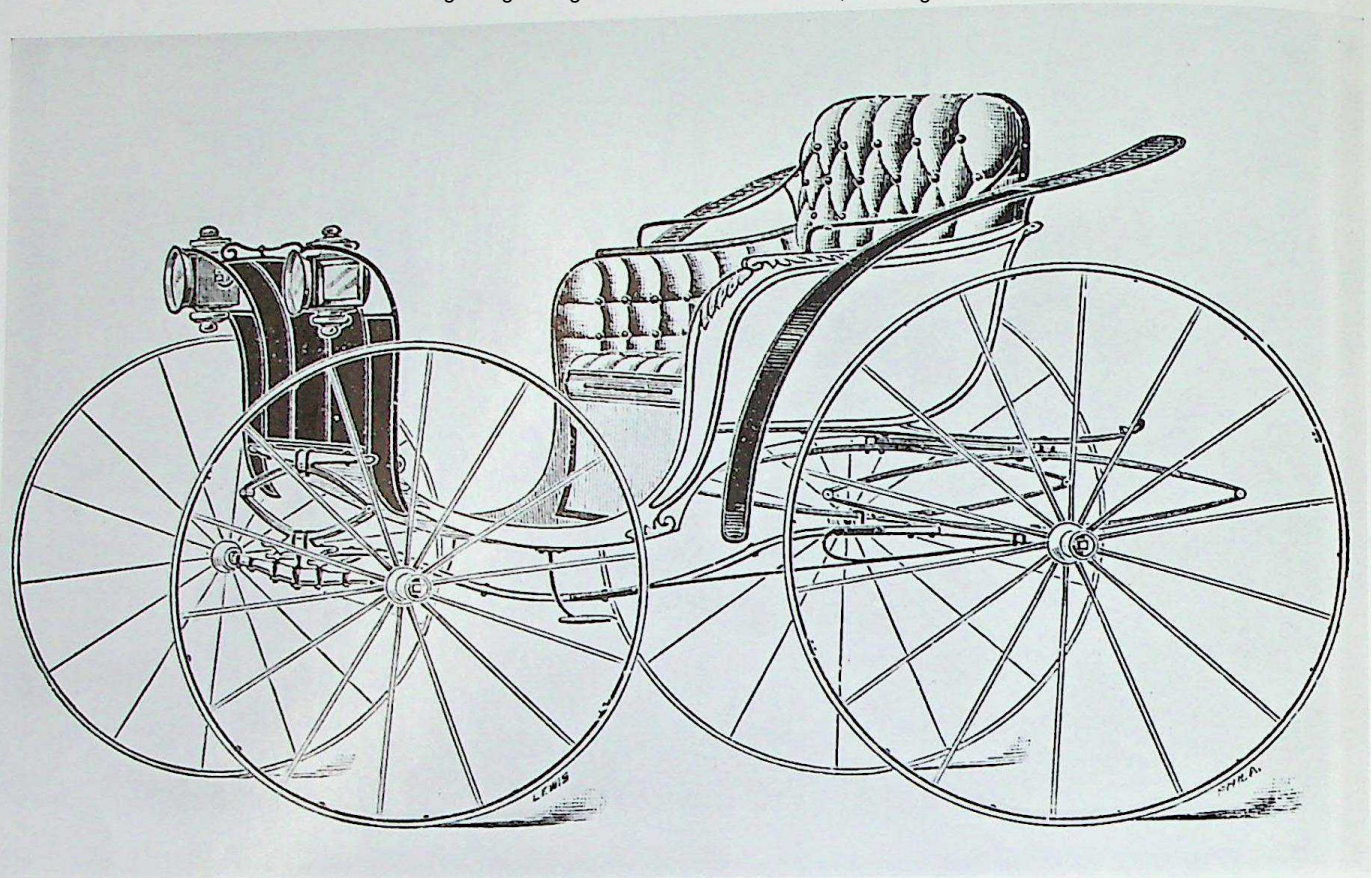


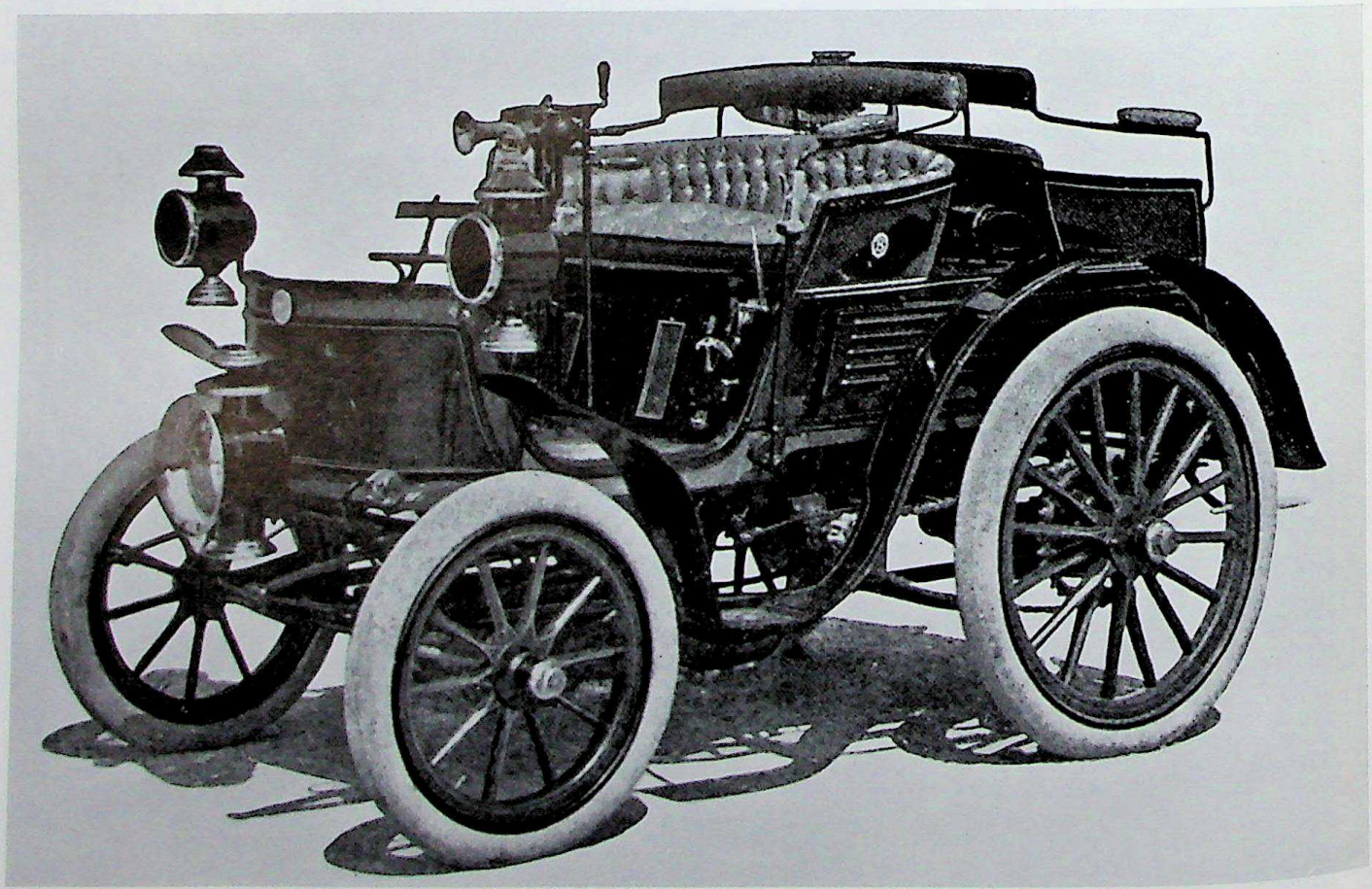




Pl. 305. *Above, left*: Water coach invented by Don Raimondo di Sangro, Naples, ca. 1770. Naples, S. Maria della Pietà dei Sangro (Cappella Sansevero). *Right*: Hunting carriage, France, ca. 1780. *Below, left*: Tandem, France, 1895. *Right*: Landau, Italy (?), 1894. All, from contemporaneous engravings.

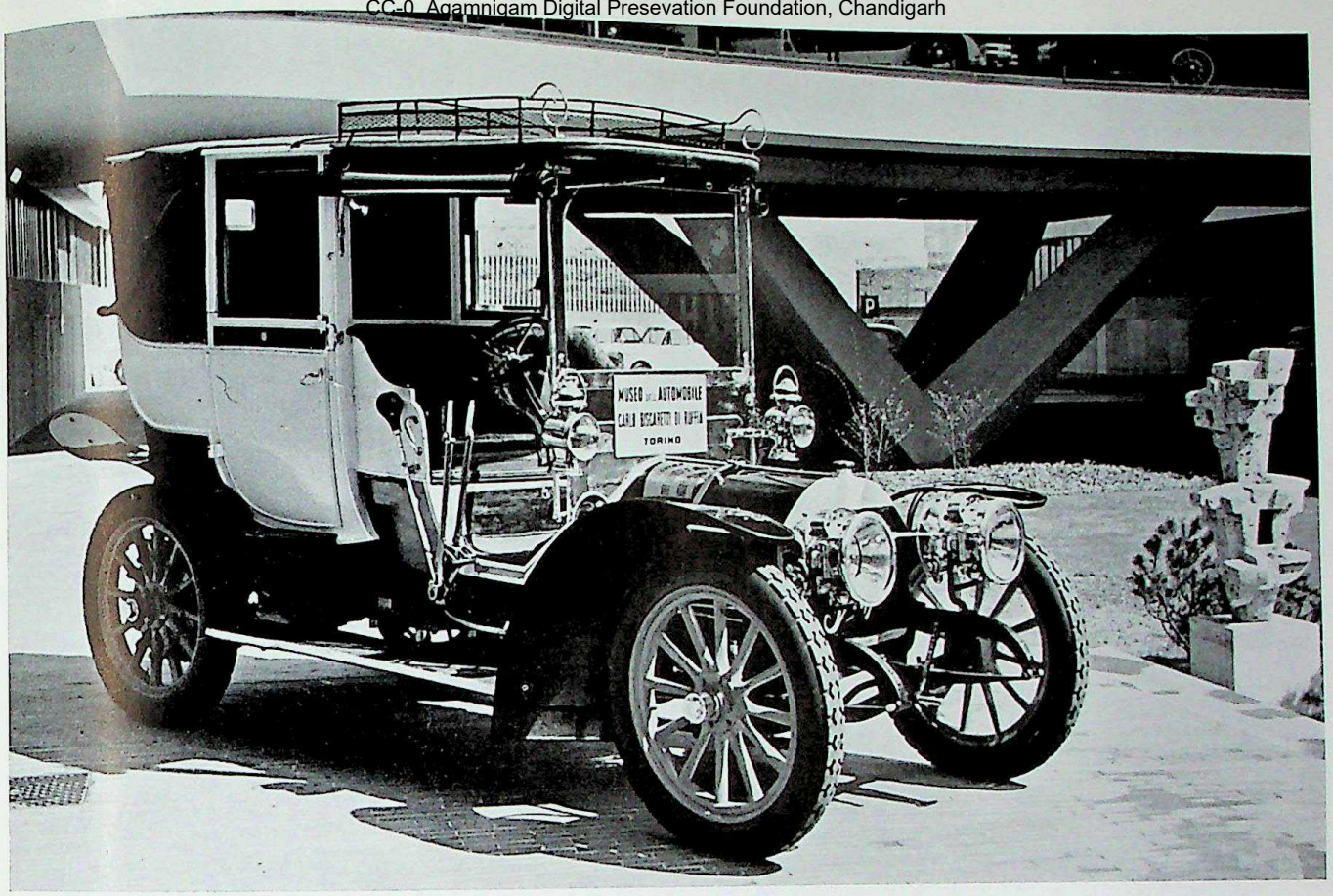
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

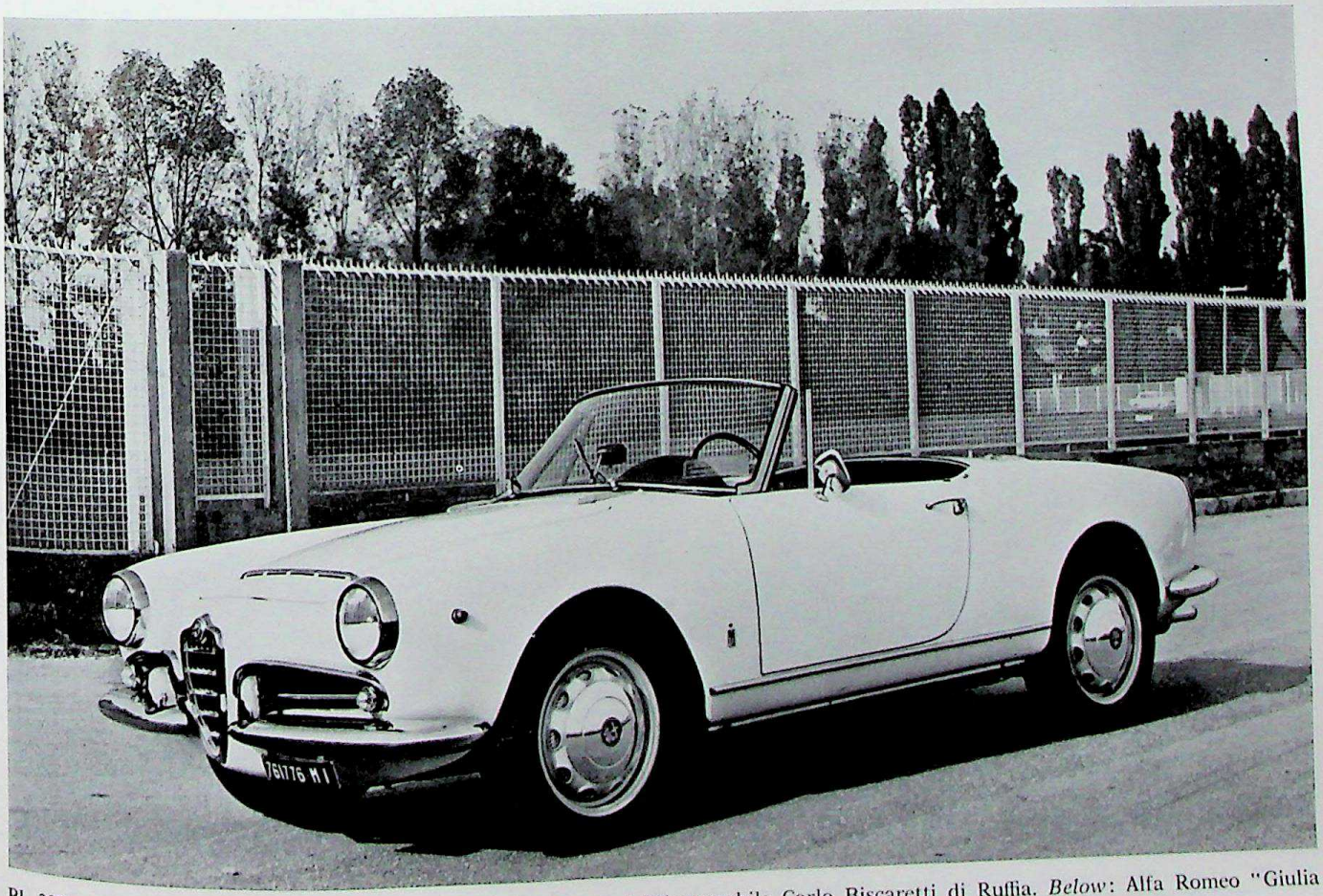




Pl. 306. *Above*: "Duchess" carriage, manufactured by King Spring Co., Buffalo, N.Y., late 19th cent. *Below*: Benz two-cylinder motorcar, "Dos-à-Dos," Germany, 1898.

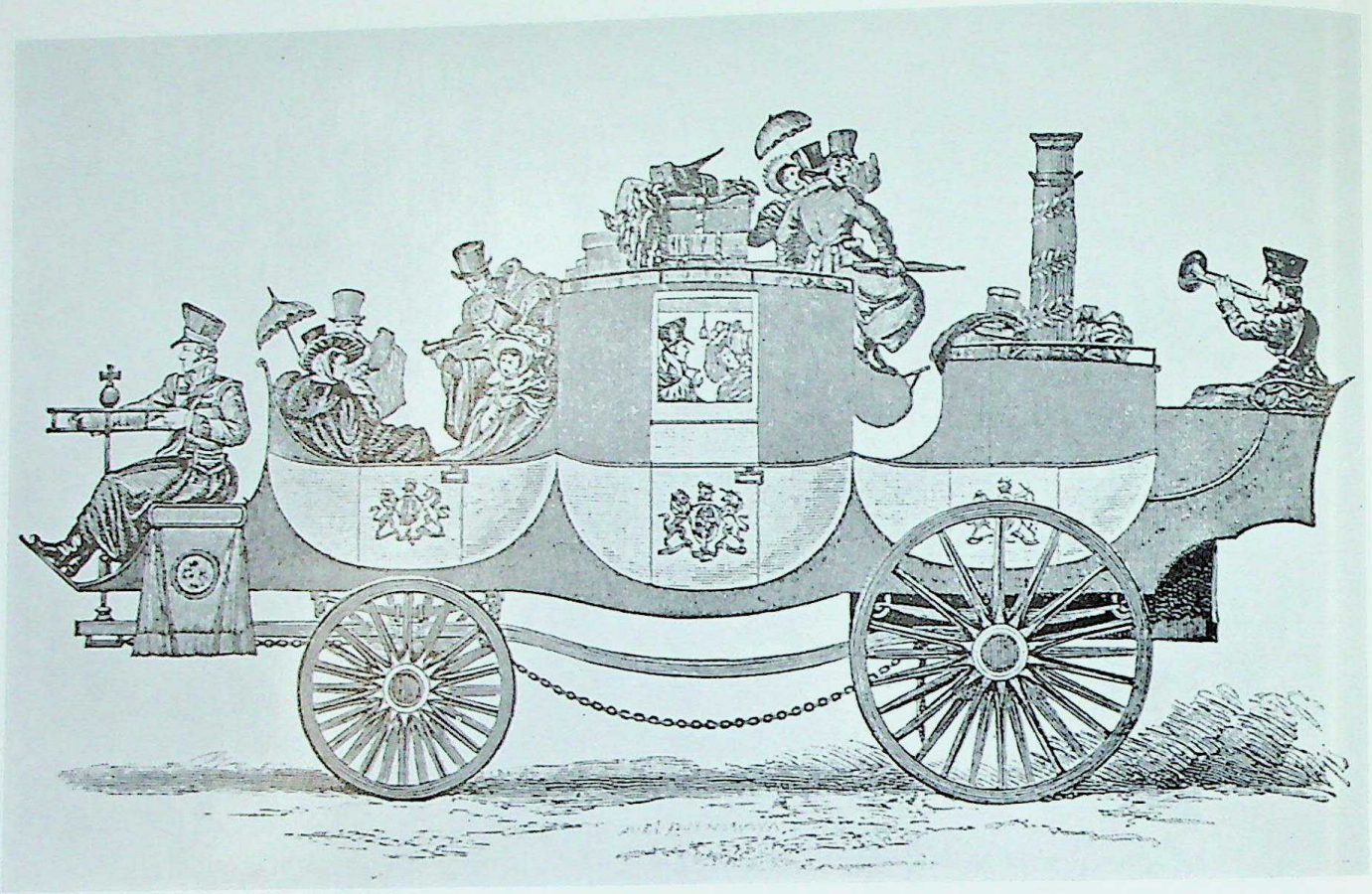
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

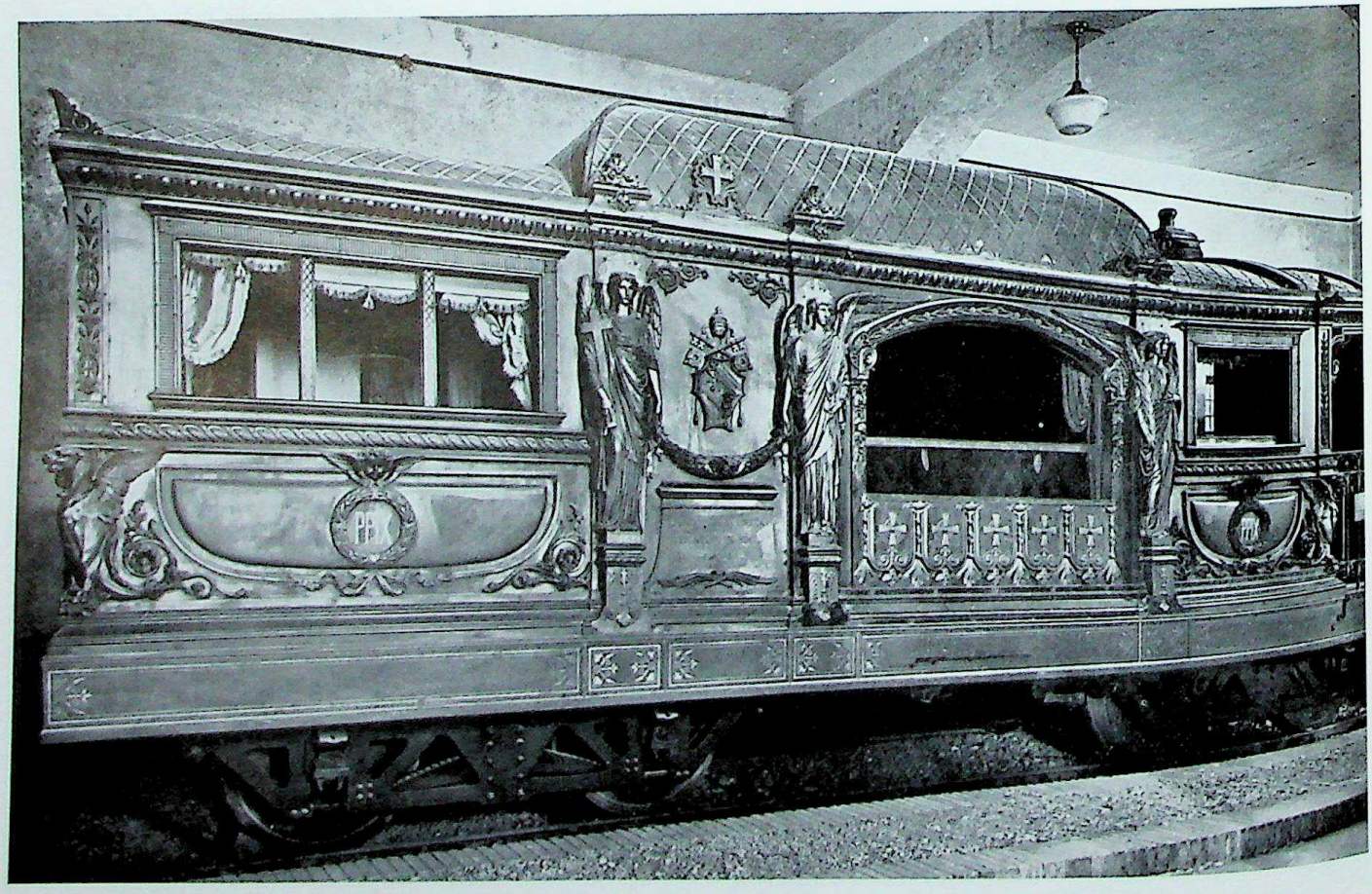




Pl. 307. *Above*: FIAT automobile, Italy, 1908. Turin, Museo dell'Automobile Carlo Biscaretti di Ruffia. *Below*: Alfa Romeo "Giulia Spider," with body by Pininfarina, Italy, 1961.

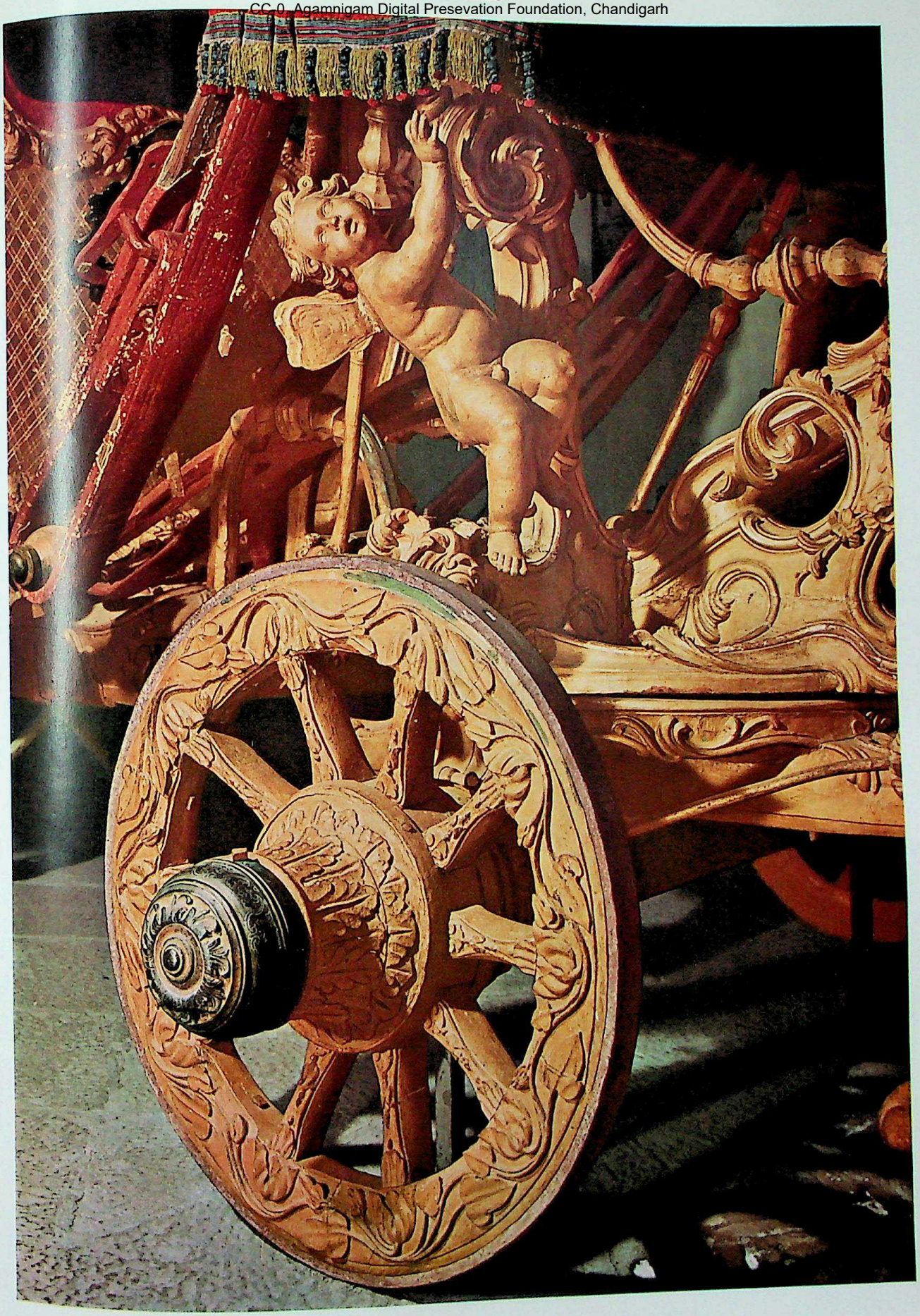
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 308. *Above*: Steam coach, designed by J. C. Anderson and W. H. James, England, 1829. *Below*: Coach of the railway train used by Pius IX (pope, 1846–78). Rome, Museo di Roma.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

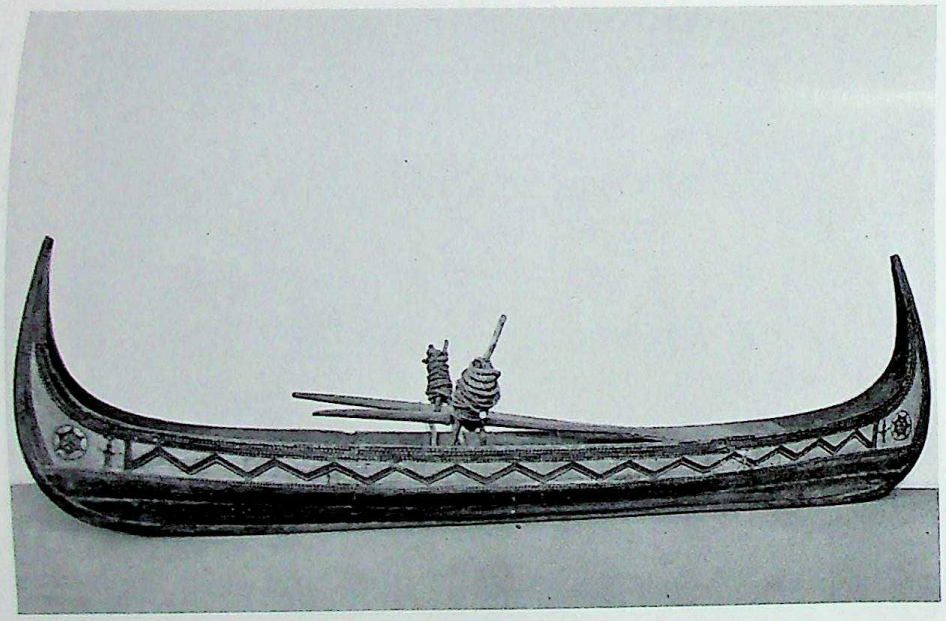


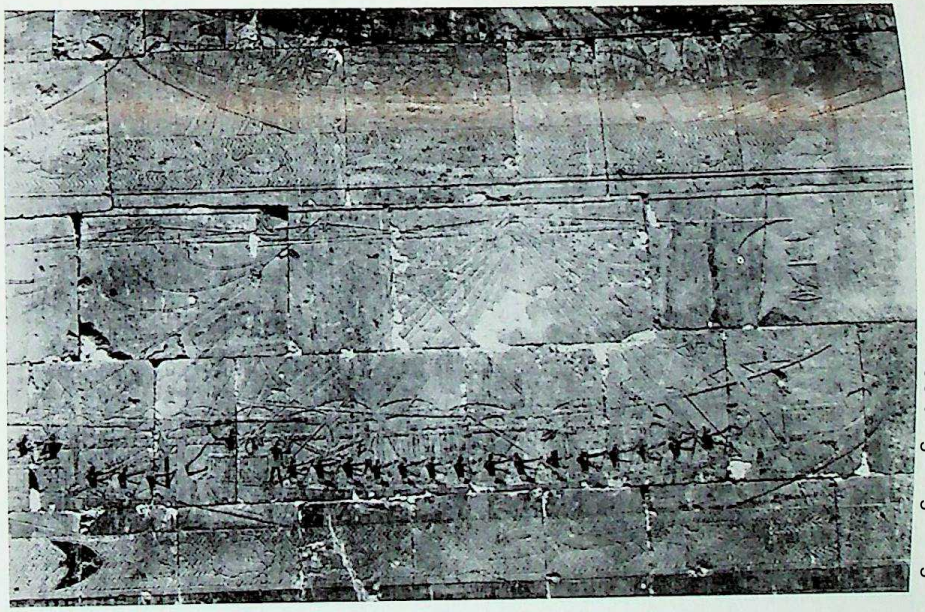
Pl. 309. State coach of the commune of Naples, detail, second quarter of 18th cent. Naples, Museo Nazionale di S. Martino.

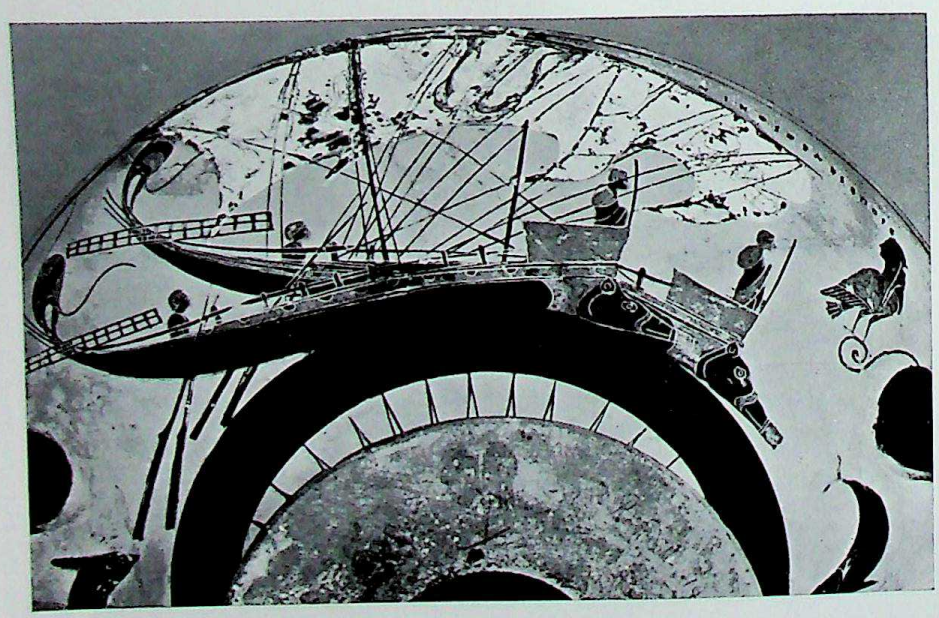
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

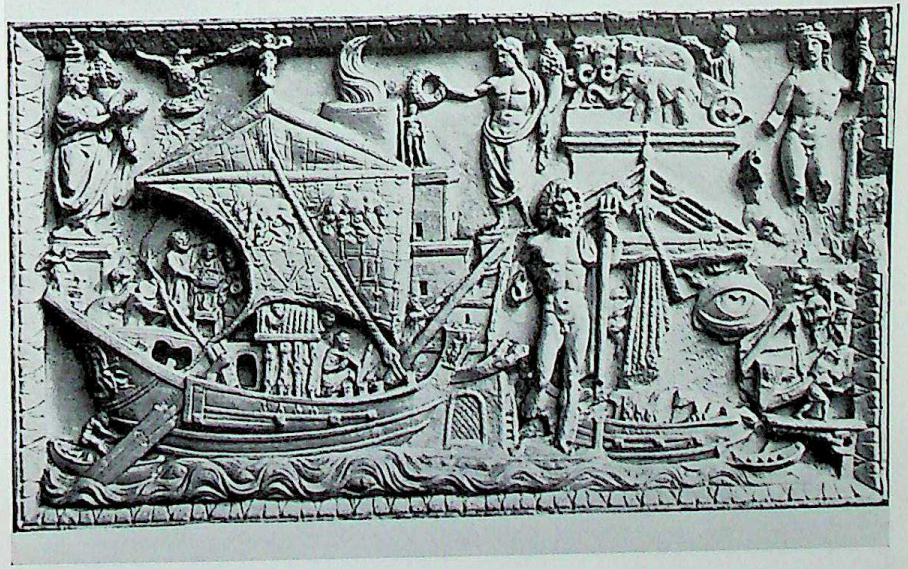
Pl. 310. Romagnese farm wagon, Italy, 19th cent. Rome, Museo delle Arti e delle Tradizioni Popolari.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



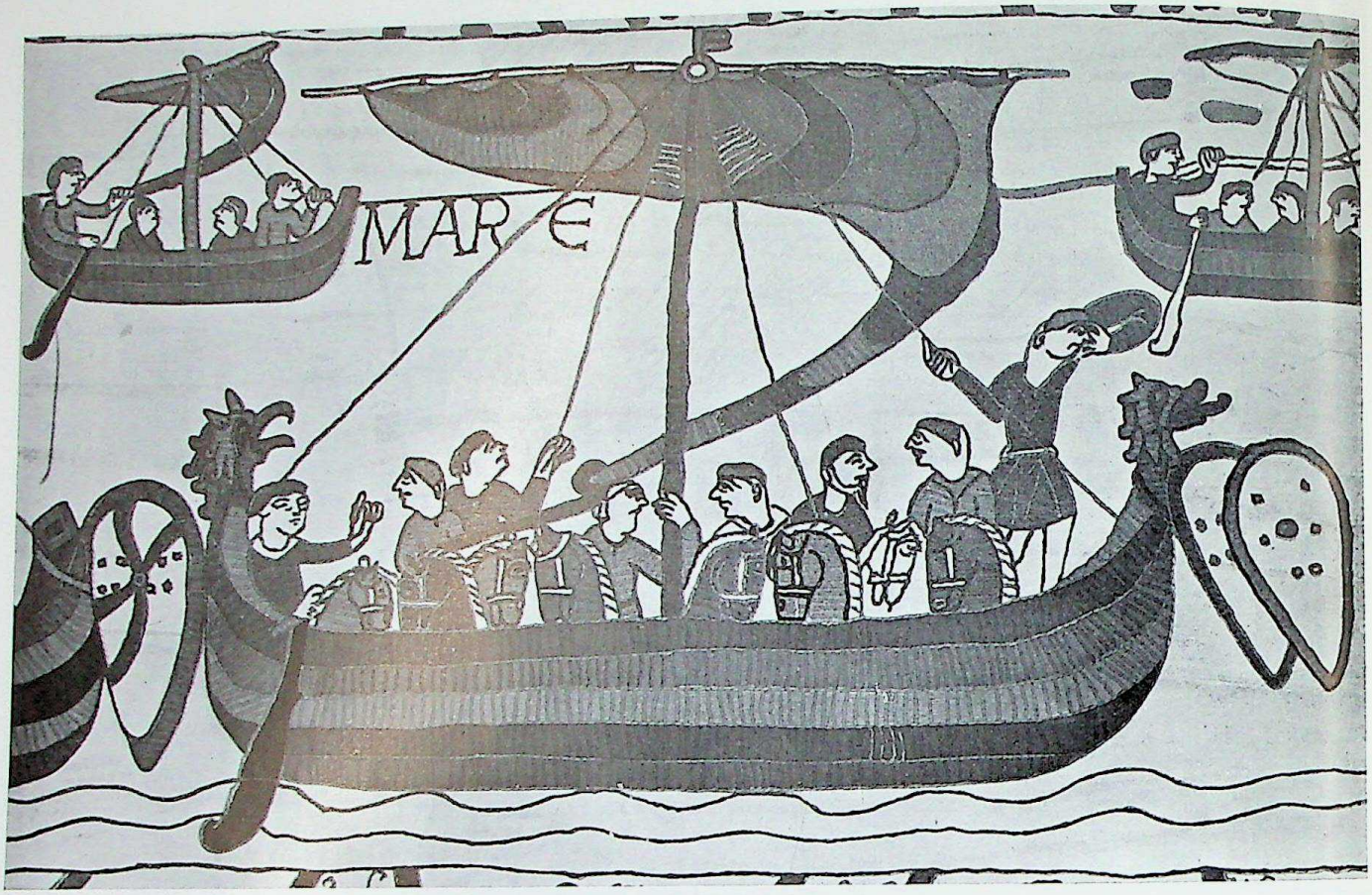






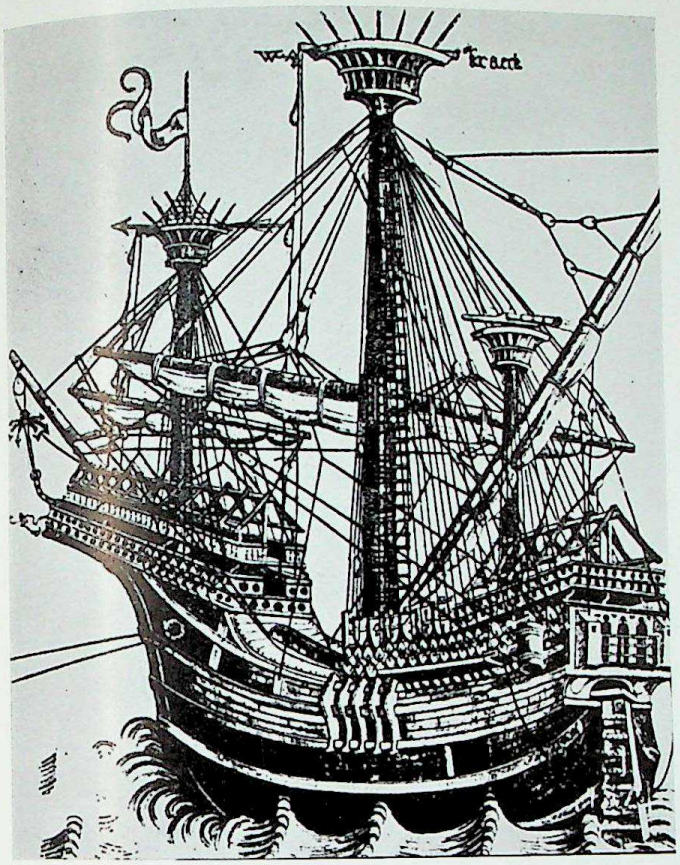
Pl. 311. *Above, left*: Yami plank-built canoe for sailing or paddling, from Botel Tobago, near Formosa. Stockholm, Statens Etnografiska Museum. *Right*: Egyptian ship, detail of relief in the Portico of Punt, temple of Queen Hatshepsut, Deir el-Bahri, near Thebes, ca. 1480 B.C. *Below, left*: Athenian merchant ship, detail of a kylix signed by Nikosthenes, ca. 520 B.C. Paris, Louvre. *Right*: Roman cargo boat, marble relief with a view of the port of Ostia, 2d cent. (?). Rome, Torlonia Coll. (photo from a cast).

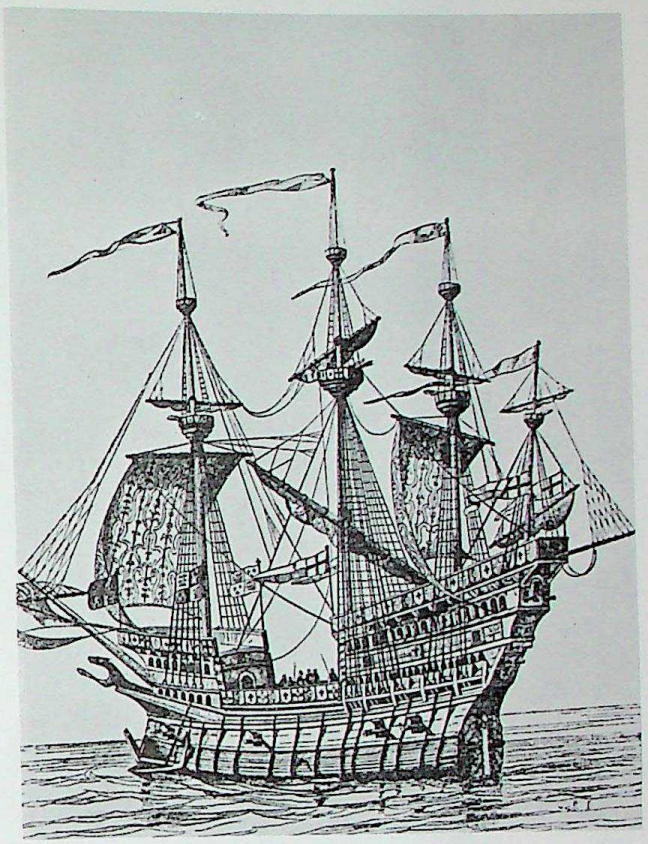
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

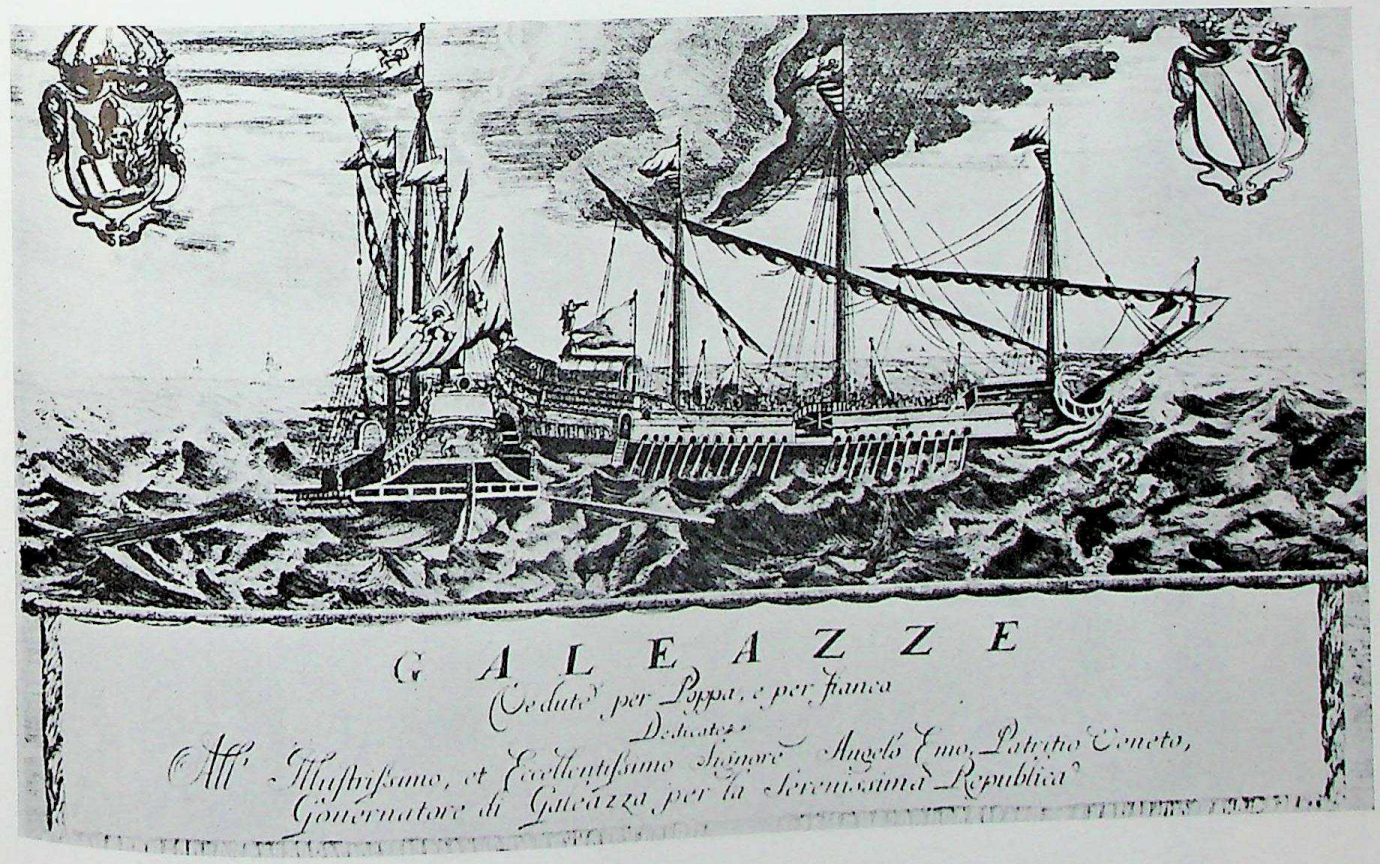


Pl. 312. *Above*: William the Conquerer's fleet crossing the channel, detail of the Bayeux tapestry, Anglo-Norman school, ca. 1080. Bayeux, France, Musée de la Reine Mathilde. *Below*: Persian sailing vessel, miniature showing infidels cast into the sea, from the *Khāvarān-nāma* (dispersed) of Ibn Ḥusām, Shiraz, Timurid school, ca. 1480. New York, Metropolitan Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

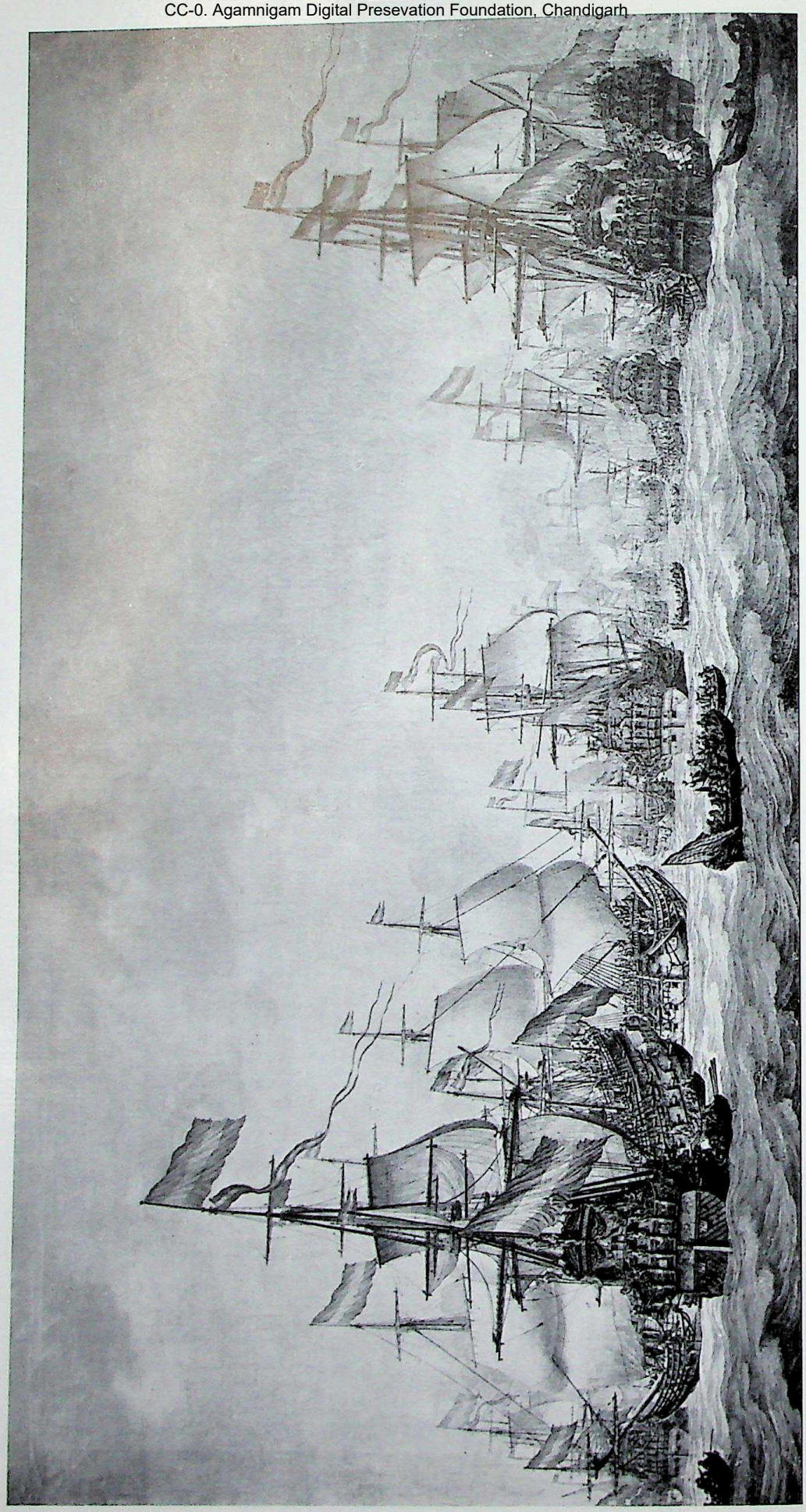






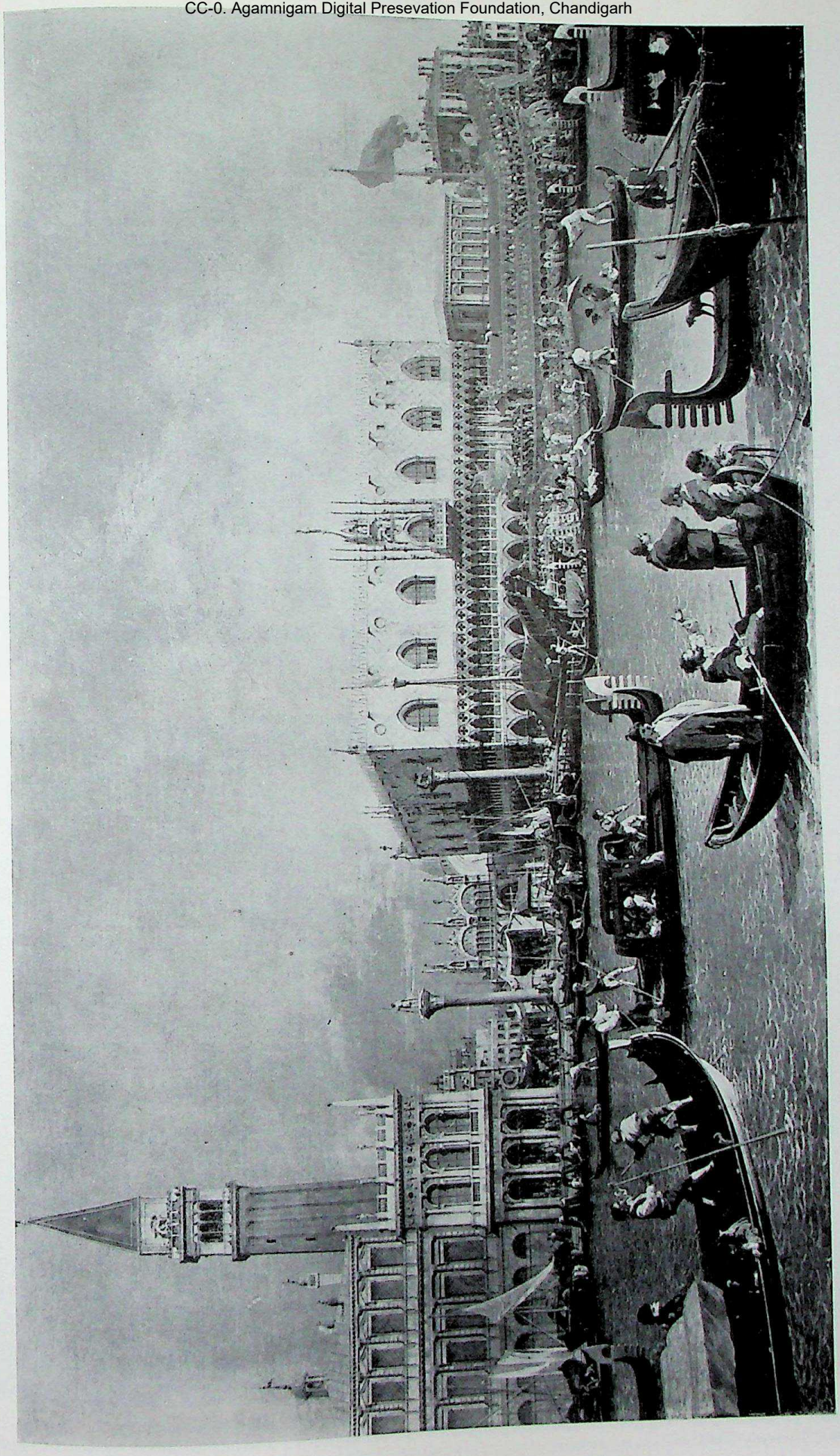
Pl. 313. *Above, left*: Galleon (carrack), Flemish engraving, 1480–90. *Right*: English galleon, first half of 16th cent., engraving based on a painting by H. Holbein. *Below*: Venetian galleasses, engraving, 17th cent.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



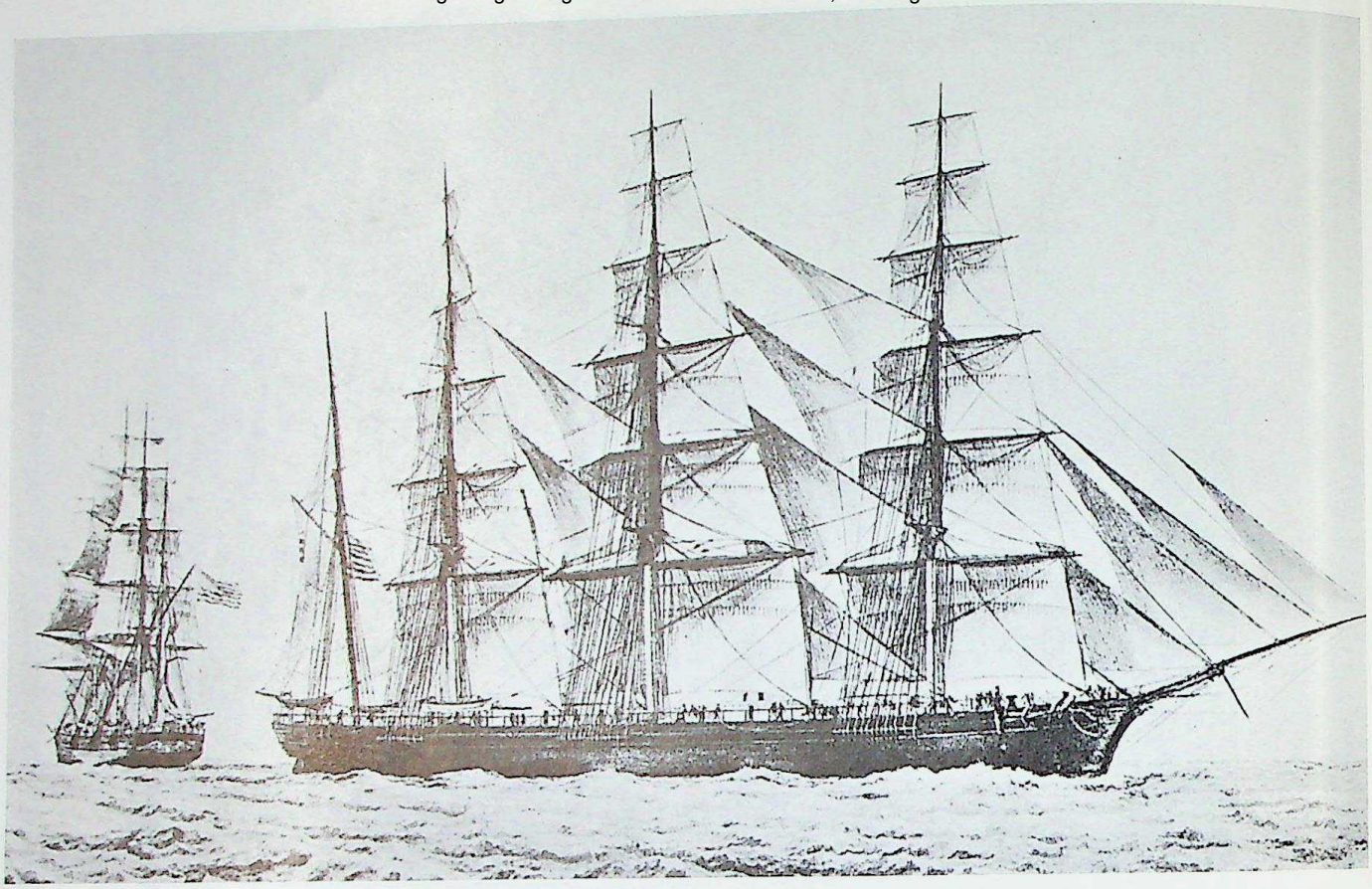
Pl. 314. W. van de Velde the Elder, Dutch Men-of-war, 1672. Monochrome painting on canvas, 3 ft., 7 in. × 6 ft., 7½ in. Florence, Pitti.

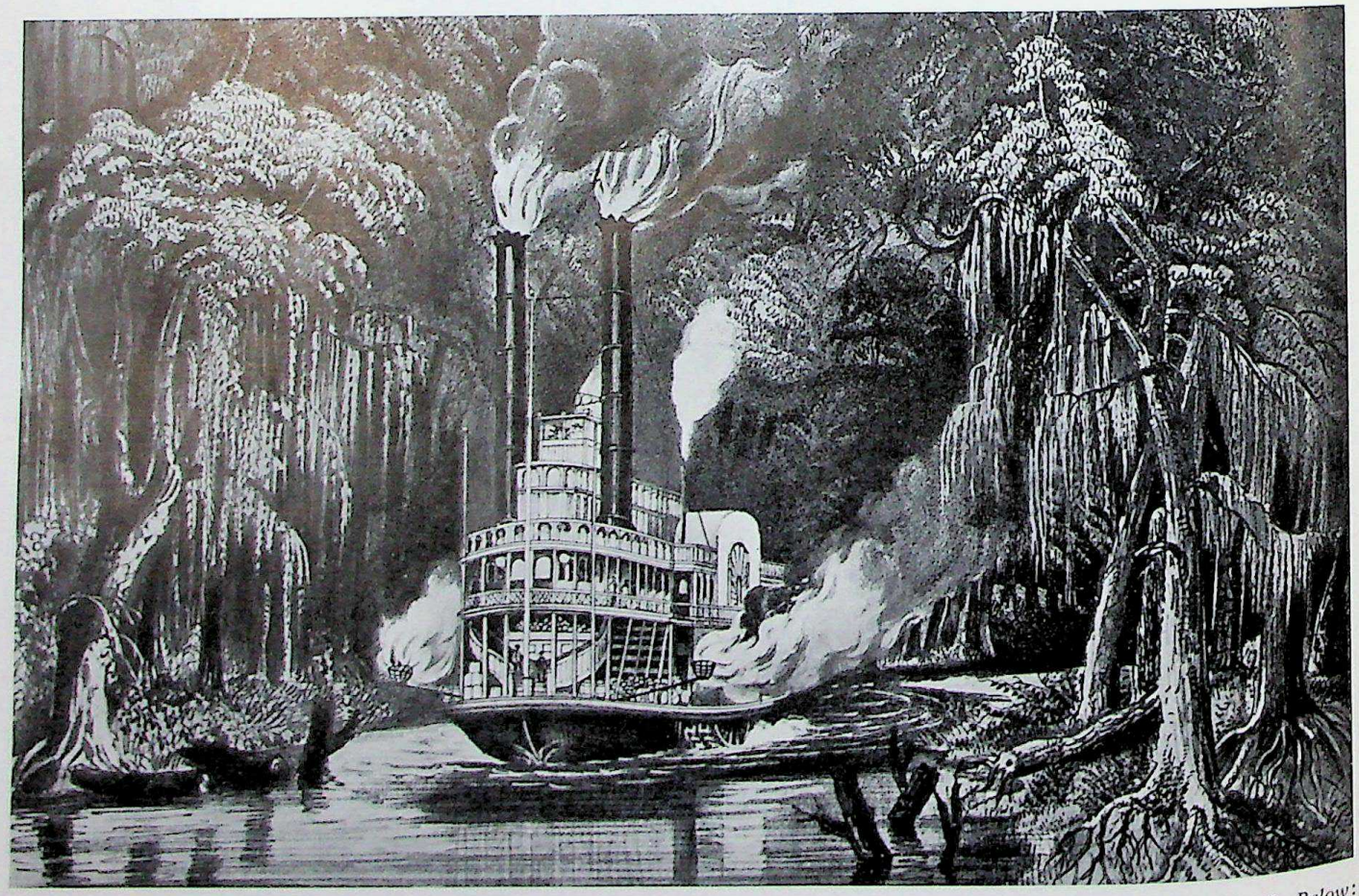
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 315. Canaletto, The Bacino di S. Marco on Ascension Day, ca. 1733, showing gondolas with the state barge (Bucintoro) in the background at right. Canvas, 30¼×46 in. Windsor, England, Royal Colls.

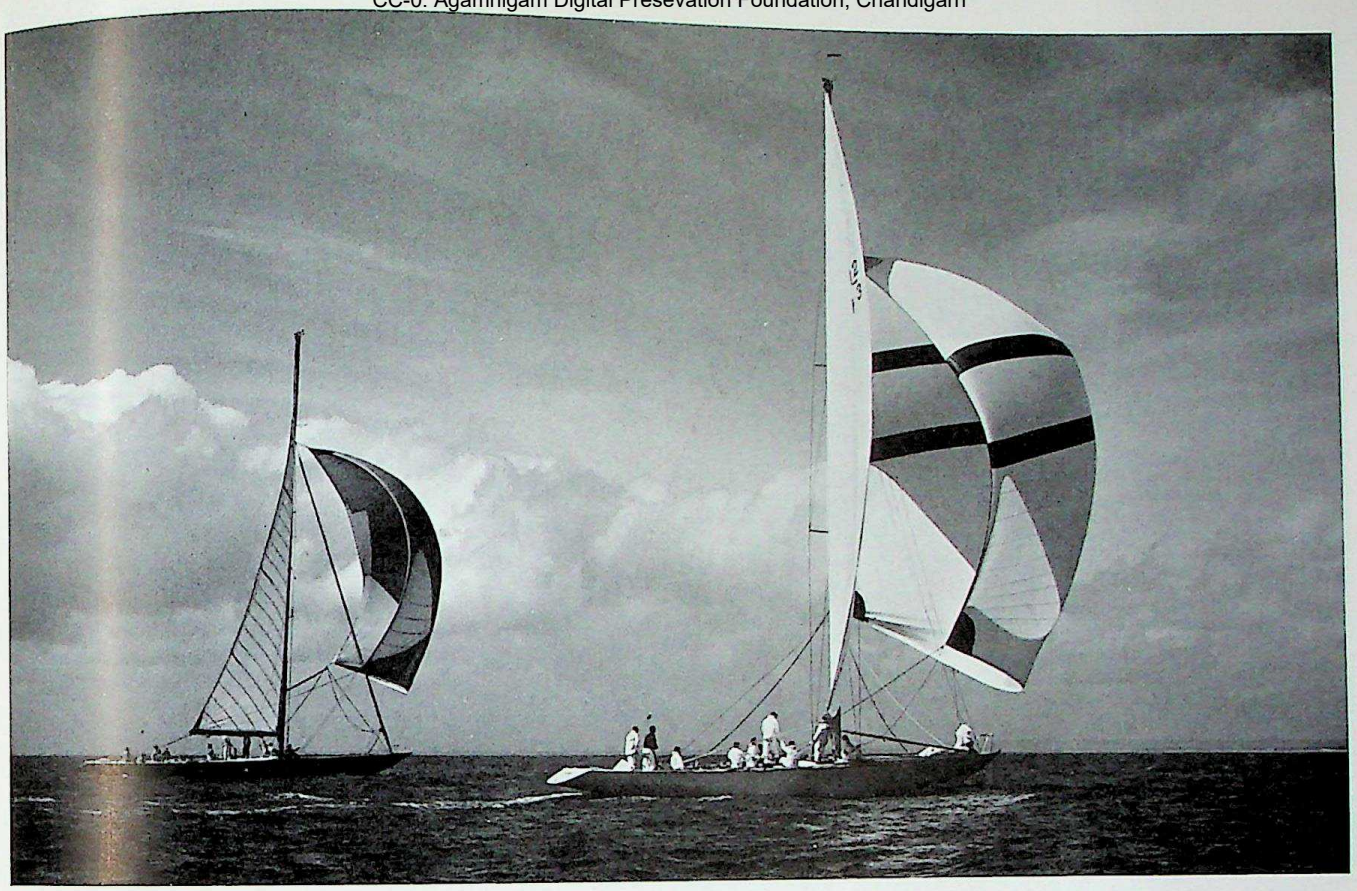
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

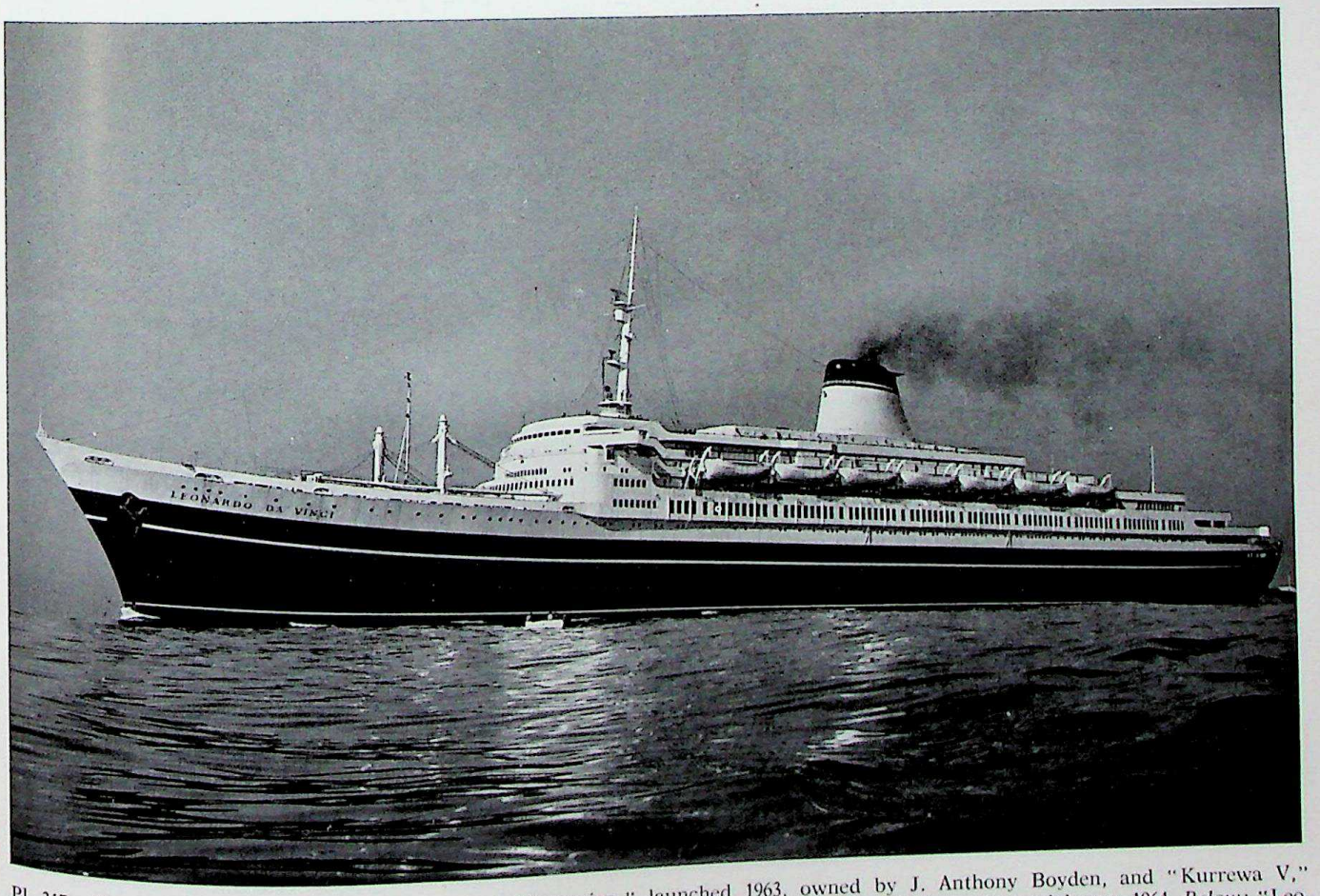




Pl. 316. *Above*: The clipper "Great Republic," built in Boston, 1853, photolithograph after a painting by F. Roux of 1882. *Below*: American paddle steamer, depicted in the lithograph Through the Bayou by Torchlight, issued by Currier & Ives, second half of 19th cent.

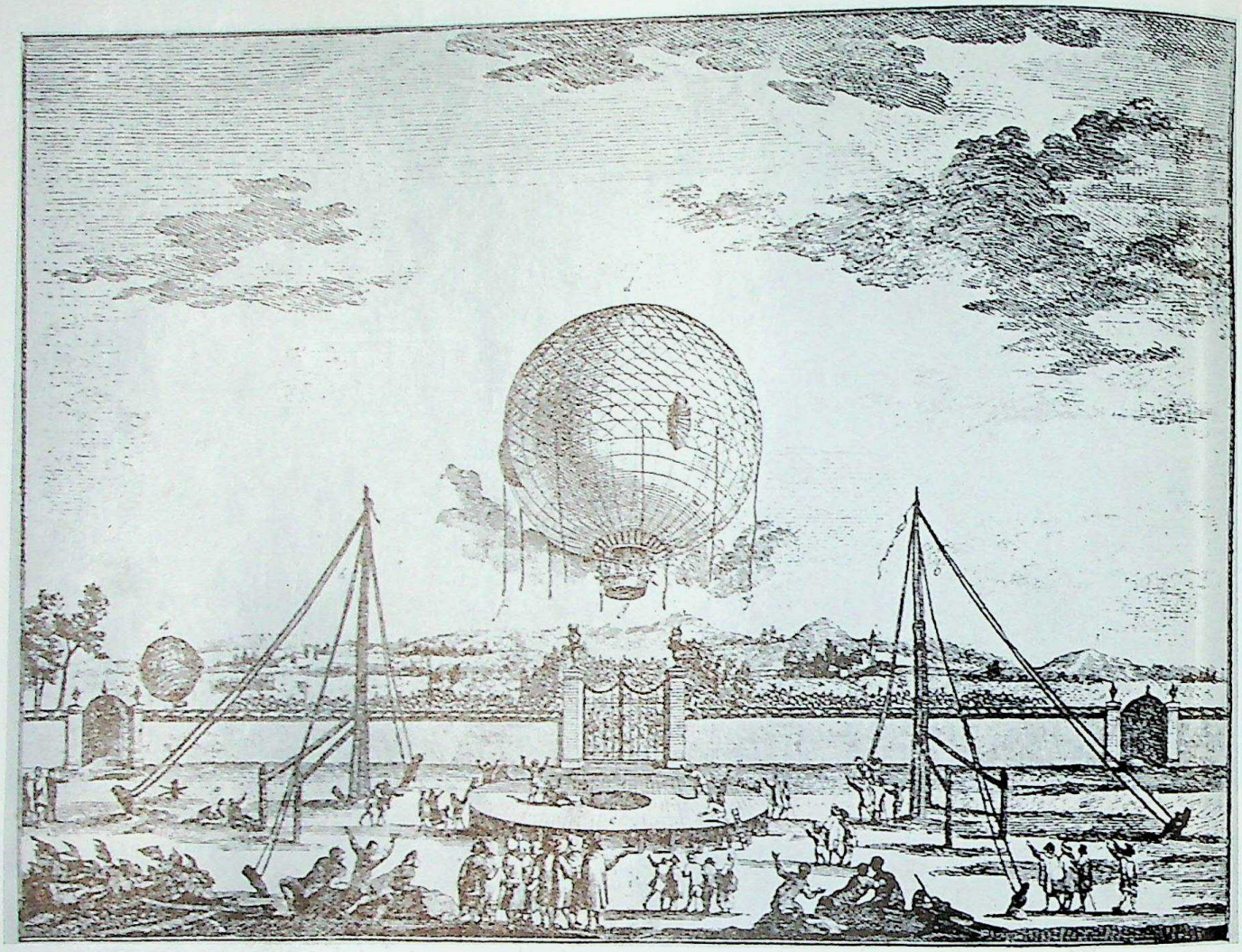
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 317. *Above*: English 12-meter racing yachts, "Sovereign," launched 1963, owned by J. Anthony Boyden, and "Kurrewa V," launched 1964, owned by Frank and John Livingston, both designed by David Boyd, shown in a trial race, 1964. *Below*: "Leonardo da Vinci," transatlantic turbine steamship of Italia Navigazione, entered in service 1960.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

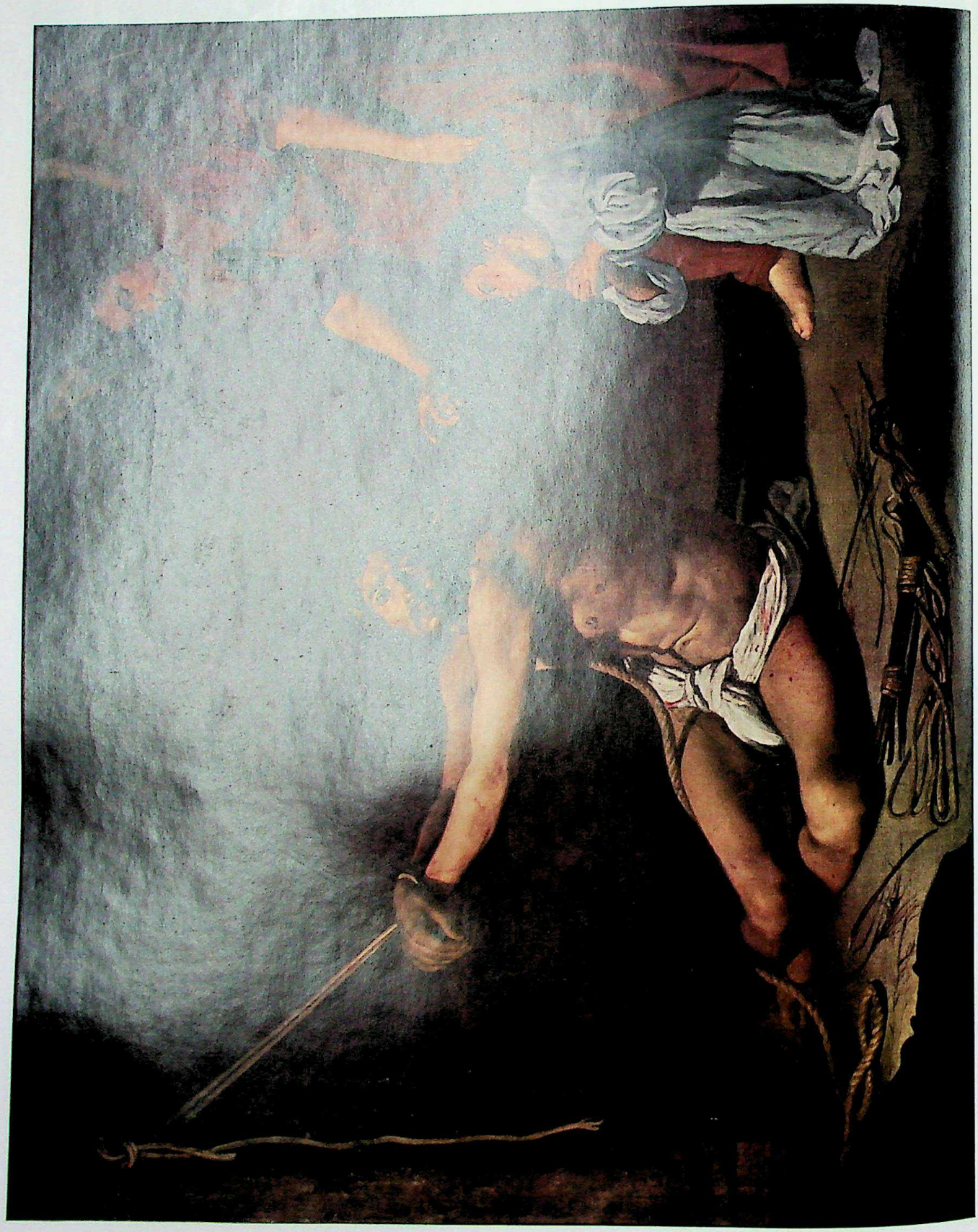


Pl. 318. *Above*: The Gerli-Andreani balloon ascension, Feb. 25, 1774, engraving, Parma, 1775. *Below*: The Hawker Siddeley "Trident," three-engine jet aircraft, built at Hatfield, Hertfordshire, England, 1962.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

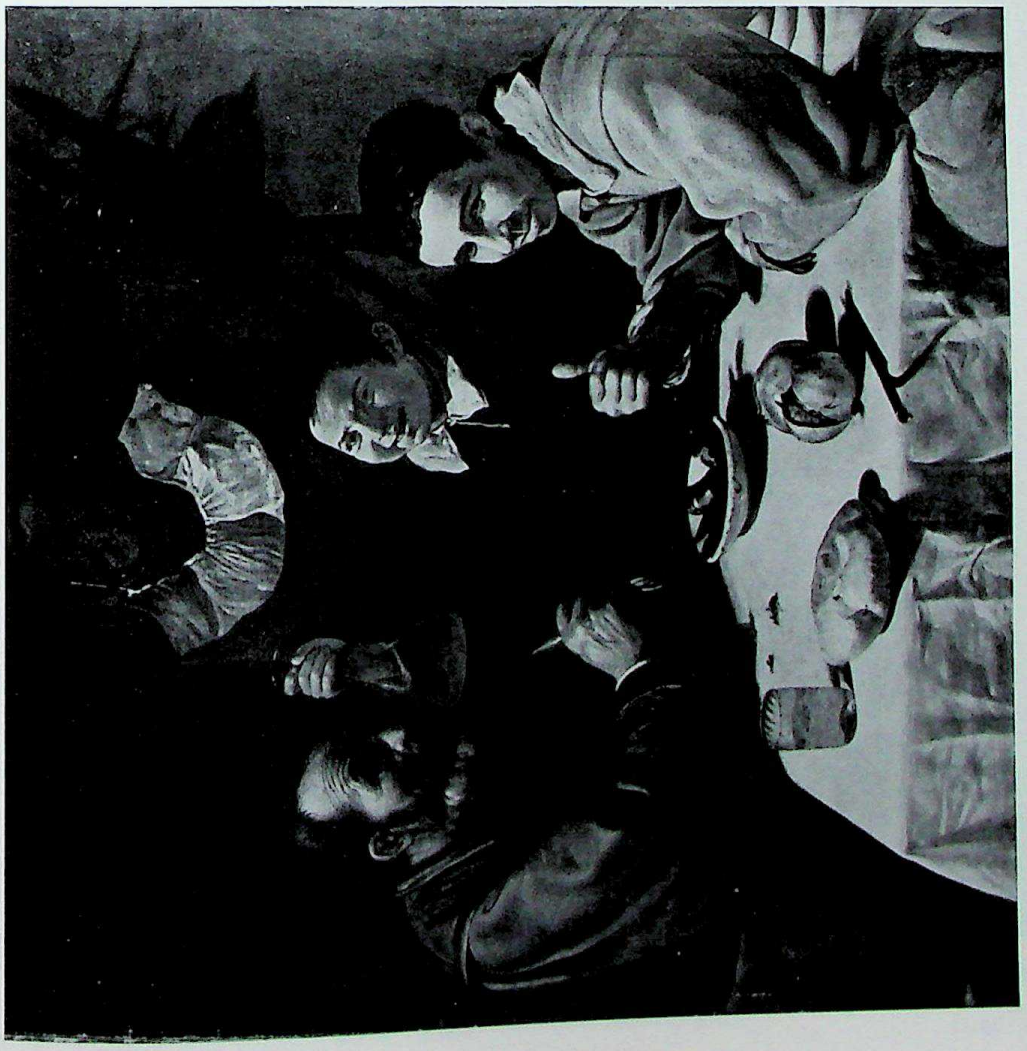
Pl. 319. Stern of the royal pleasure boat of Charles IV of Naples, 1735. Carved and gilded wood, 7 ft., 10½ in. × 4 ft., 3⅛ in. Naples, Museo Nazionale di S. Martino.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 320. Christ after the Flagellation Contemplated by the Christian Soul. Canvas, 5 ft., 5 in. × 6 ft., 9¼ in. London, *National Gallery.*

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

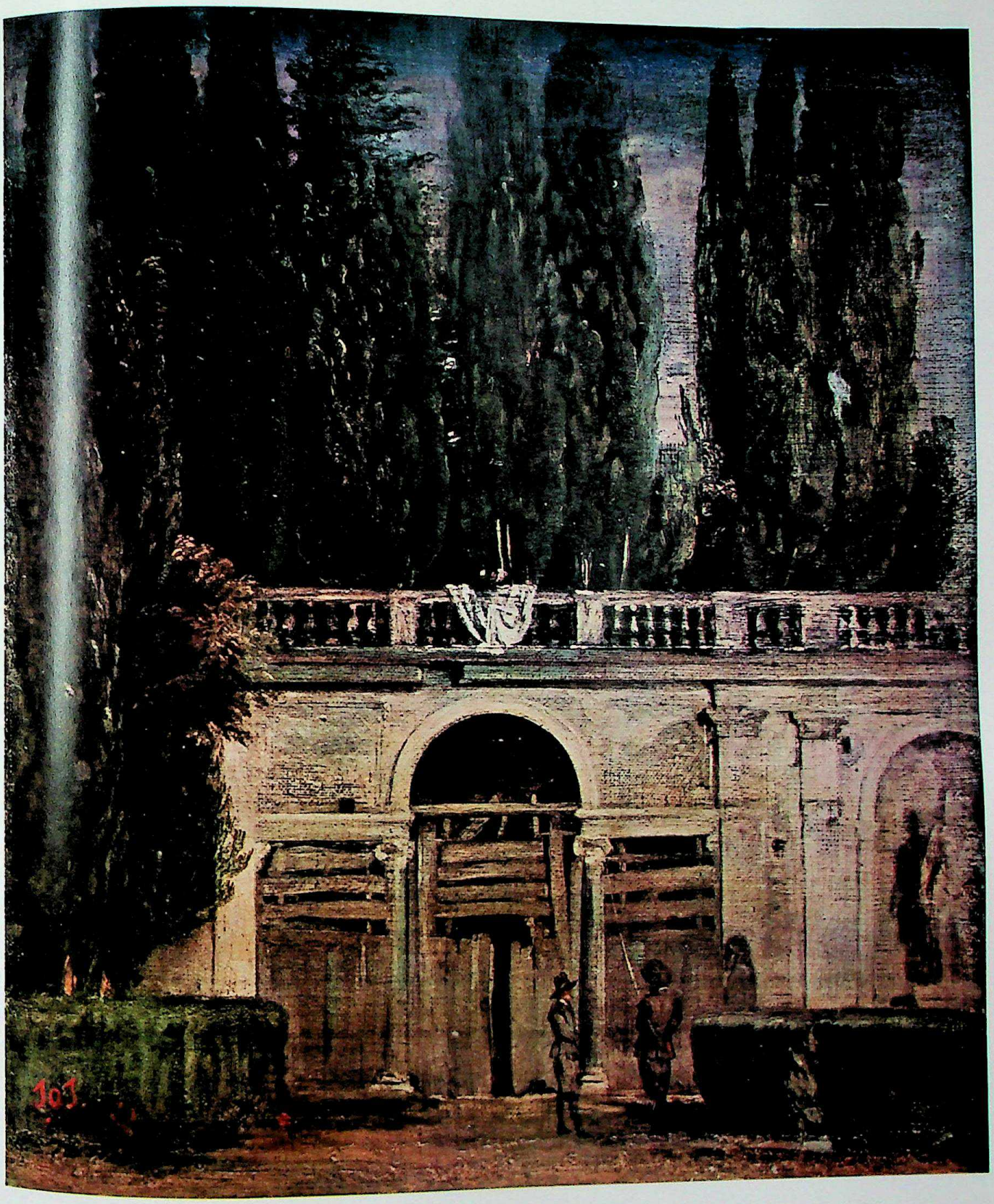


Pl. 321. *Left*: Three Men at Table. Canvas, 42 1/8 × 39 3/4 in. Leningrad, The Hermitage. *Right*: The Forge of Vulcan, detail of VII, pl. 386. Canvas. Madrid, Prado.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 322. *Above*: The Drunkards (The Triumph of Bacchus). Canvas, 5 ft., 5 in. × 7 ft., 4½ in. Madrid, Prado. *Below*: Joseph's Bloody Coat Brought to Jacob. Canvas, 7 ft., 3¾ in. × 8 ft., 2½ in. El Escorial, near Madrid, Spain.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

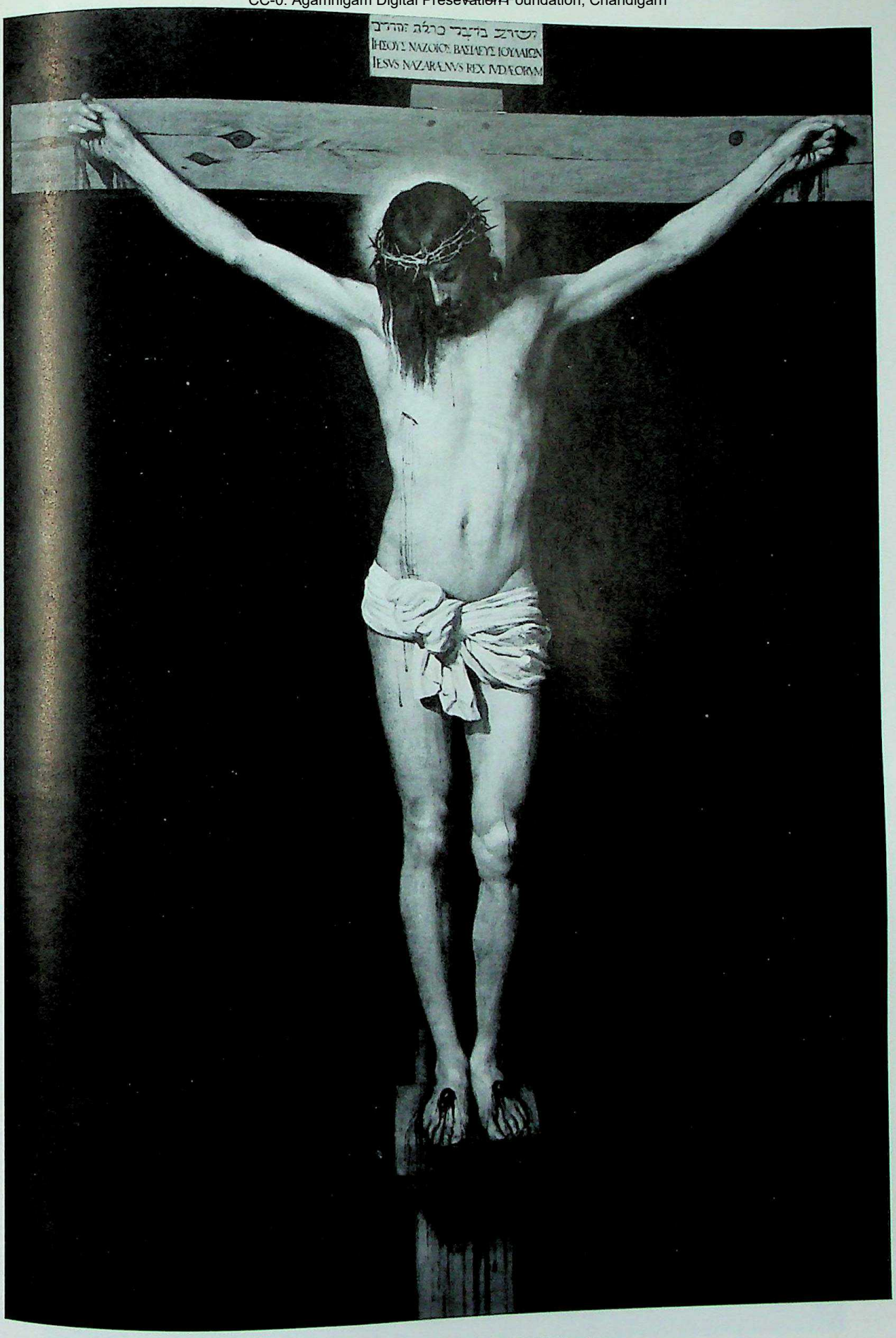


Pl. 323. View of the Garden of Villa Medici in Rome. Canvas, 17 7/8 × 15 in. Madrid, Prado.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 324. Pope Innocent X. Canvas, 4 ft., 7 in. × 3 ft., 11¼ in. Rome, Galleria Doria Pamphili.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

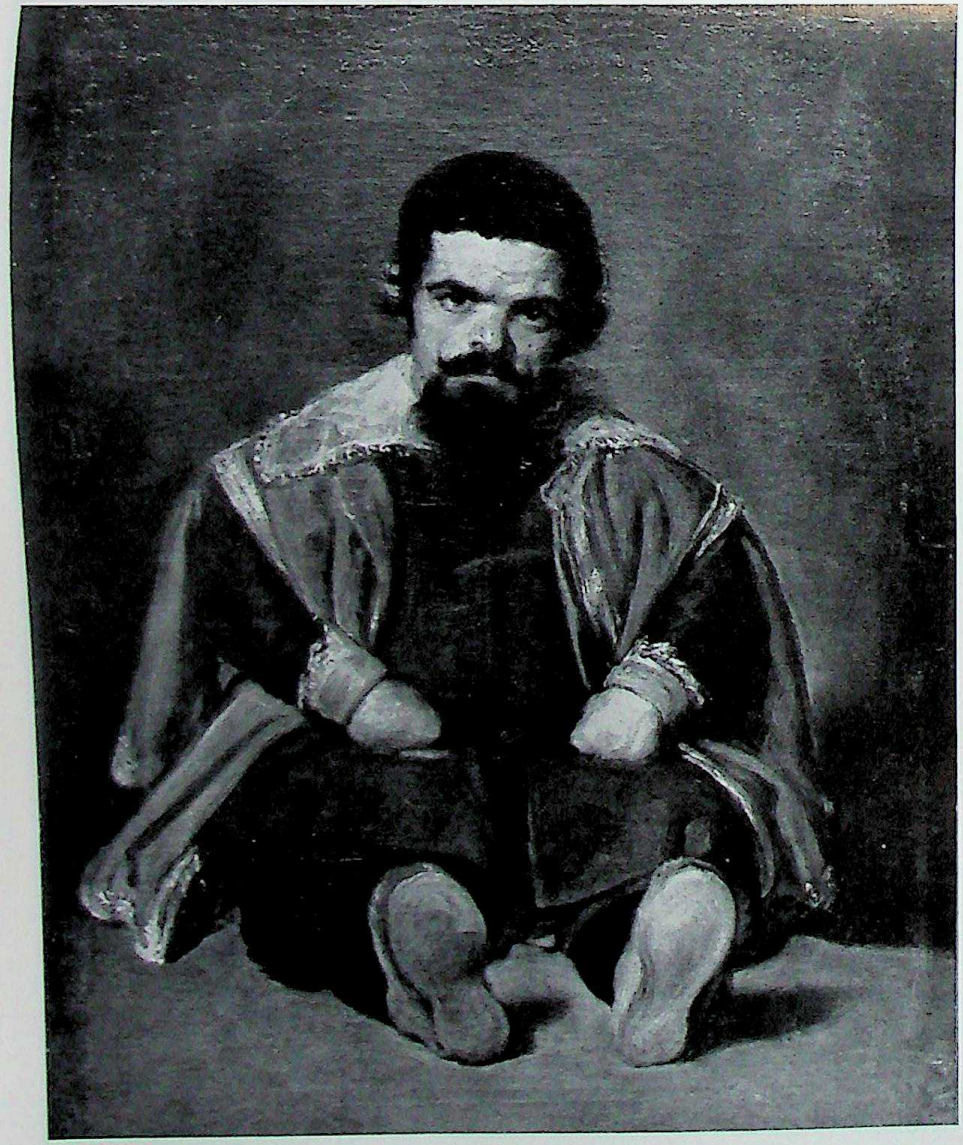


Pl. 325. Christ on the Cross. Canvas, 8 ft., 1½ in. × 5 ft., 6½ in. Madrid, Prado.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

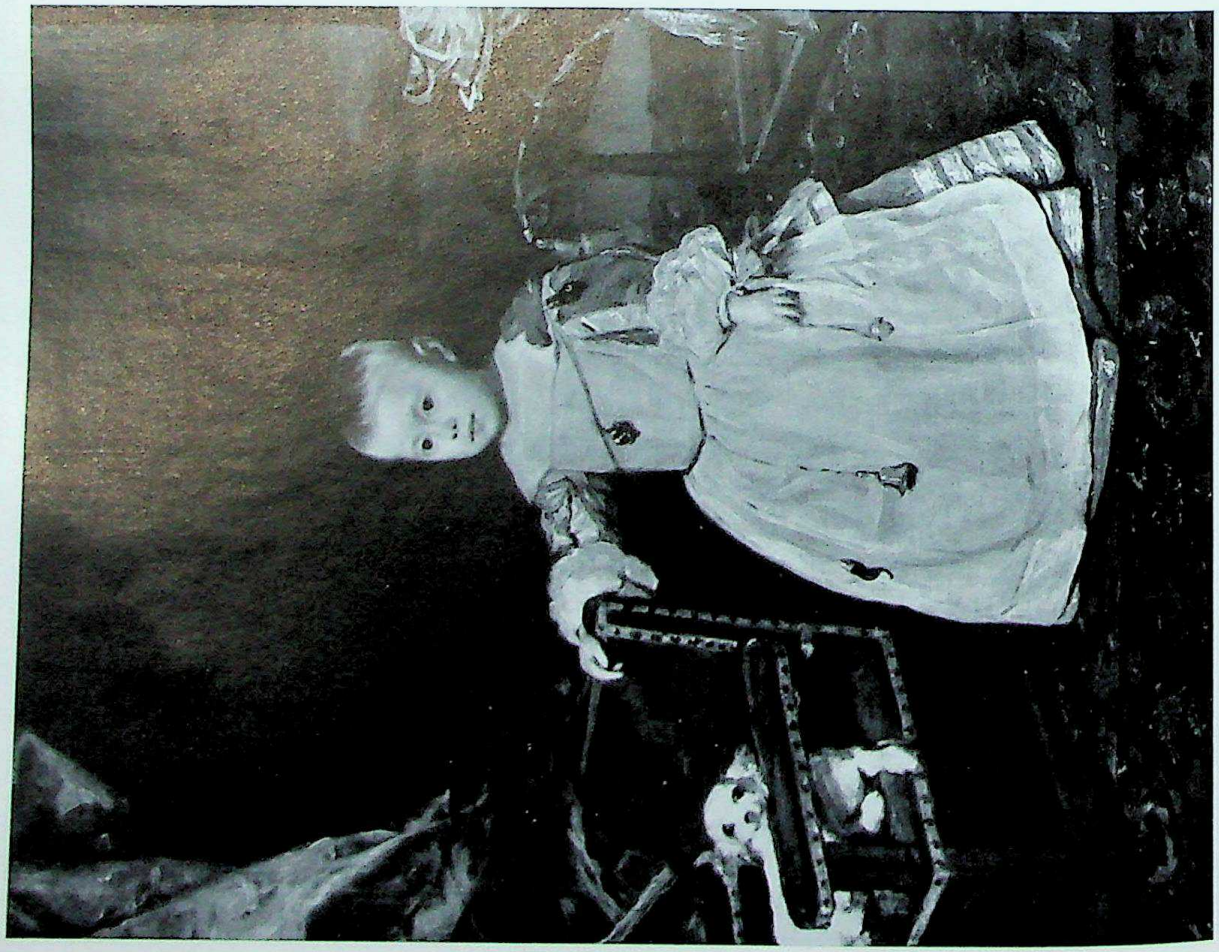
Pl. 326. *Left*: Prince Baltasar Carlos. Canvas, 6 ft., 10¼ in. × 5 ft., 8 in. *Right*: Don Gaspar de Guzmán, Count-Duke of Olivares. Canvas, 10 ft., 3¼ in. × 7 ft., 10 in. Both, Madrid, Prado.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 327. *Left*: The Jester Sebastián de Morra. Canvas, 41 3/4 × 32 in. Madrid, Prado. *Right*: Francesco I d'Este, Duke of Modena. Canvas, 26 1/4 × 20 in. Modena, Italy, Galleria Estense.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 328. *Left*: Prince Felipe Próspero. Canvas, 4 ft., 2½ in. × 3 ft., 3 in. Vienna, Kunsthistorisches Museum. *Right*: A Lady with a Fan. Canvas, 36½×26⅞ in. *London, Wallace Coll.*

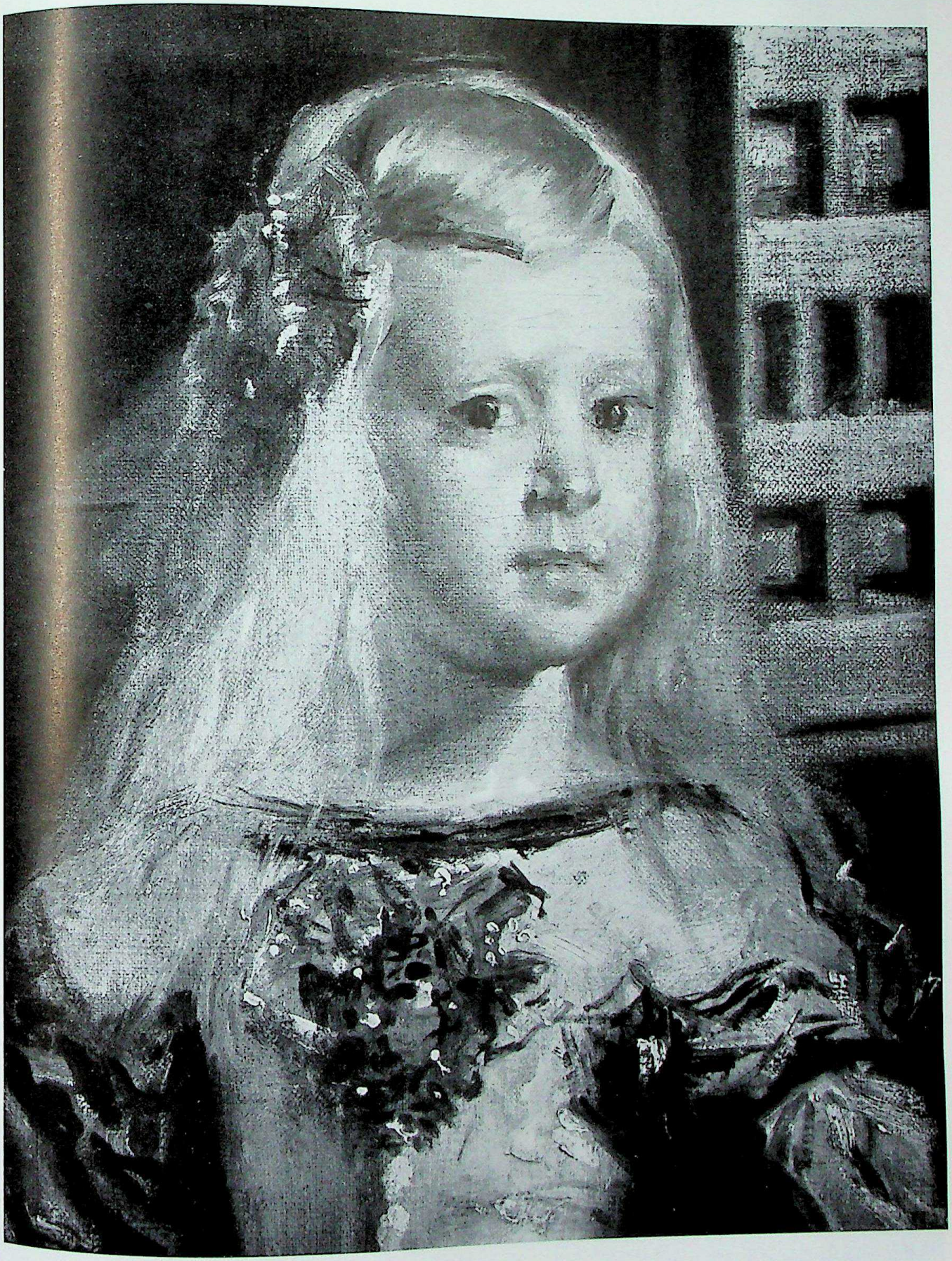
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 329. The Toilet of Venus ("The Rokeby Venus"). Canvas, ca. 4 ft., 1/4 in. × 5 ft., 9 3/4 in. London, National Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 330. The Family of Philip IV, called "Las Meninas," central portion. Canvas; full size, 10 ft., 5 in. × 9 ft., 1/2 in. Madrid, Prado.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 331. Detail of PL. 330, portrait of the Infanta Doña Margarita.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 332. Las Hilanderas (The Spinners, or The Fable of Arachne), detail. Canvas; full size, 7 ft., $2^1/_2$ in. × 9 ft., $5^3/_4$ in. Madrid, Prado.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 333. A Girl Asleep. Canvas, 34 1/2 × 30 1/8 in. New York, Metropolitan Museum, Bequest of Benjamin Altman.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 334. *Left*: Christ in the House of Martha and Mary. Canvas, 5 ft., 3 in. × 4 ft., 7¾ in. Edinburgh, National Gallery of Scotland. *Right*: The Procuress. Canvas, 4 ft., 8¼ in. × 4 ft., 3⅛ in. Dresden, Gemäldegalerie.

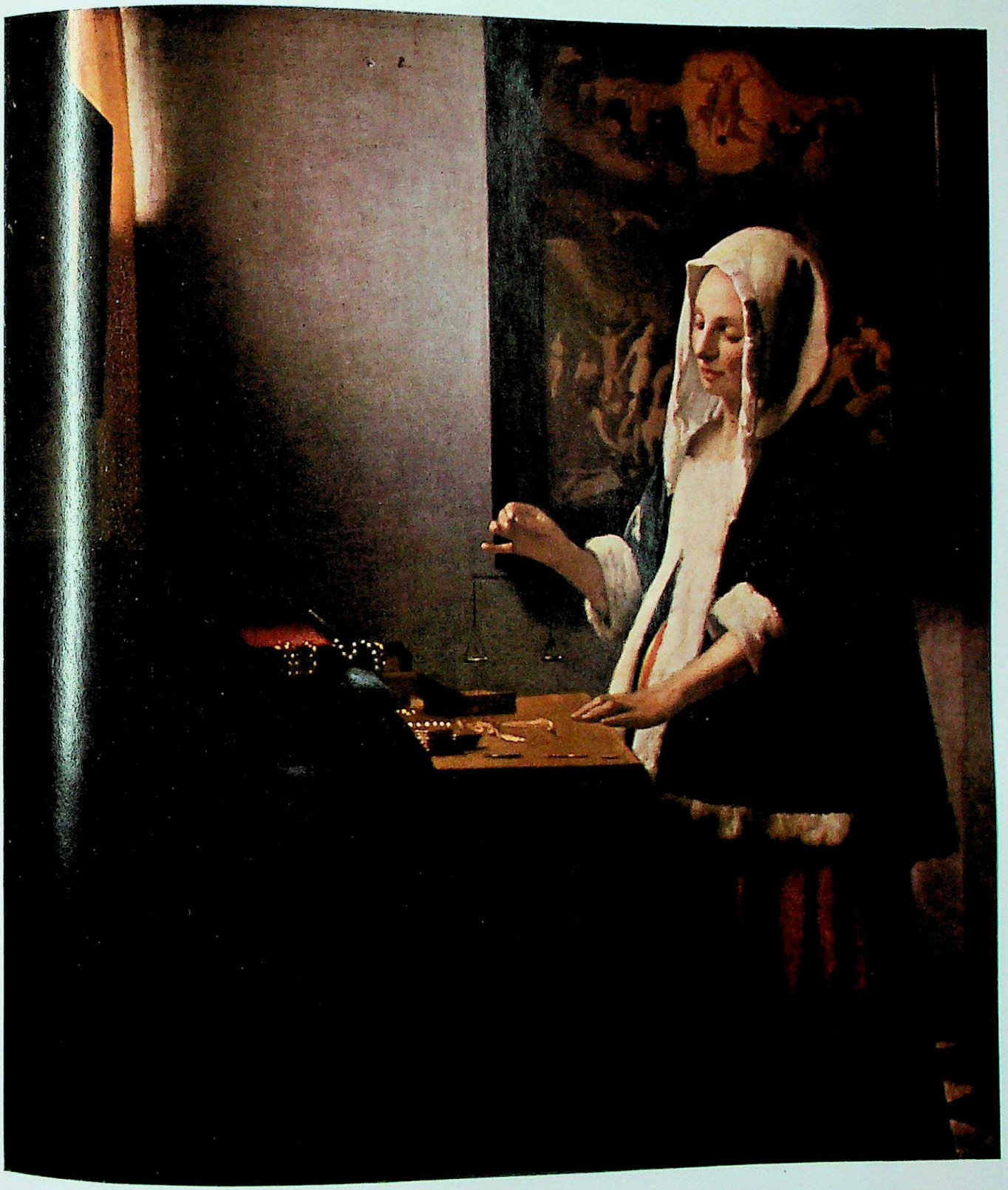
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 335. *Left*: Officer and Laughing Girl. Canvas, $19^{7}/_{8} \times 18^{1}/_{8}$ in. New York, Frick Coll. *Right*: The Cook. Canvas, $17^{7}/_{8} \times 16^{1}/_{8}$ in. Amsterdam, Rijksmuseum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 336. The Little Street (A Street in Delft). Canvas, 21 1/2 × 17 3/8 in. Amsterdam, Rijksmuseum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

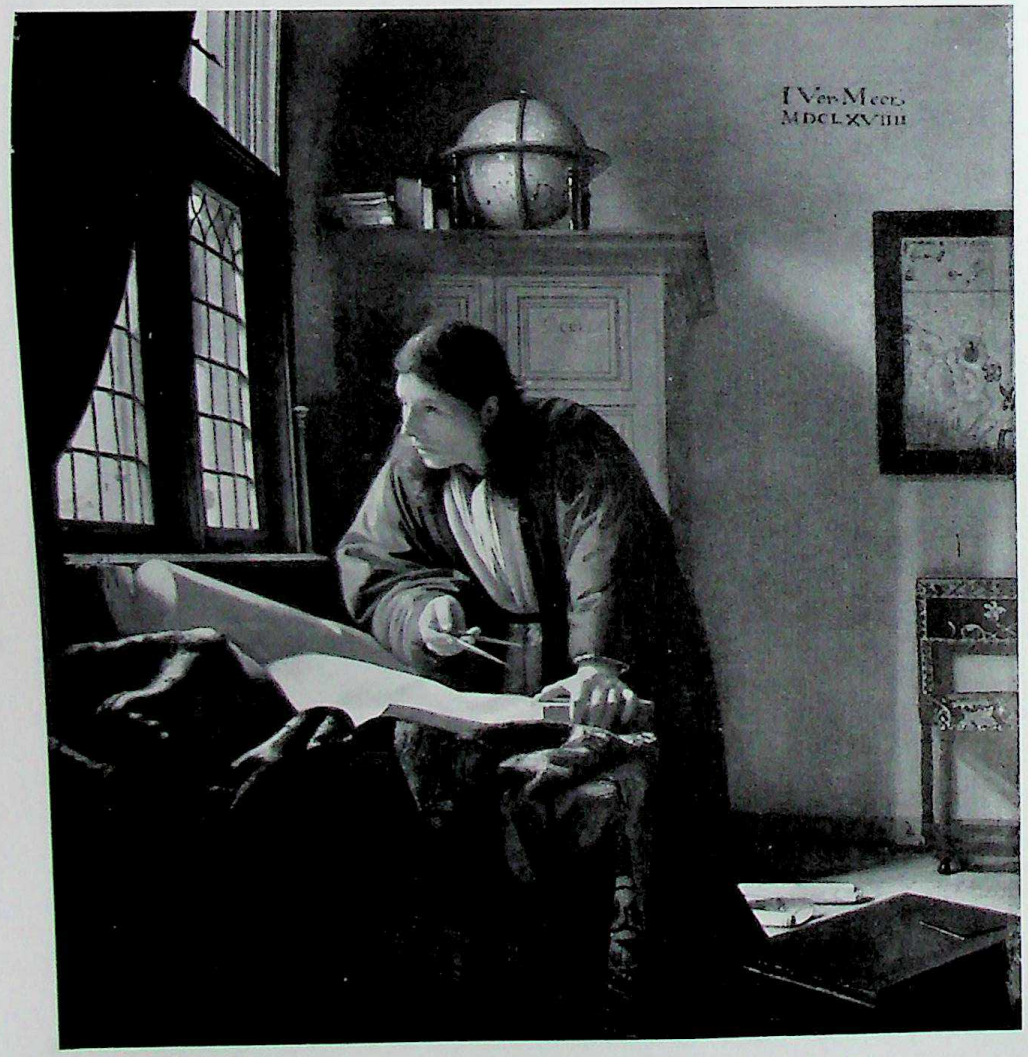


Pl. 337. A Woman Weighing Gold. Canvas, 16 3/4 × 15 in. Washington, D.C., National Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 338. *Left*: A Young Woman Standing at a Virginal. Canvas, $20^{3}/_{8} \times 17^{3}/_{4}$ in. London, National Gallery. *Right*: The Painter in His Studio, *detail showing the model. Canvas; full* size, $47^{1}/_{4} \times 39^{3}/_{8}$ in. Vienna, Kunsthistorisches Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 339. *Left*: The Geographer. Canvas, $20^{7}/_{8} \times 18^{3}/_{8}$ in. Frankfort on the Main, Städelsches Kunstinstitut. *Right*: Allegory of the New Testament. Canvas, 45×35 in. New York, Metropolitan Museum, Michael Friedsam Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 340. Head of a Young Girl. Canvas, 18 3/8 × 15 3/4 in. The Hague, Mauritshuis.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 341. The Triumph of Mordecai. Canvas, ca. 24×18 ft. Venice, S. Sebastiano.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 342. The Madonna and Child with St. Peter and a female martyr. Canvas, $45^{1}/_{4} \times 39^{3}/_{8}$ in. Vicenza, Italy, Museo Civico.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 343. Faith and Charity. Fresco. Maser, near Treviso, Italy, Villa Barbaro (now Volpi).

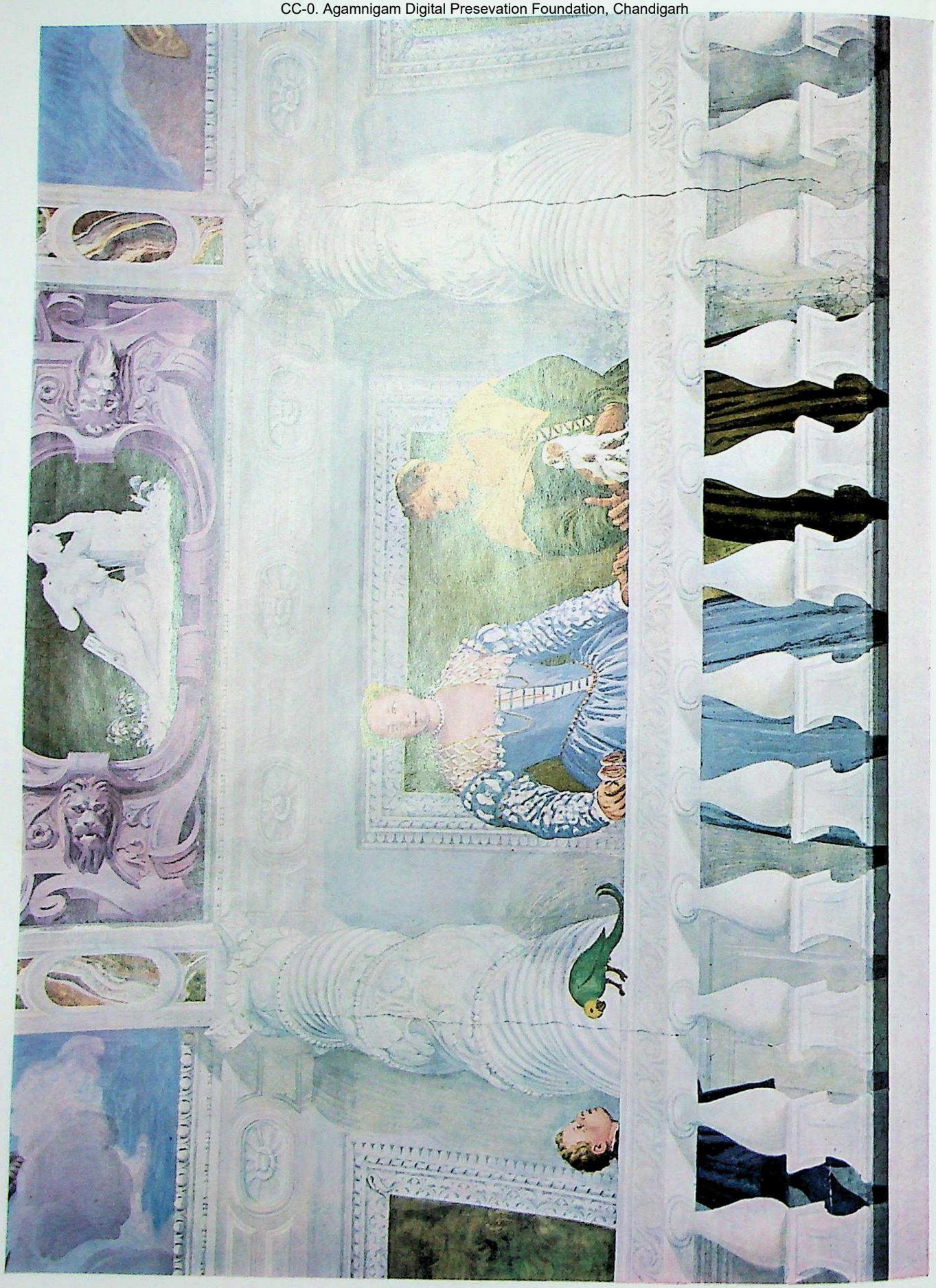
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 344. *Above, left*: Conte Giuseppe da Porto with his son Adriano. Canvas, 6 ft., 9½ in. × 4 ft., 6 in. Florence, Coll. Contini Bonacossi. *Right*: Portrait of a Lady, known as "Bella Nani." Canvas, 3 ft., 11 in. × 3 ft., 4½ in. Paris, Louvre. *Below*: Venus and Adonis. Canvas, 4 ft., ½ in. × 5 ft., 8½ in. Augsburg, Germany, Kunstsammlungen.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

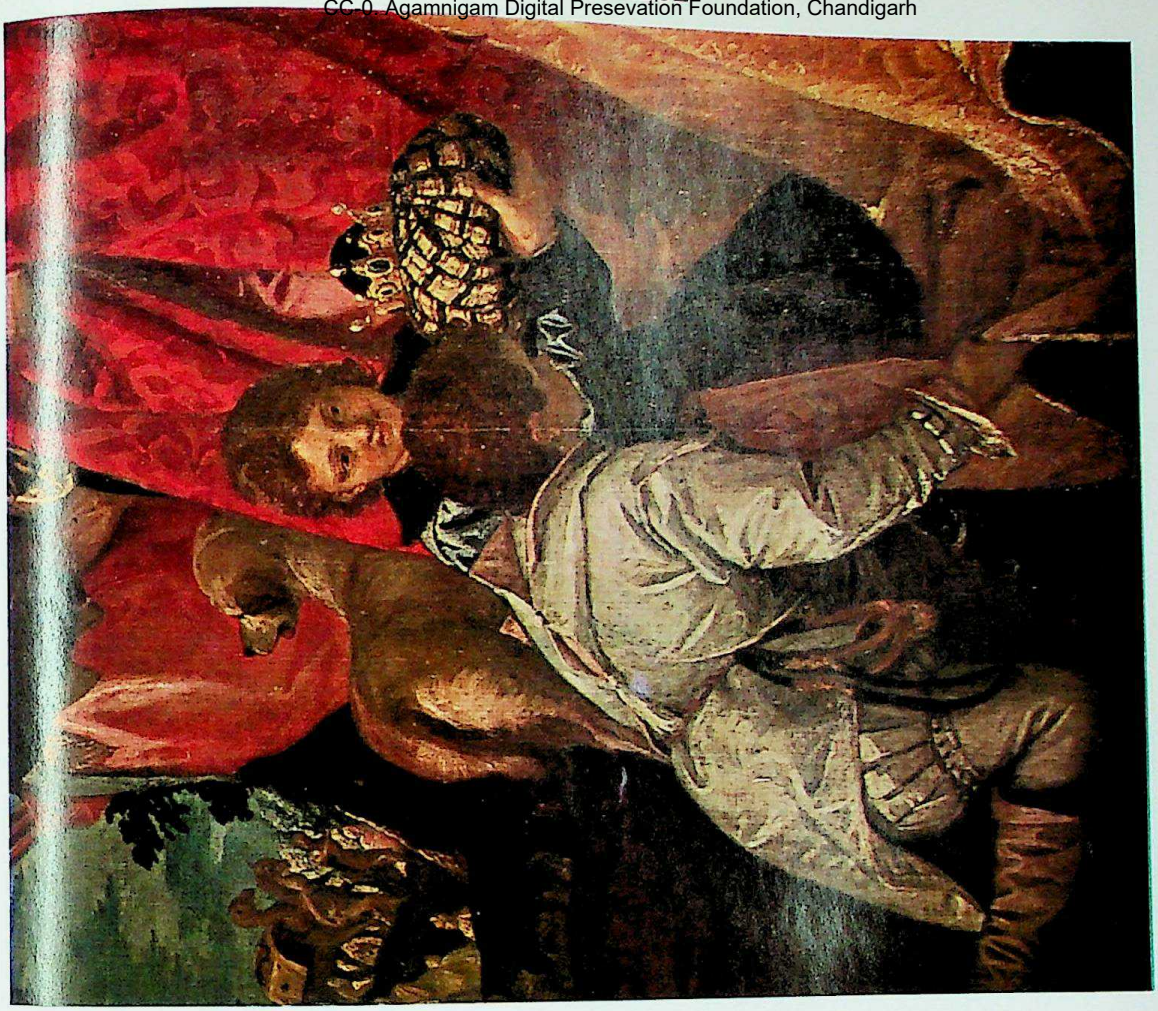
Pl. 345. *Above*: Allegory of Spring. Fresco. Maser, near Treviso, Italy, Villa Barbaro (now Volpi). *Center*: The Anointing of David. Canvas, 5 ft., 8 in. × 11 ft., 11 in. Vienna, Kunsthistorisches Museum. *Below*: The Cuccina Family Commended to the Virgin. Canvas, 5 ft., 6 in. × 13 ft., 8 in. Dresden, Gemäldegalerie.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



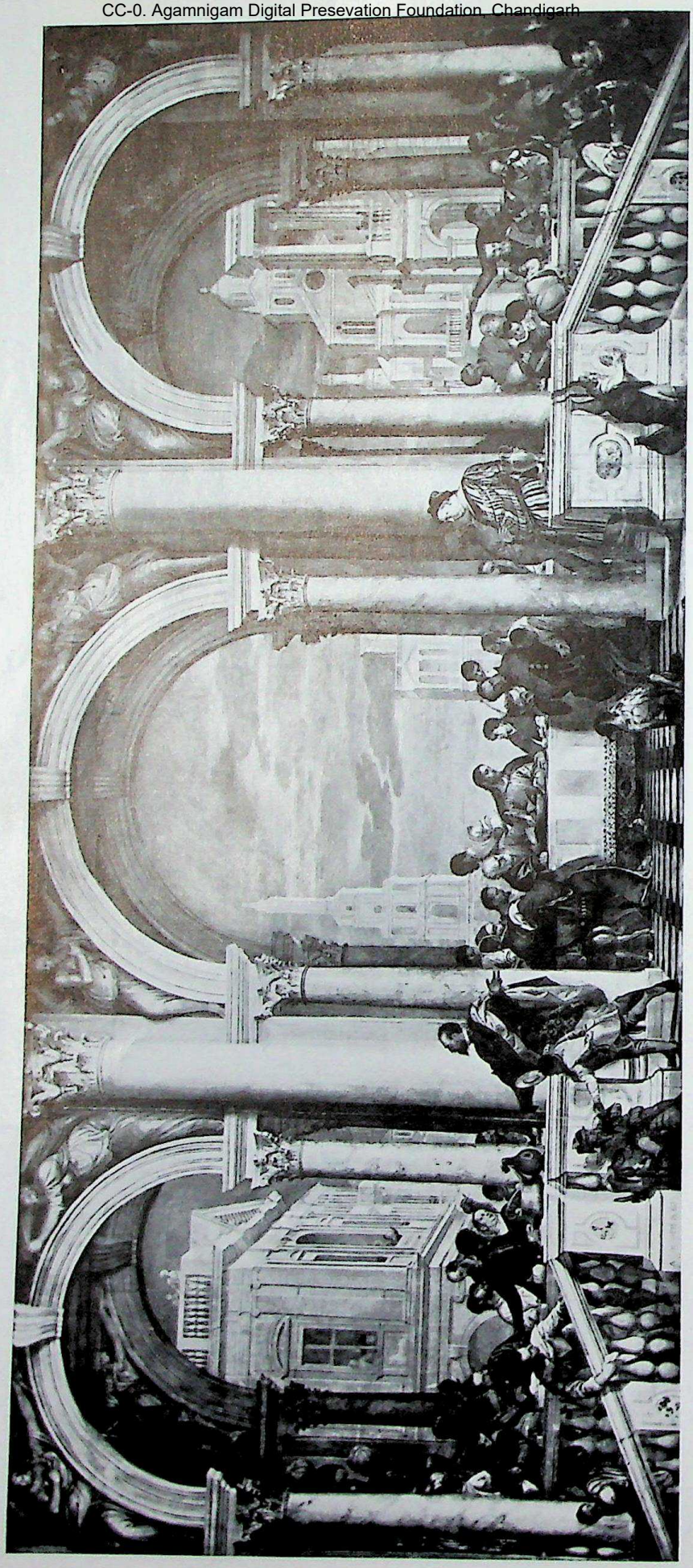
Pl. 346. Donna Giustiniani Barbaro with child and old nurse. Fresco. Maser, near Treviso, Italy, Villa Barbaro (now Volpi).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 347. The Adoration of the Magi, two details. Canvas; full size, 10 ft., 6 in. × 7 ft., 8 in. Vicenza, Italy, Sta Corona.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

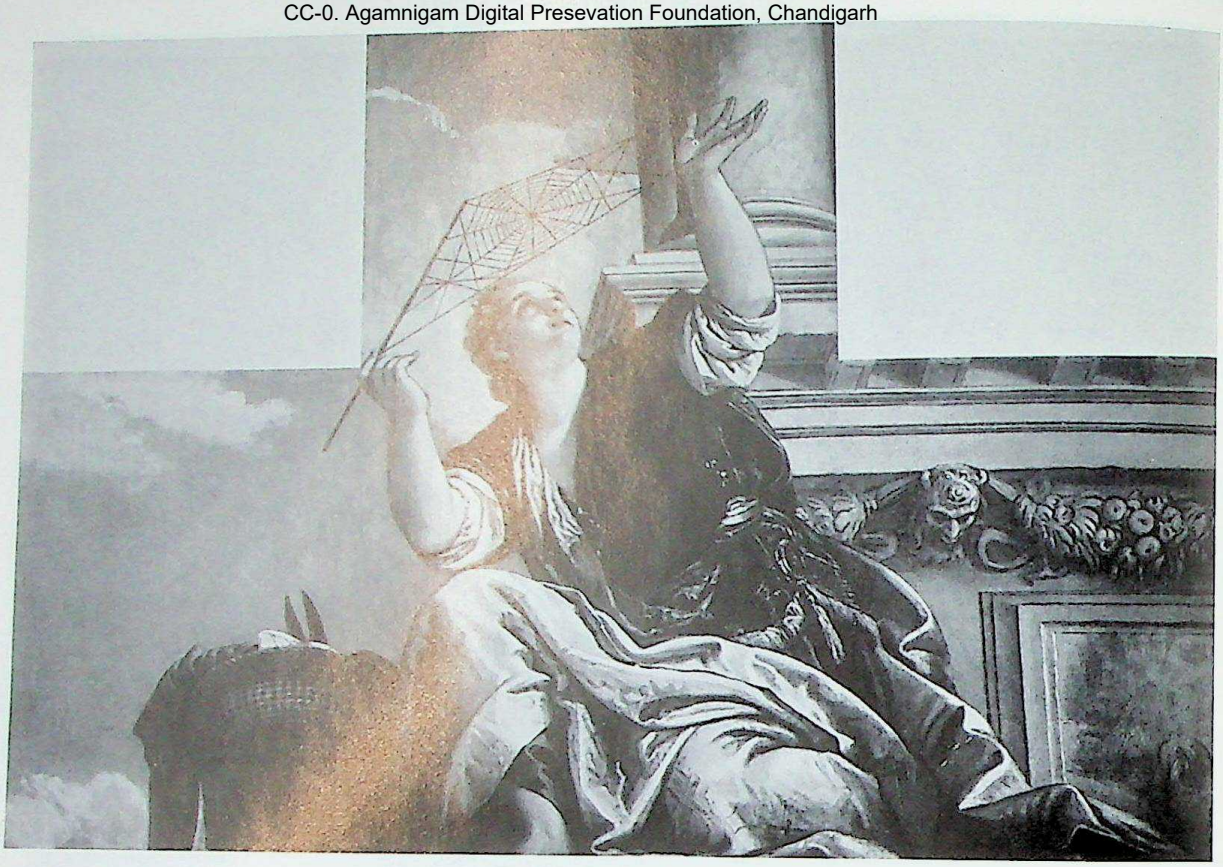


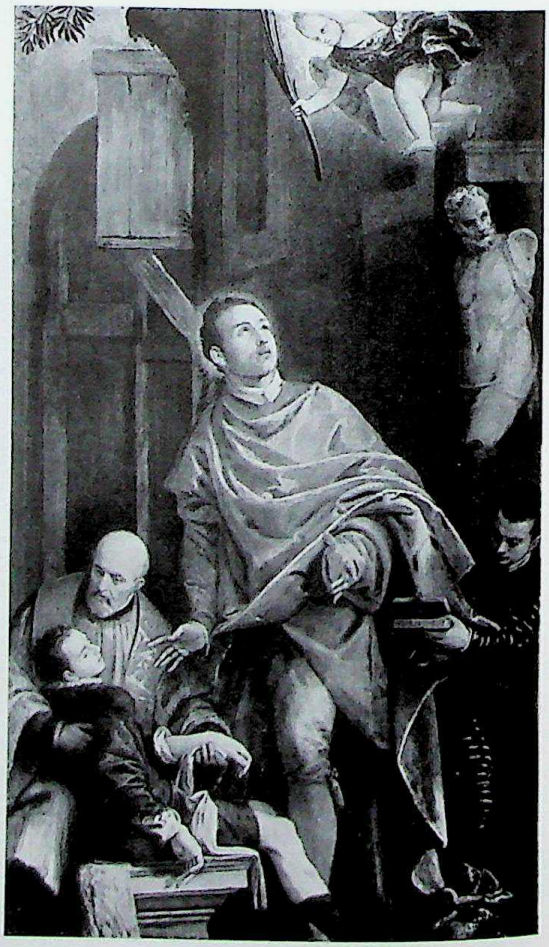
Pl. 348. The Feast in the House of Levi. Canvas, 18 ft., 2½ in. × 42 ft. Venice, Accademia. (Cf. detail, VI, pl. 67.)

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 349. *Left*: The Choice of Hercules. Canvas, 7 ft., $2^{1}/_{4}$ in. × 5 ft., $6^{3}/_{4}$ in. New York, Frick Coll. *Right*: The Finding of Moses. Canvas, $19^{3}/_{4} \times 16^{7}/_{8}$ in. Madrid, Prado.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



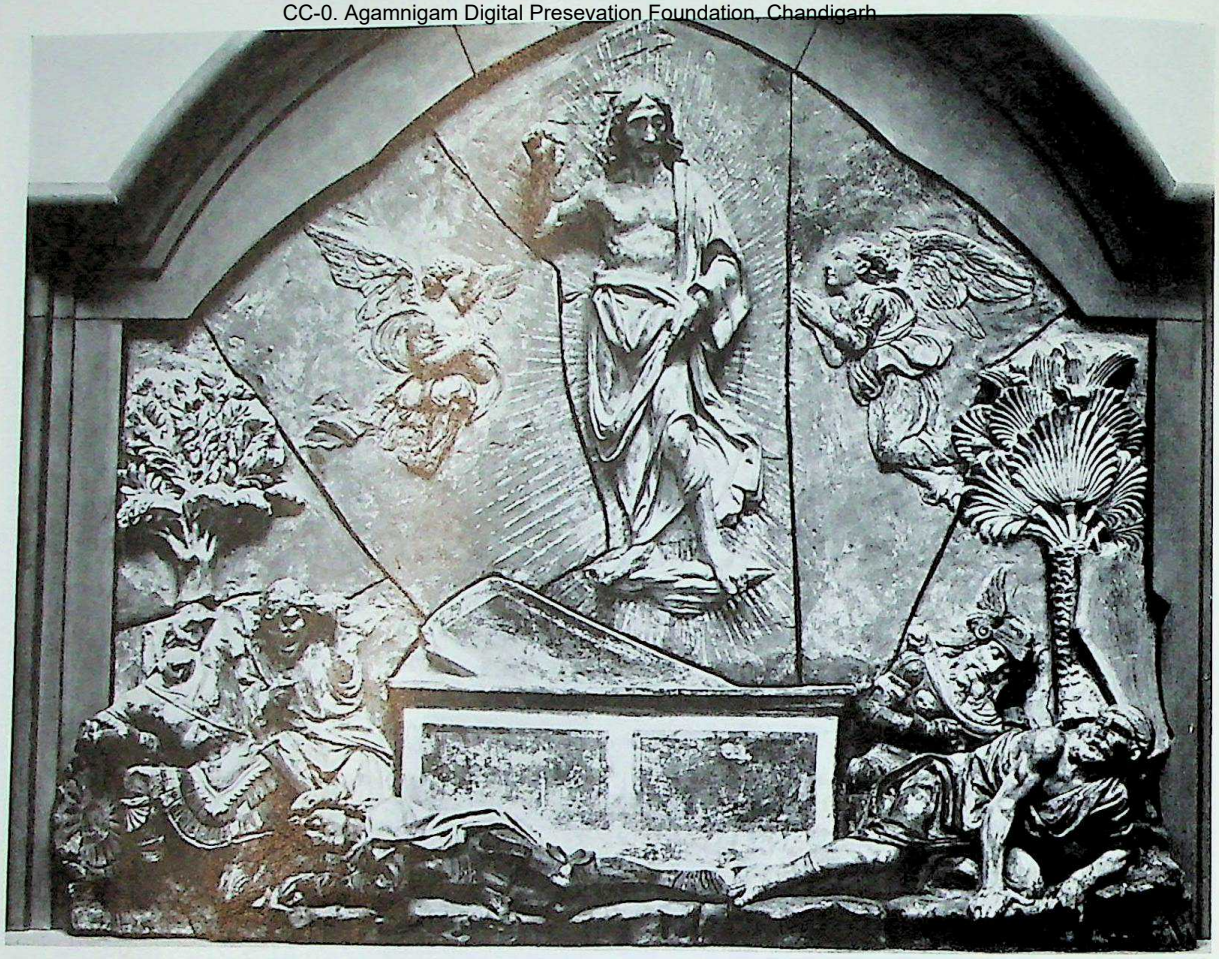


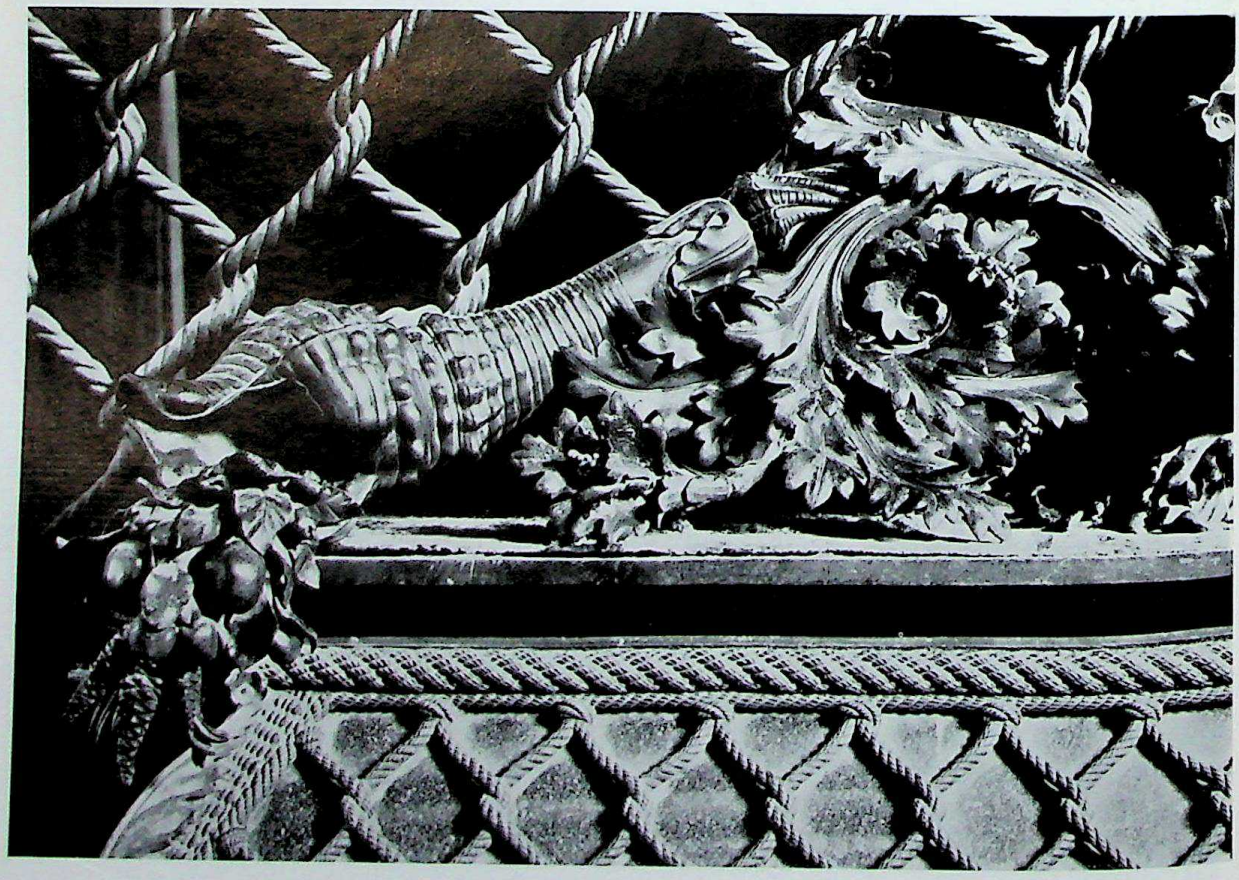
Pl. 350. *Above*: Dialectic. Canvas, 4 ft., 11 in. × 7 ft., 2½ in. Venice, Doges' Palace. *Below, left*: The Martyrdom of St. George. Canvas, 14×10 ft. Verona, Italy, S. Giorgio in Braida. *Right*: St. Pantaleon Healing a Sick Boy. Canvas, 9 ft., 1 in. × 5 ft., 3 in. Venice, S. Pantalon.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 351. Lavabo. Marble. Florence, S. Lorenzo, Old Sacristy.

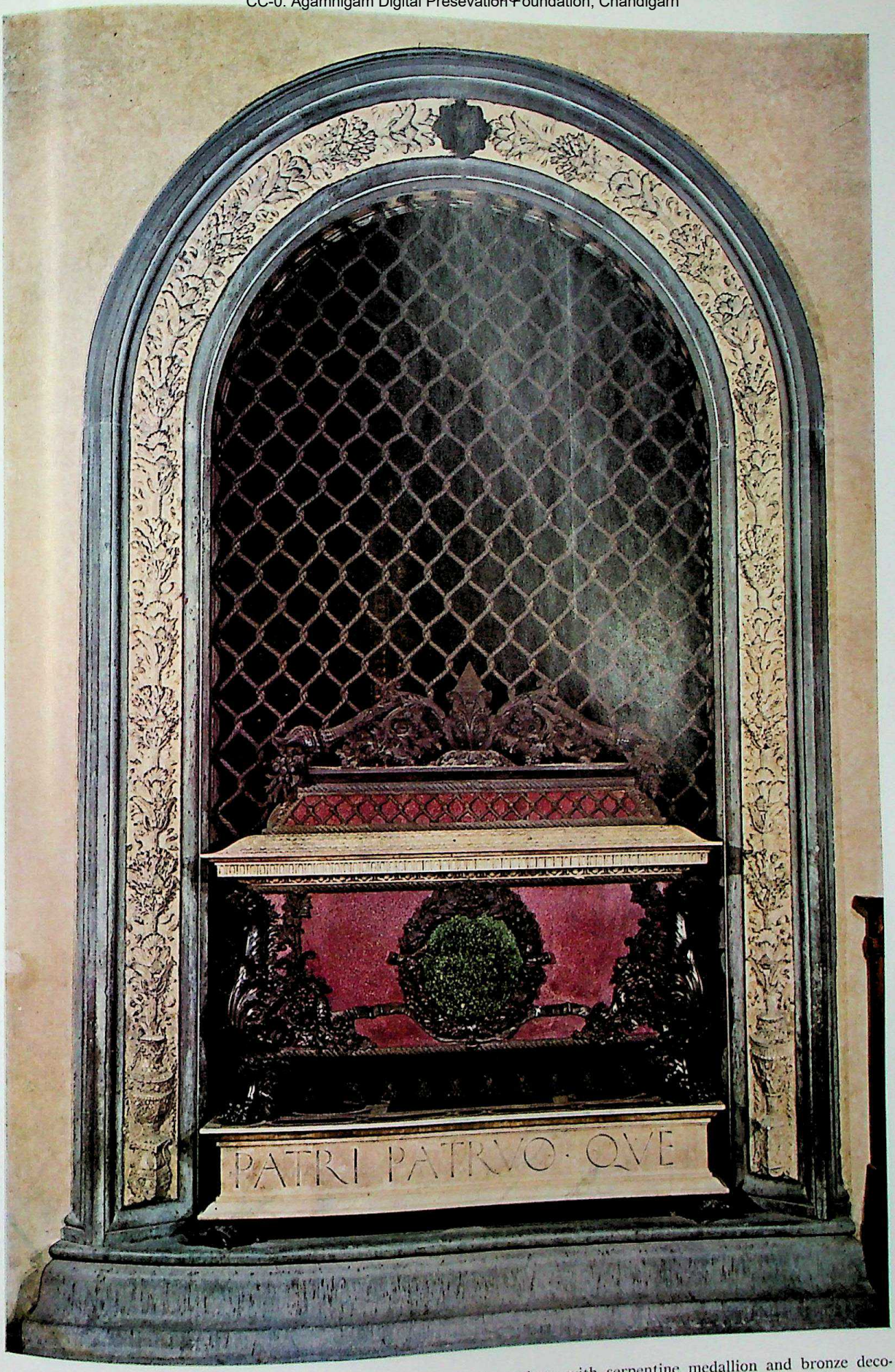
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 352. *Above*: The Resurrection. Terra cotta, 4 ft., 5 1/8 in. × 4 ft., 11 1/8 in. Florence, Museo Nazionale. *Below*: Detail of the tomb of Piero and Giovanni de' Medici (PL. 353).

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 353. Tomb of Piero and Giovanni de' Medici. Marble and porphyry with serpentine medallion and bronze decoration. Florence, S. Lorenzo, Old Sacristy.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 354. *Above, left*: David. Bronze, ht., 4 ft., 1 5/8 in. Florence, Museo Nazionale. *Right*: Angel. Terra cotta, 15×13 3/4 in. Paris, Louvre. *Below*: The Decollation of the Baptist. Silver. Florence, Museo dell'Opera del Duomo.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 355. Putto with a Fish, detail. Bronze; full ht., 27 1/8 in. Florence, Palazzo Vecchio, courtyard.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 356. The Baptism of Christ. Panel, 5 ft., 9⅝ in. × 4 ft., 11½ in. Florence, Uffizi.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 357. Bust of a Lady. Marble, ht., 24 in. Florence, Museo Nazionale.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 358. The Doubting of Thomas. Bronze. Florence, Orsanmichele.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 359. Equestrian monument to Bartolommeo Colleoni. Bronze. Venice, Campo SS. Giovanni e Paolo.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 360. The Madonna and Child. Panel, $28^{3}/_{8} \times 20^{7}/_{8}$ in. Berlin, Staatliche Museen.

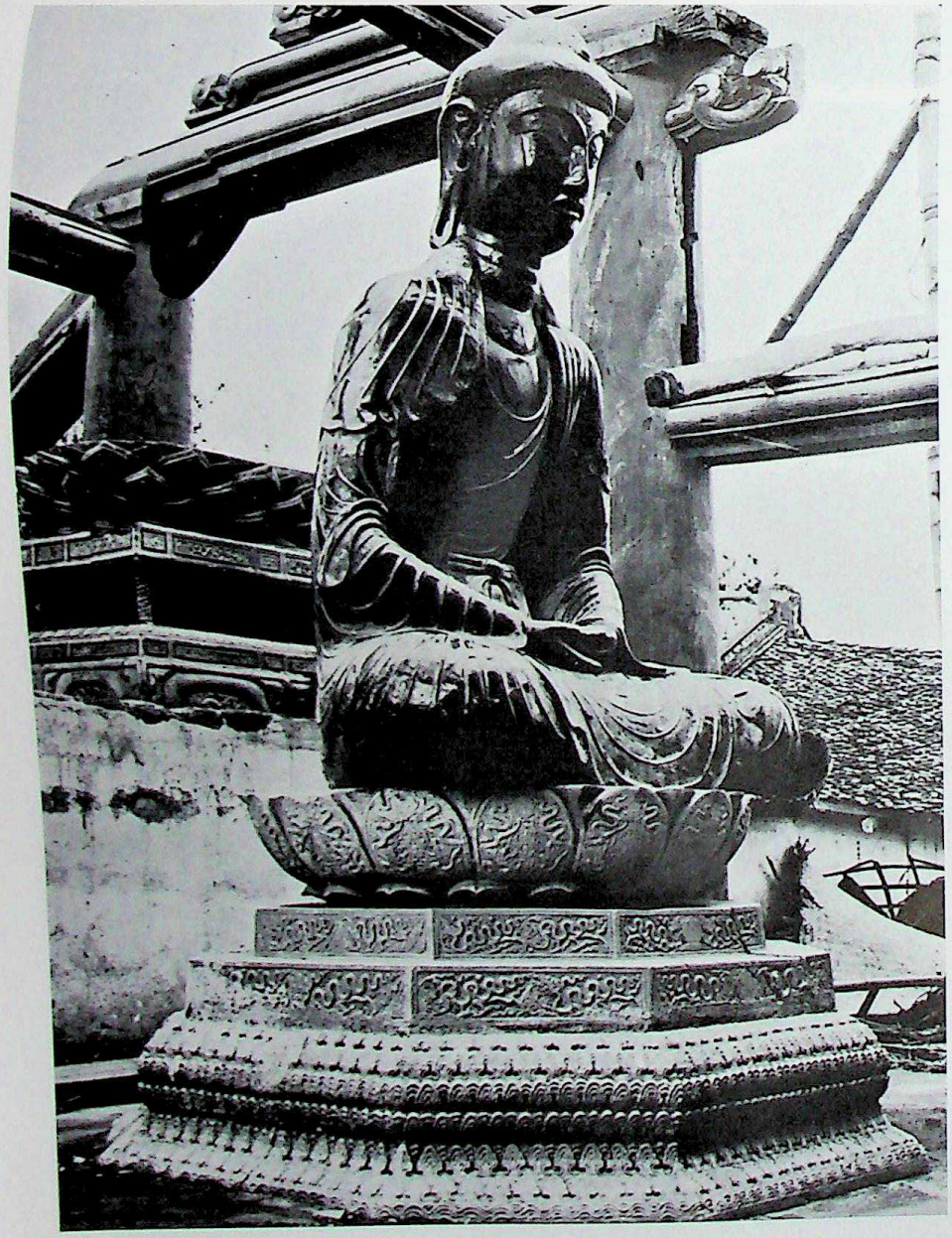
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 361. *Above*: Drum, Đông-son culture, 3d–2d cent. B.C. Bronze, ht., 22¹/₄ in. Formerly, Hanoi, Musée Louis Finot. *Below*: Bronzes from Thanh-hoa province. *Left*: Lamp holder, 1st–3d cent. Ht., 12¹/₄ in. Hanoi, Musée d'Histoire du Viet Nam (former Musée Louis Finot). *Right*: Mirror, ca. 2d cent. Diam., 4³/₄ in. Formerly, Hanoi, Musée Louis Finot.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

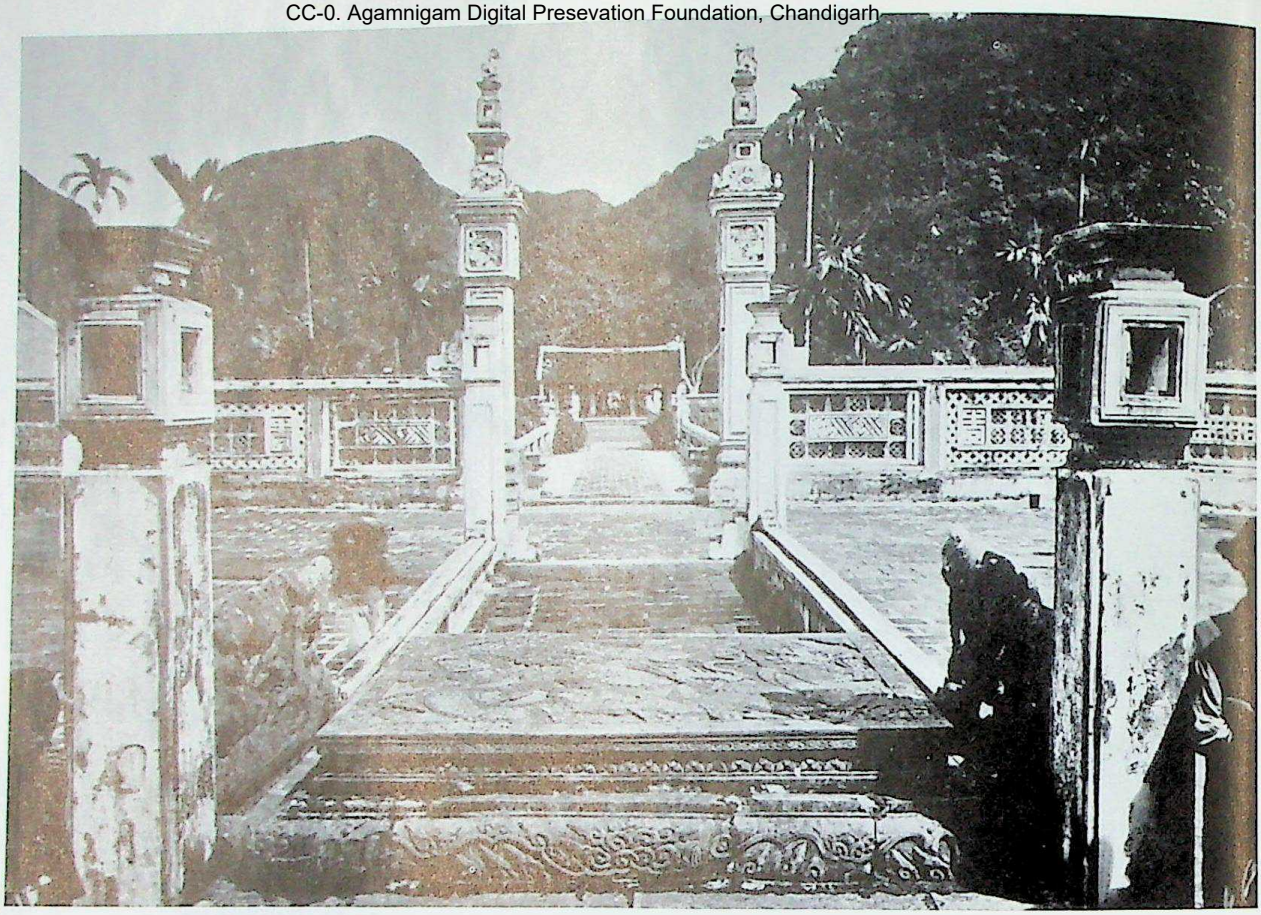
Pl. 362. Sculpture from the Van-phúc temple, Phat-tich, Bac-ninh province, 9th–11th cent. *Left*: Harpy (*kinnara*). Sandstone, ht., 15¼ in. *Right*: Lokapala. Sandstone, ht., 20⅞ in. Both, Hanoi, Musée d'Histoire du Viet Nam.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 363. *Left*: The buddha Amitābha, in the sanctuary of the Vạn-phúc temple, Phat-tich, Bac-ninh province, 11th cent. *Right*: Portrait of the monk Minh-hạnh, stupa of Trach-lam, Thanh-hoa province, ca. 1660.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

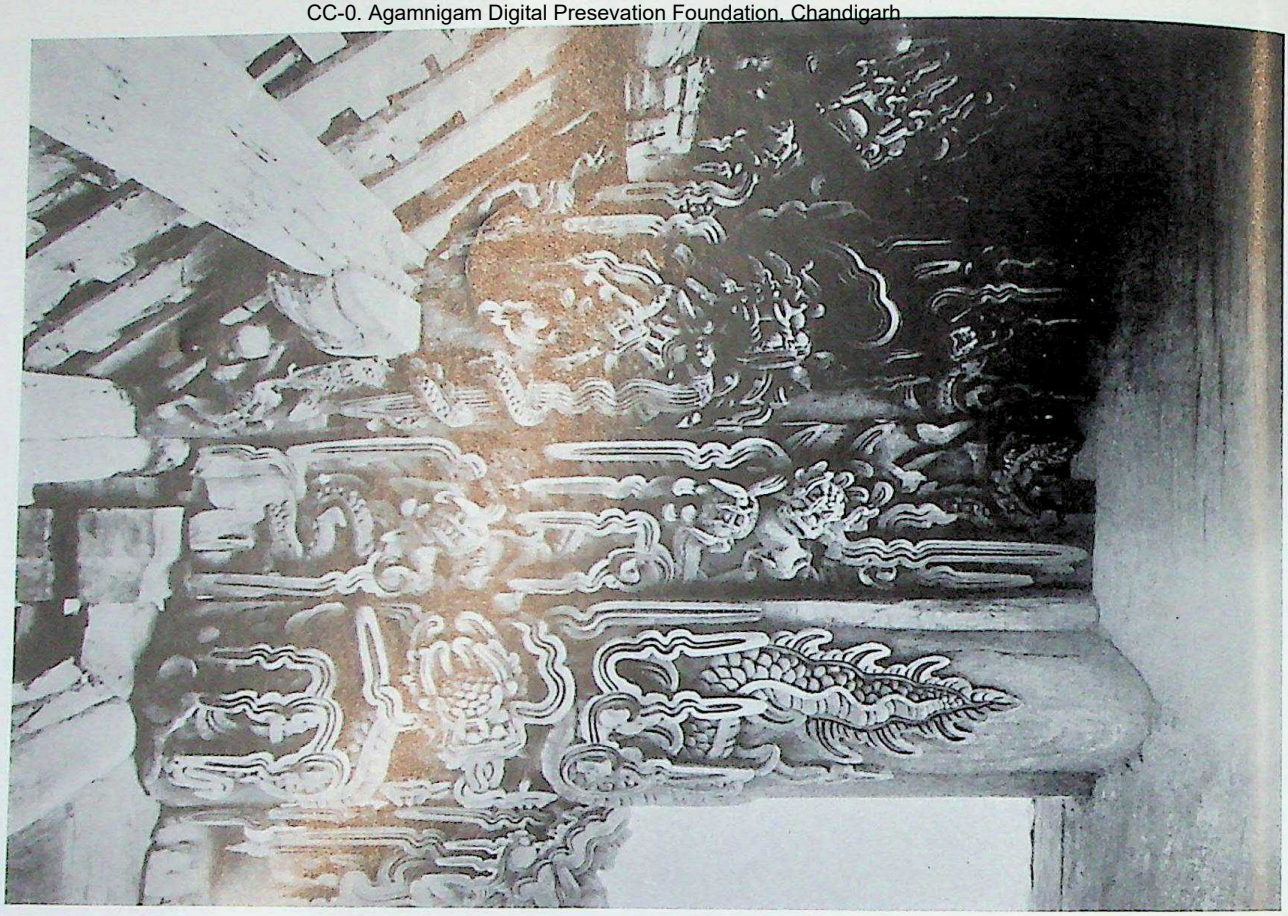


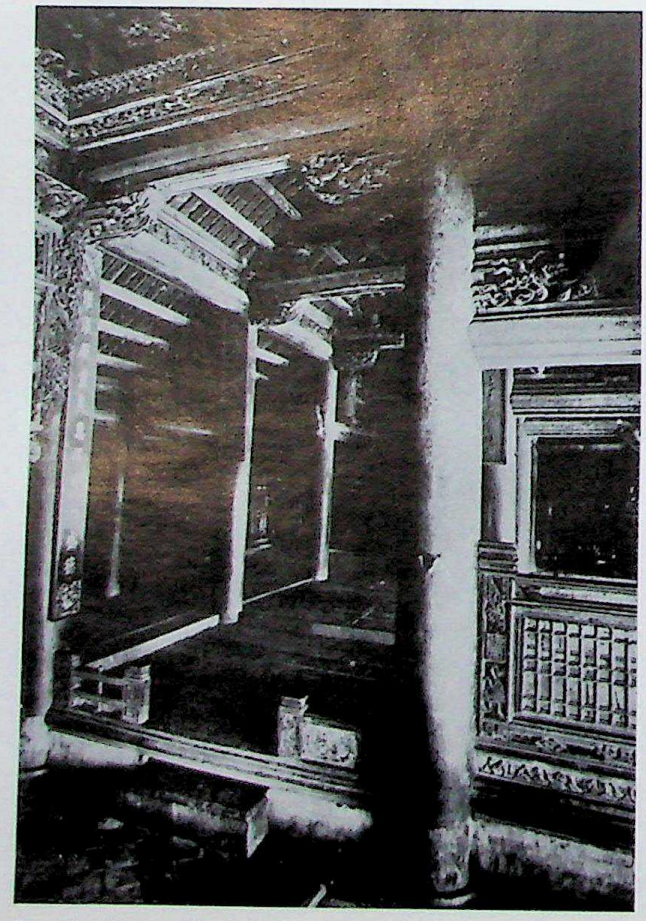
Pl. 364. *Above*: Hoa-lu, Ninh-binh province, the Đinh dynasty temple, ca. 1607–10. *Below*: But-thap, Bac-ninh province, balustrade and bridge of the Ninh-phúc temple, 1646–47.

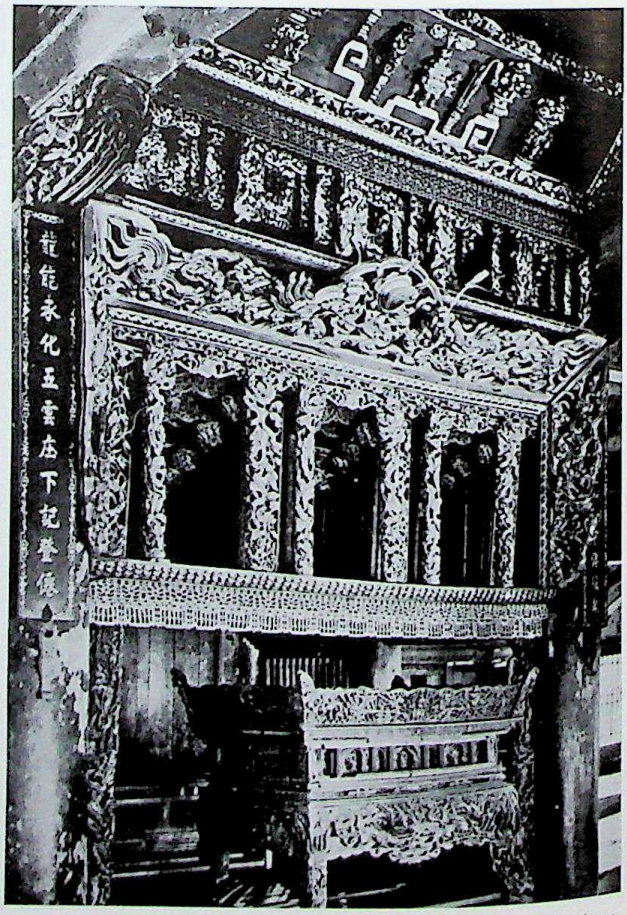
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 365. *Above*: Chu-quyen, Son-tay province, the *đình*, prior to the 19th cent. *Below*: Bac-ninh province, Phù-đổng temple, pagoda on the *đình* pond, prior to the 19th cent.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

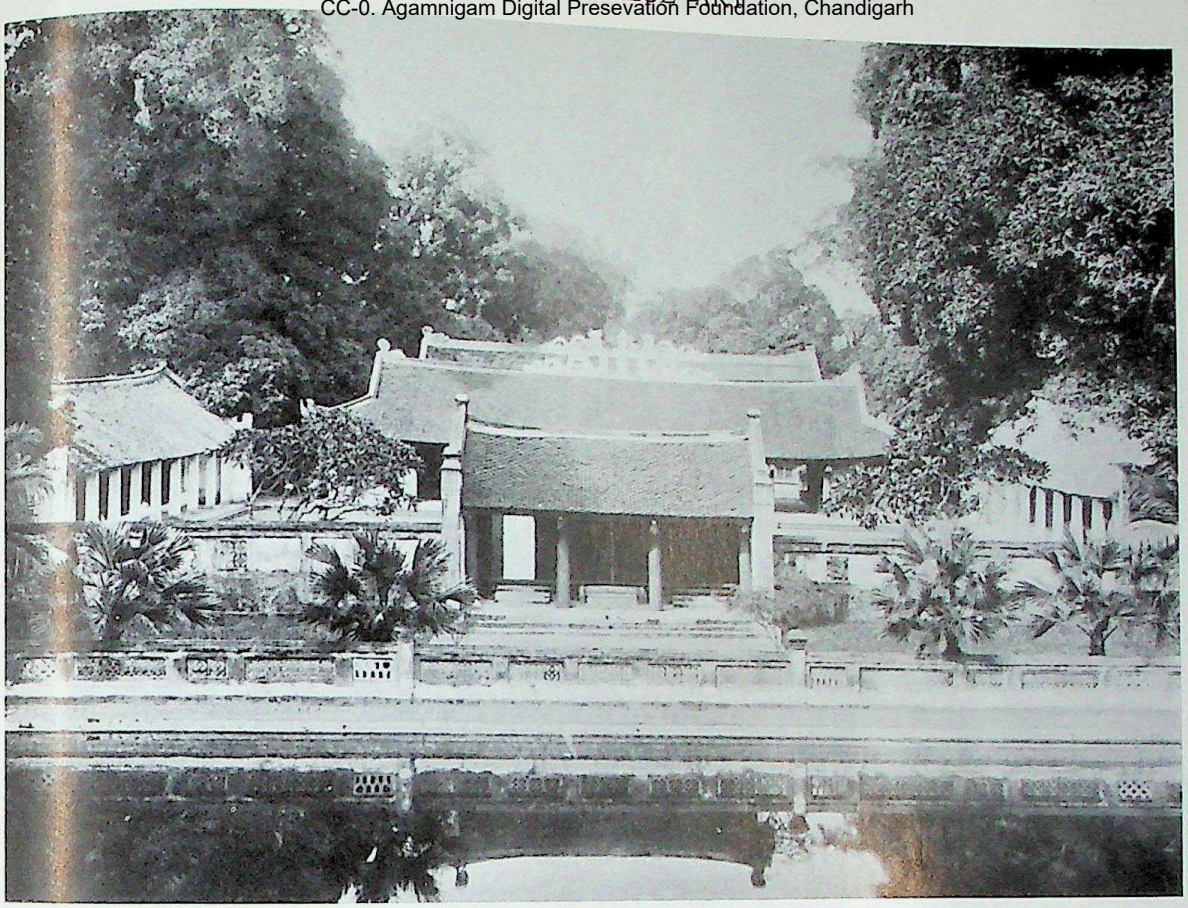


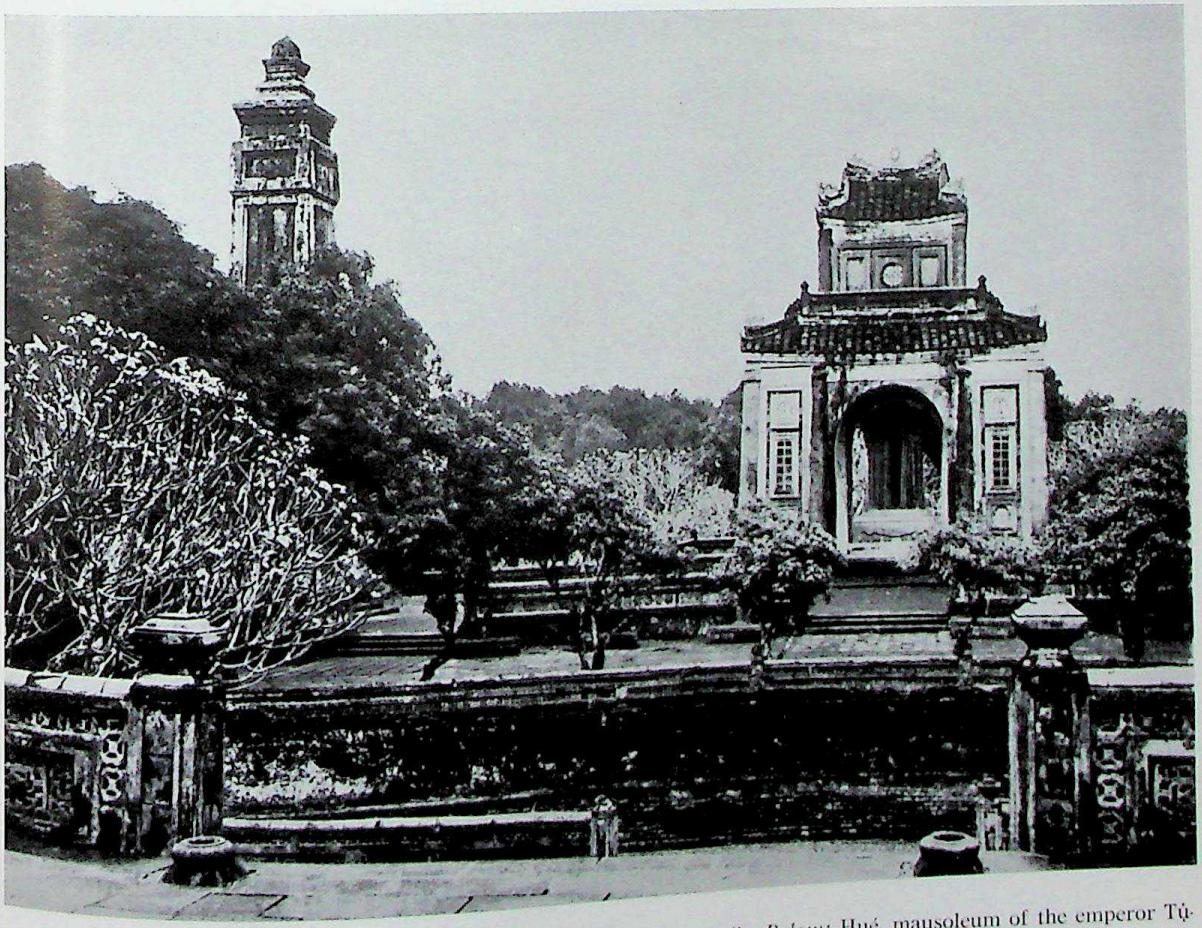




Pl. 366. *Above*: Tho-ha, Bac-giang province, carved timberwork in the Buddhist temple, prior to the 19th cent. *Below, left*: Dinh-bang, Bac-ninh province, the *đình*, timberwork, 1736. *Right*: Tho-ha, Bac-giang province, interior of the *đình*.

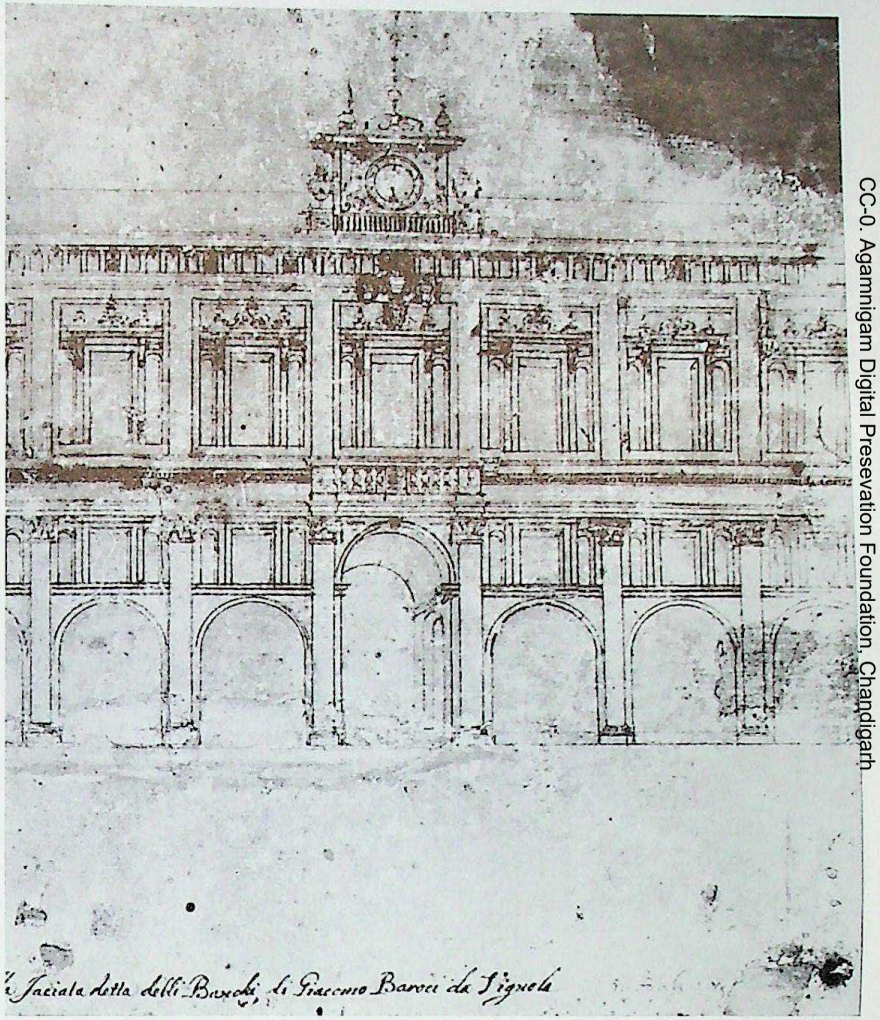
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





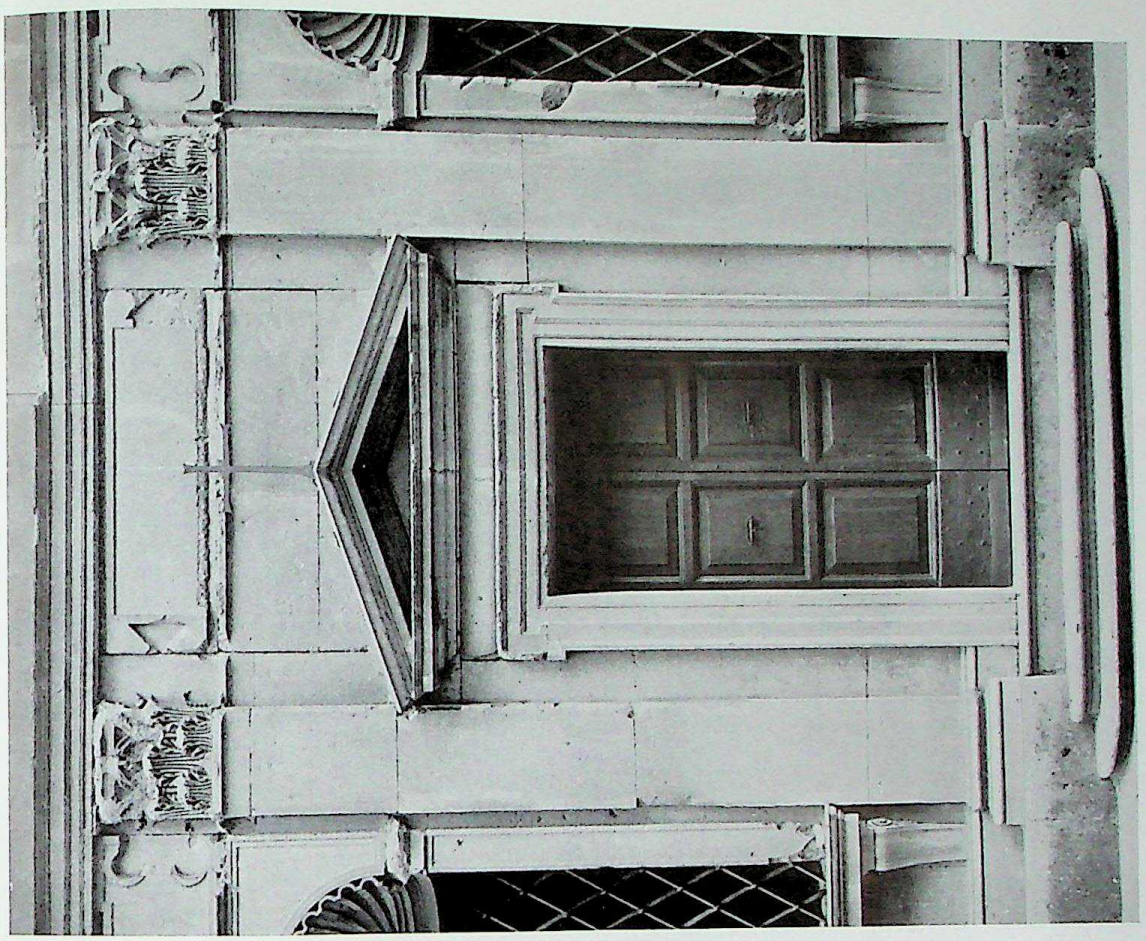
Pl. 367. *Above*: Hanoi, the *văn-miếu*, founded 1070 and frequently rebuilt. *Below*: Hué, mausoleum of the emperor Tự-dức, 19th cent.

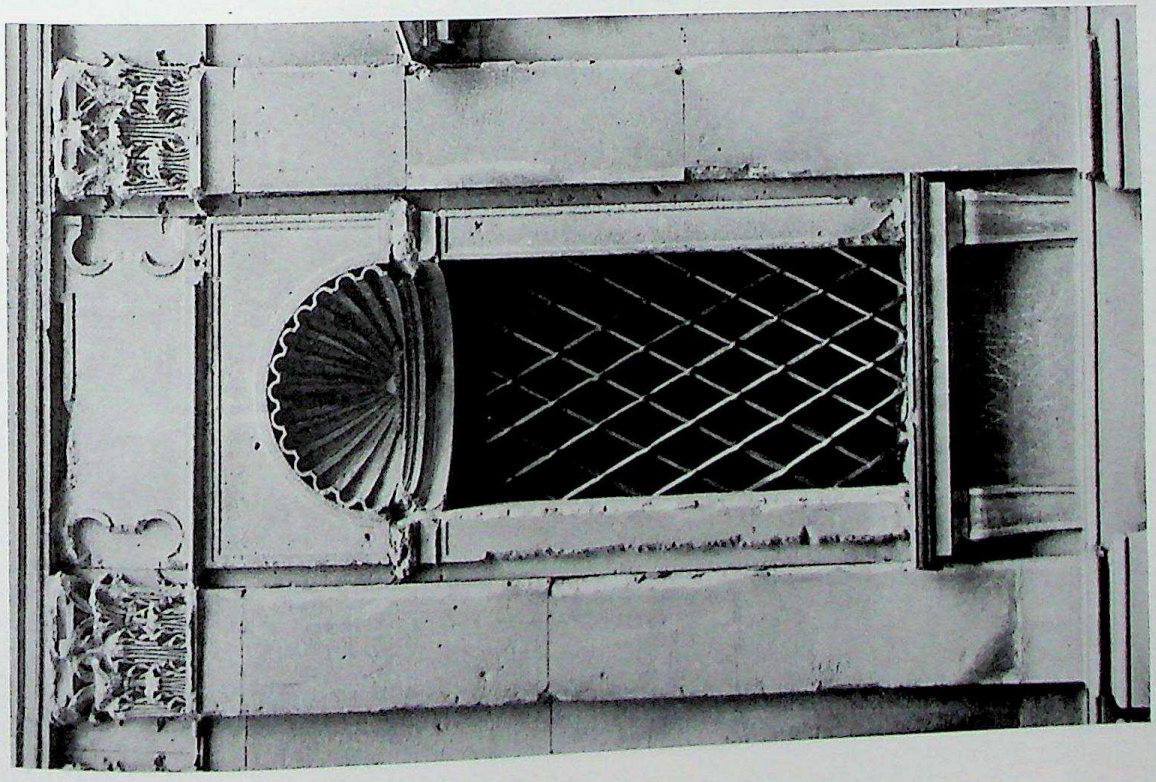
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 368. *Left*: Unexecuted project for the façade of S. Petronio, Bologna. Pen drawing, 38 1/4 × 38 1/8 in. Bologna, Museo di S. Petronio. *Right*: Project for the façade of the Palazzo dei Banchi, Bologna, detail. Pen drawing. Berlin, Kupferstichkabinett.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



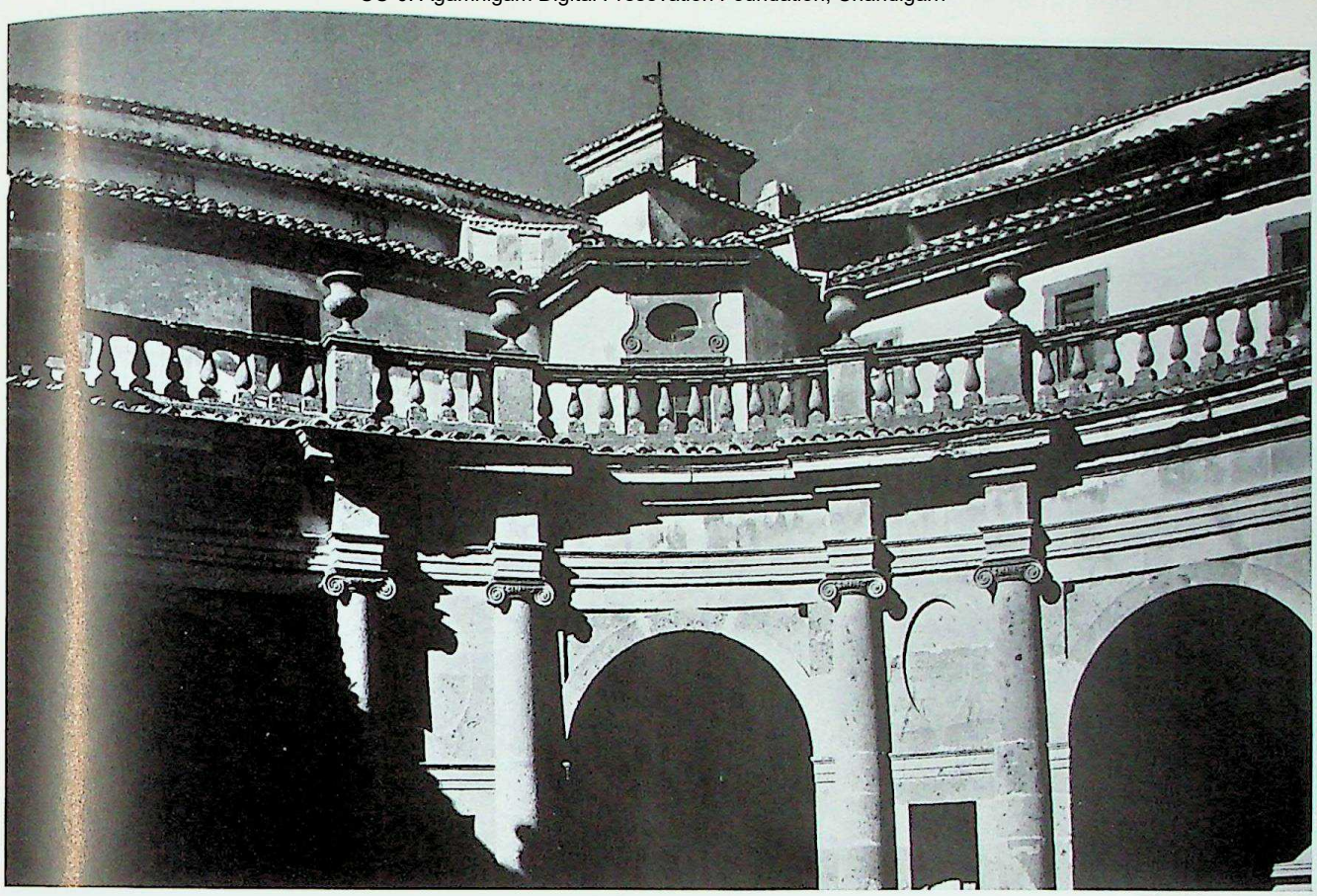


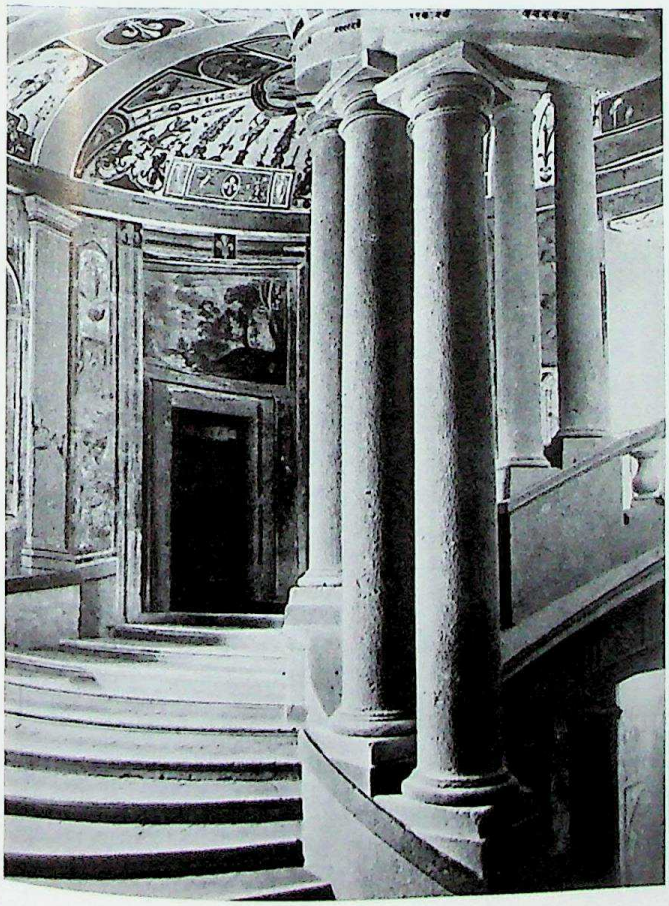
Pl. 369. Rome, S. Andrea in Via Flaminia, details of the façade.

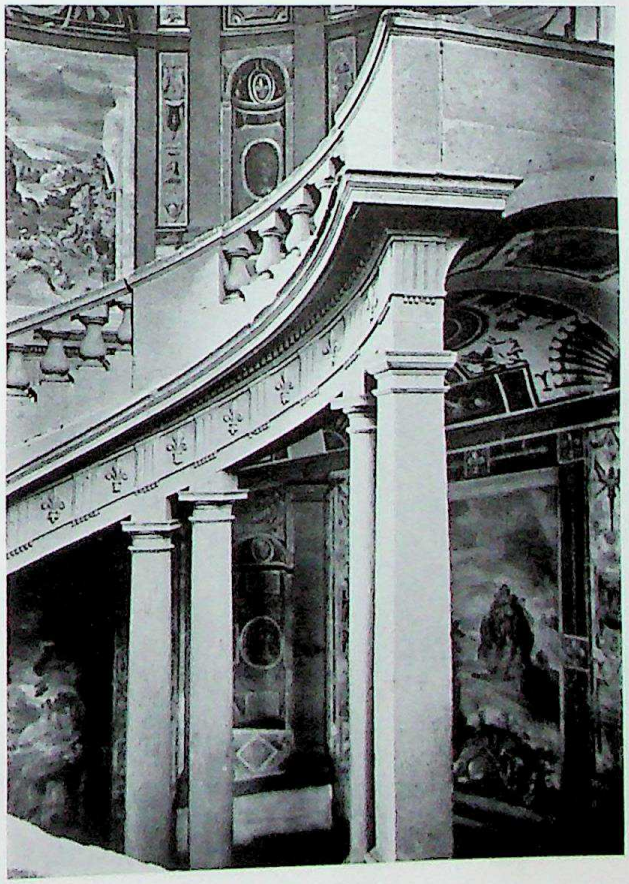
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 370. Rome, Villa Giulia, detail of the façade.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

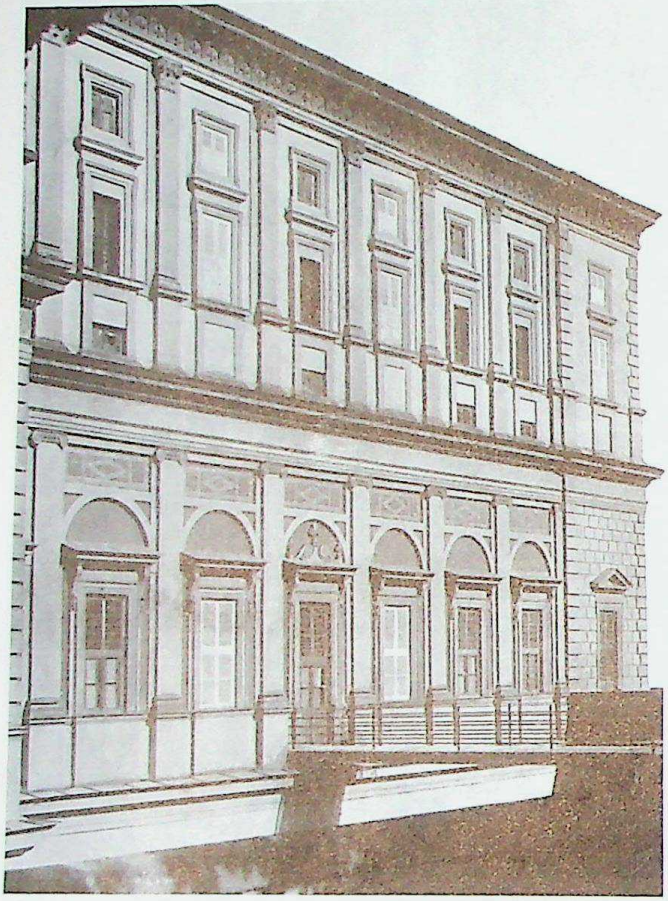


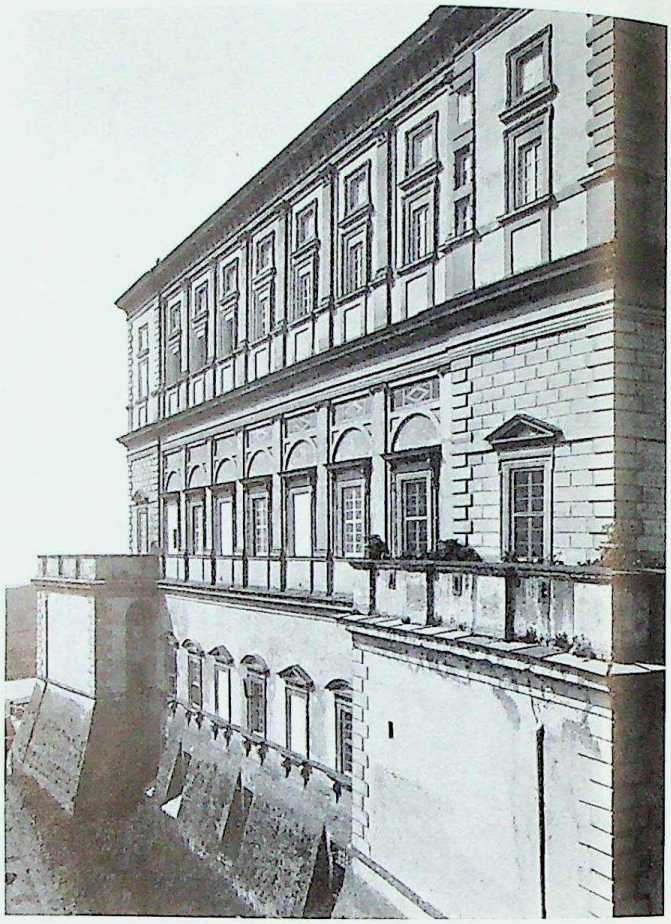




Pl. 371. Caprarola, Italy, Palazzo Farnese. *Above*: View of loggia and upper stories from the central court. *Below*: Details of the spiral staircase

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 372. *Above*: Caprarola, Italy, Palazzo Farnese, two of the five sides. *Below*: Bologna, Palazzo dei Banchi, façade.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 373. *Above*: The Last Supper, detail, from the Refectory of S. Francesco, Bologna. Fresco. Bologna, Pinacoteca. *Below*: The Funeral of St. Nicholas, detail. Fresco. Udine, Cathedral.

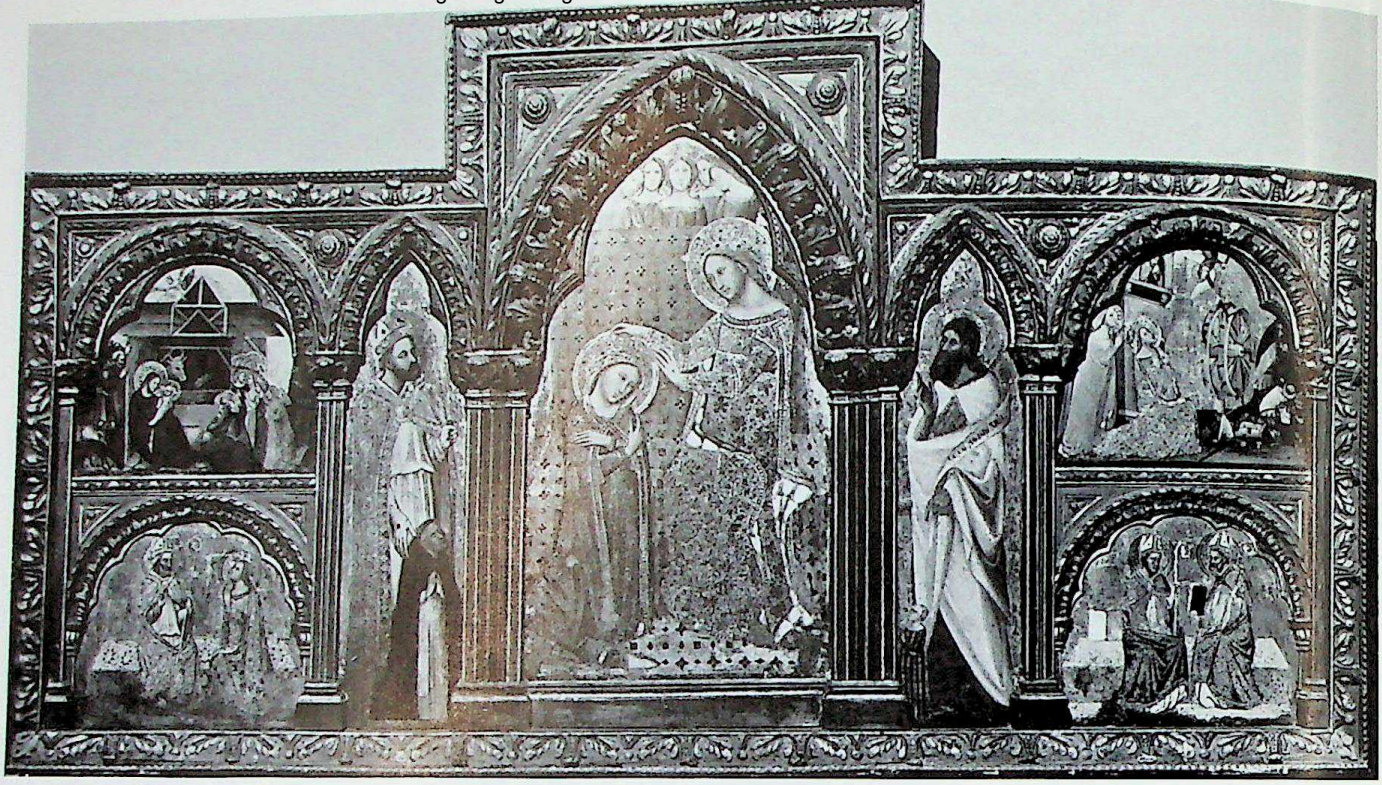
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 374. The Madonna and Child with two donors, known as the "Madonna dei Denti." Panel, 5 ft., 1 3/4 in. × 2 ft., 8 3/4 in. Bologna, Galleria Davia Bargellini.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

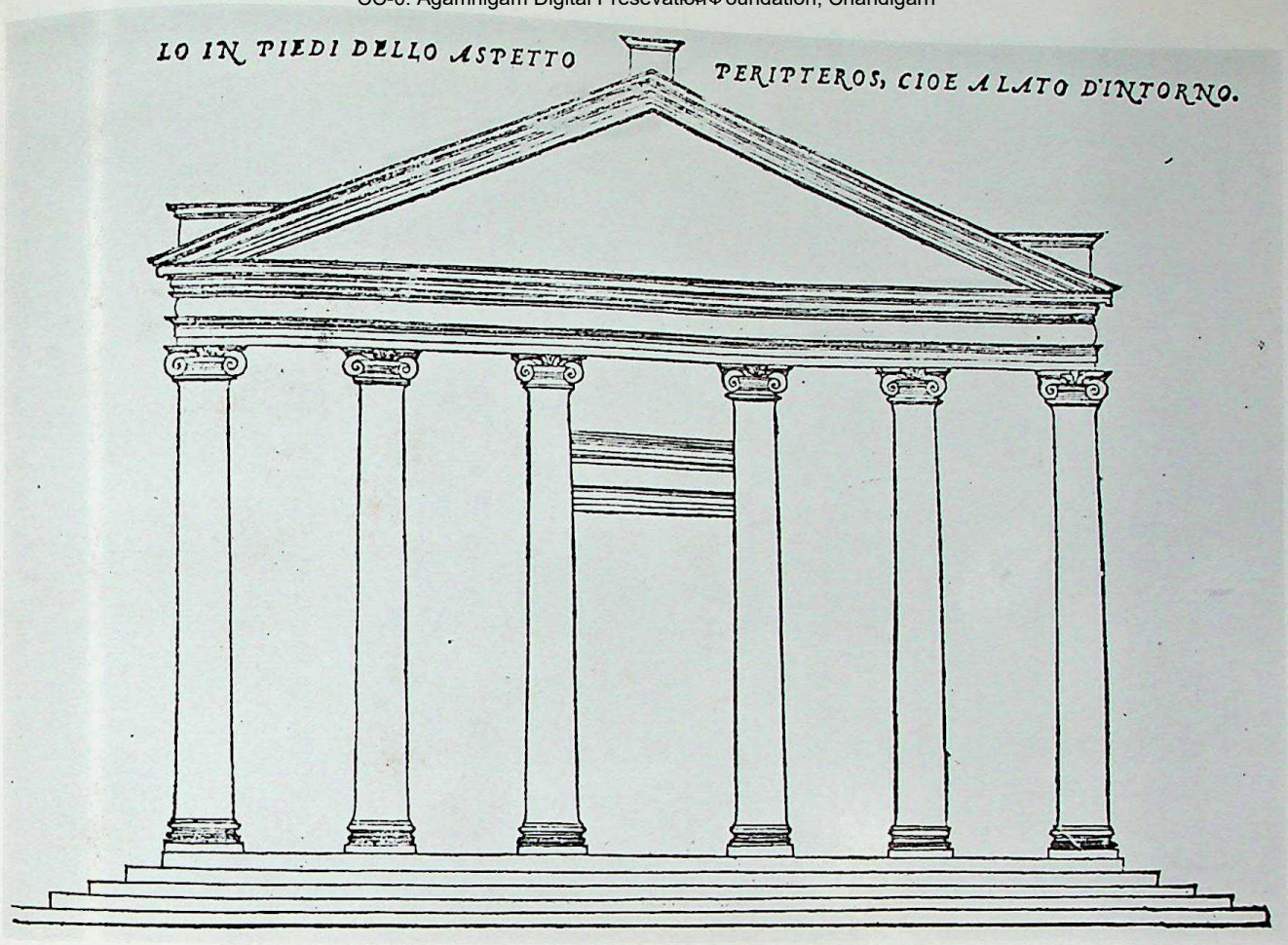
Pl. 375. St. George and the Dragon. Panel, 34¼ × 27½ in. Bologna, Pinacoteca.

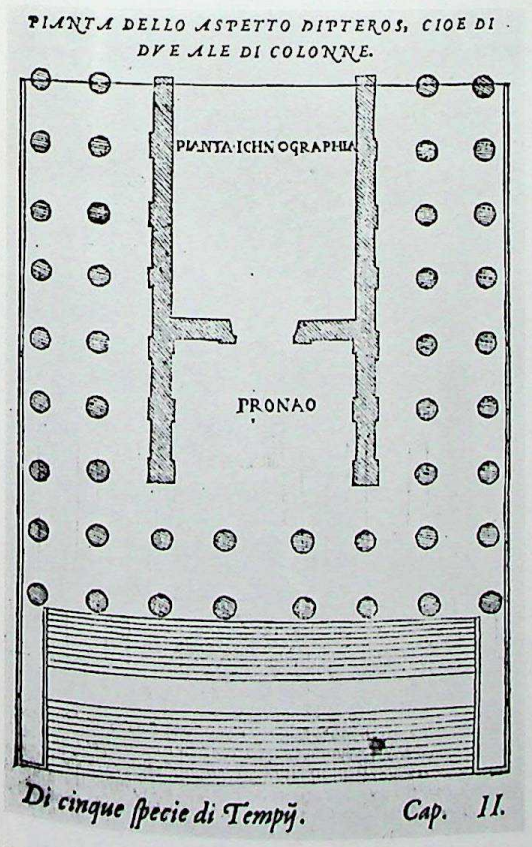
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

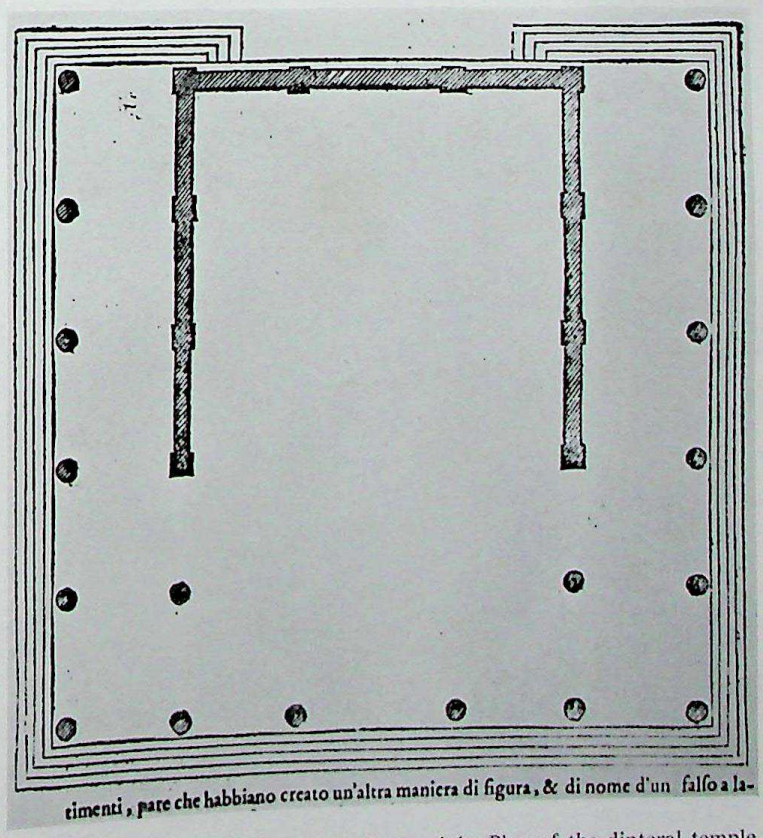


Pl. 376. *Above*: The Coronation of the Virgin, polyptych. Panel, 3 ft., 5¼ in. × 9 ft., 4½ in. Bologna, S. Salvatore. *Below*: The Nativity, from the Church of Mezzaratta (S. Apollonia), near Bologna. Fresco. Bologna, Pinacoteca.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

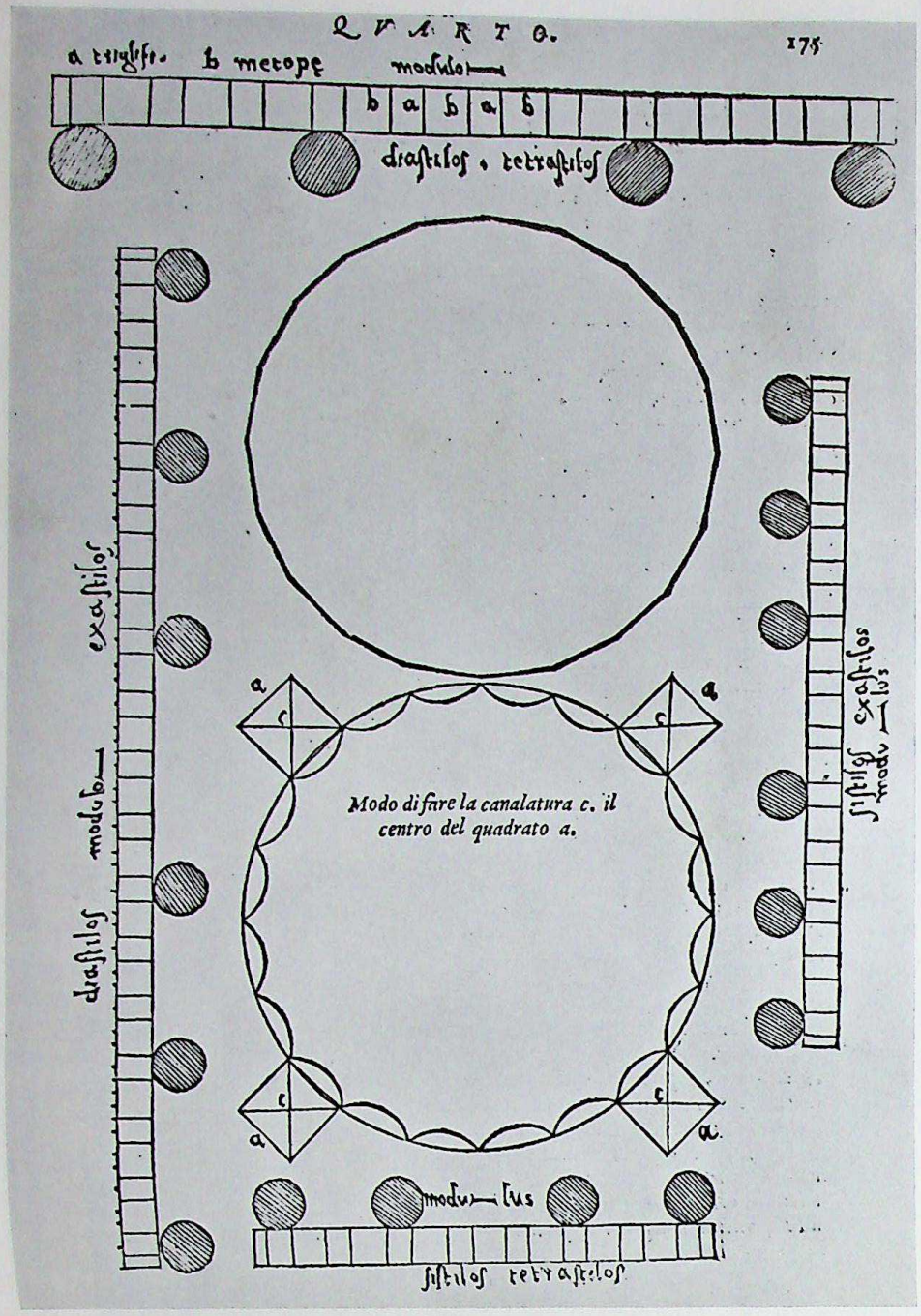


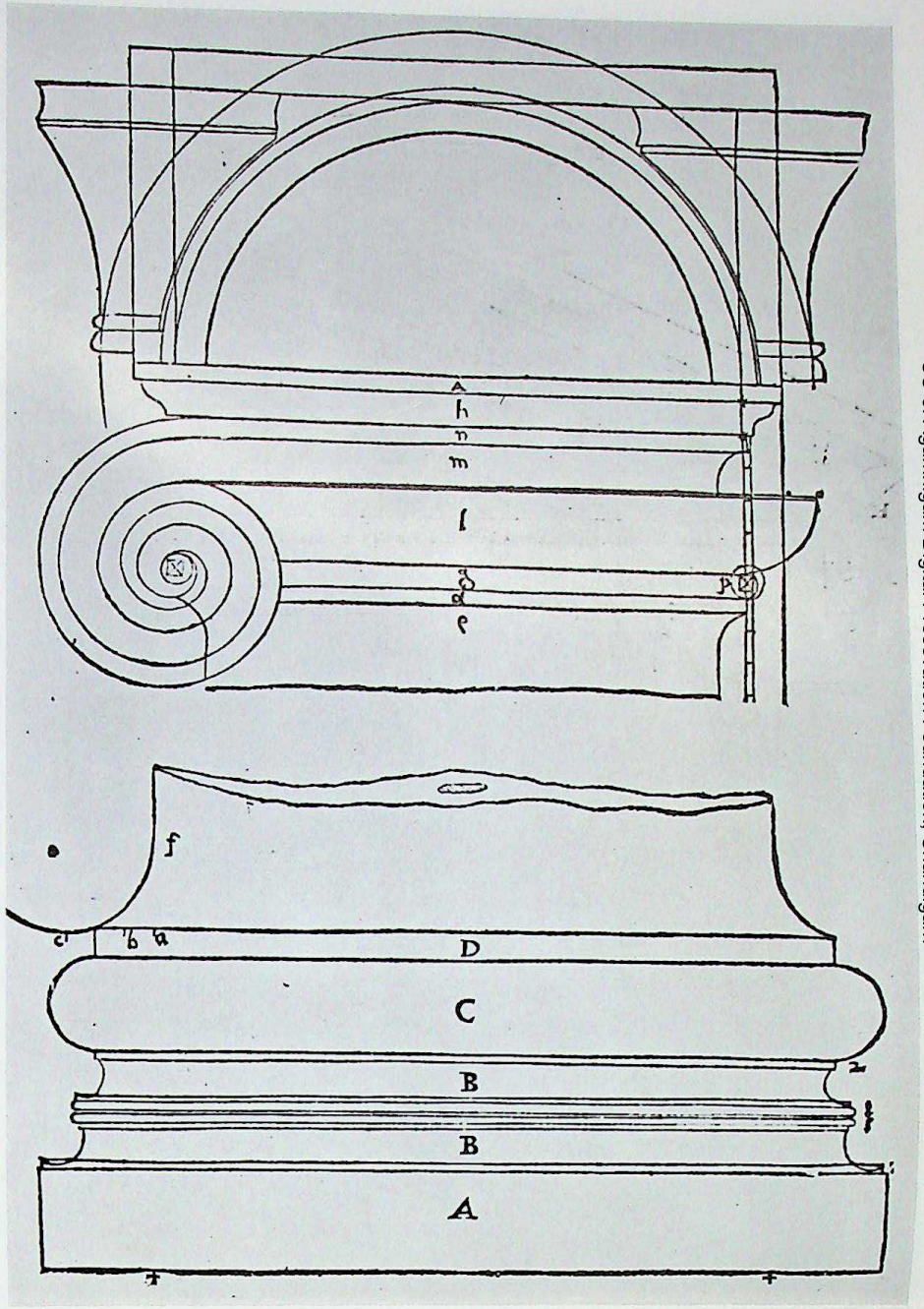




Pl. 377. *De Architectura* (ed. 1567). *Above*: Elevation of the peripteral temple, Book 3, p. 98. *Below, left*: Plan of the dipteral temple, Book 1, p. 20. *Right*: Plan of the Tuscan temple, Book 4, p. 149.

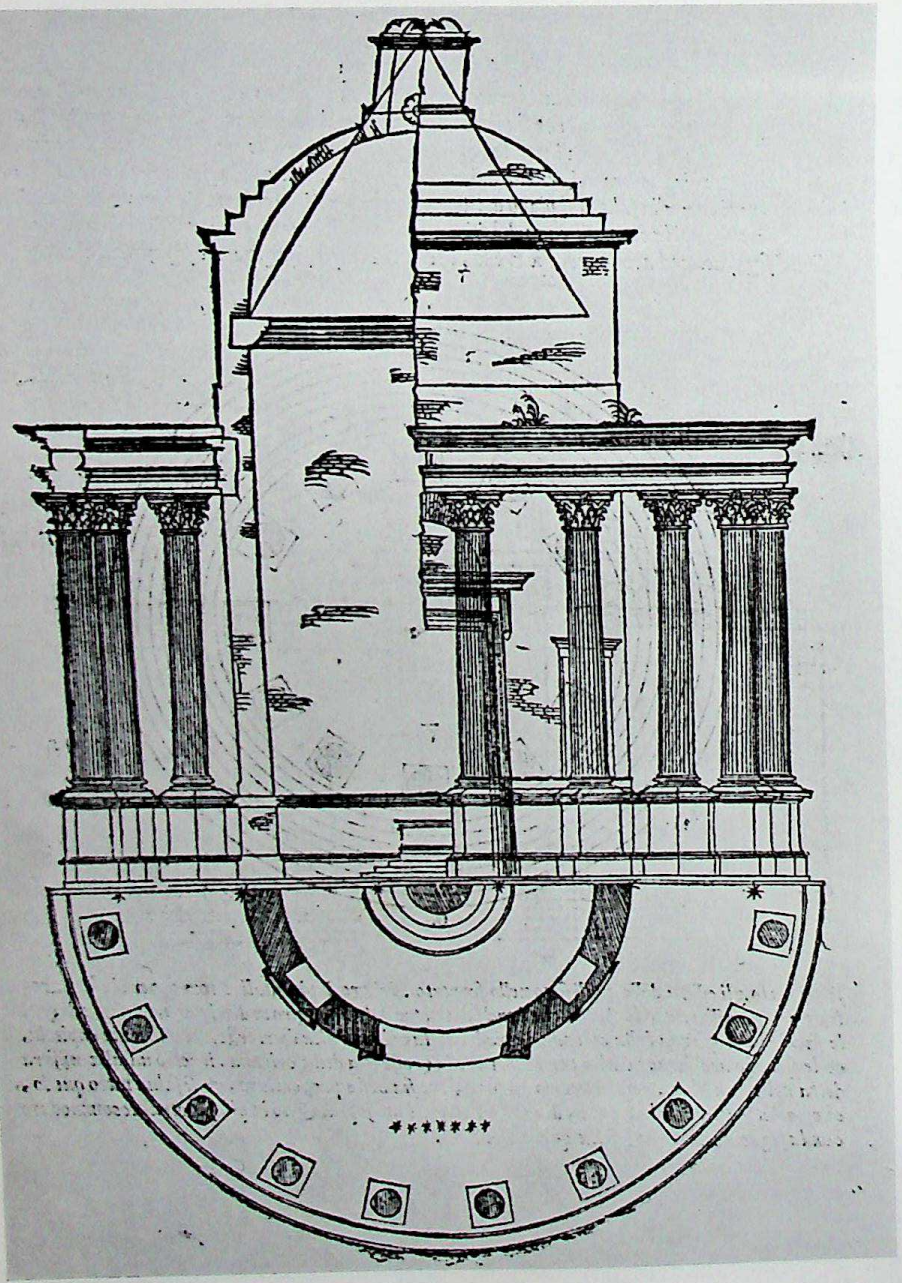
VITRUVIUS
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

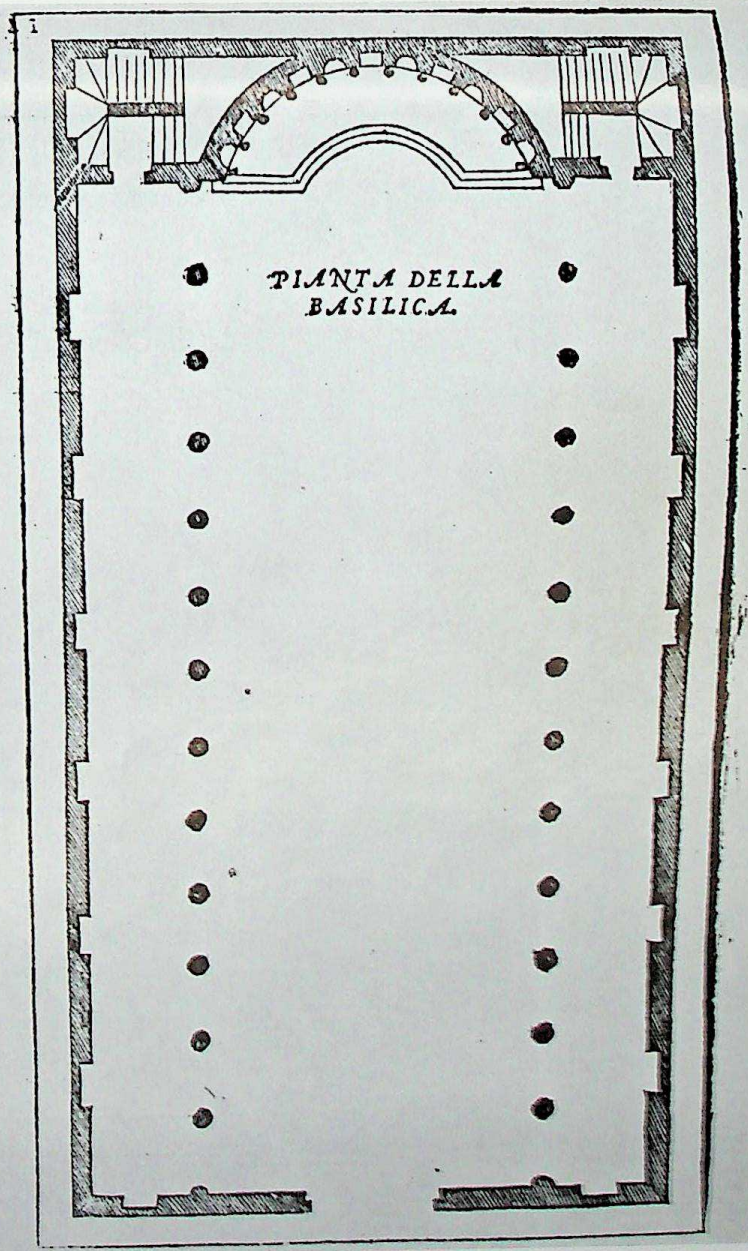




Pl. 378. *De Architectura* (ed. 1567). *Left*: Proportions of metopes and triglyphs and the fluting of columns in Doric temples, Book 4, p. 136. *Right*: Proportions of capital and base in the Ionic order, Book 3, p. 115

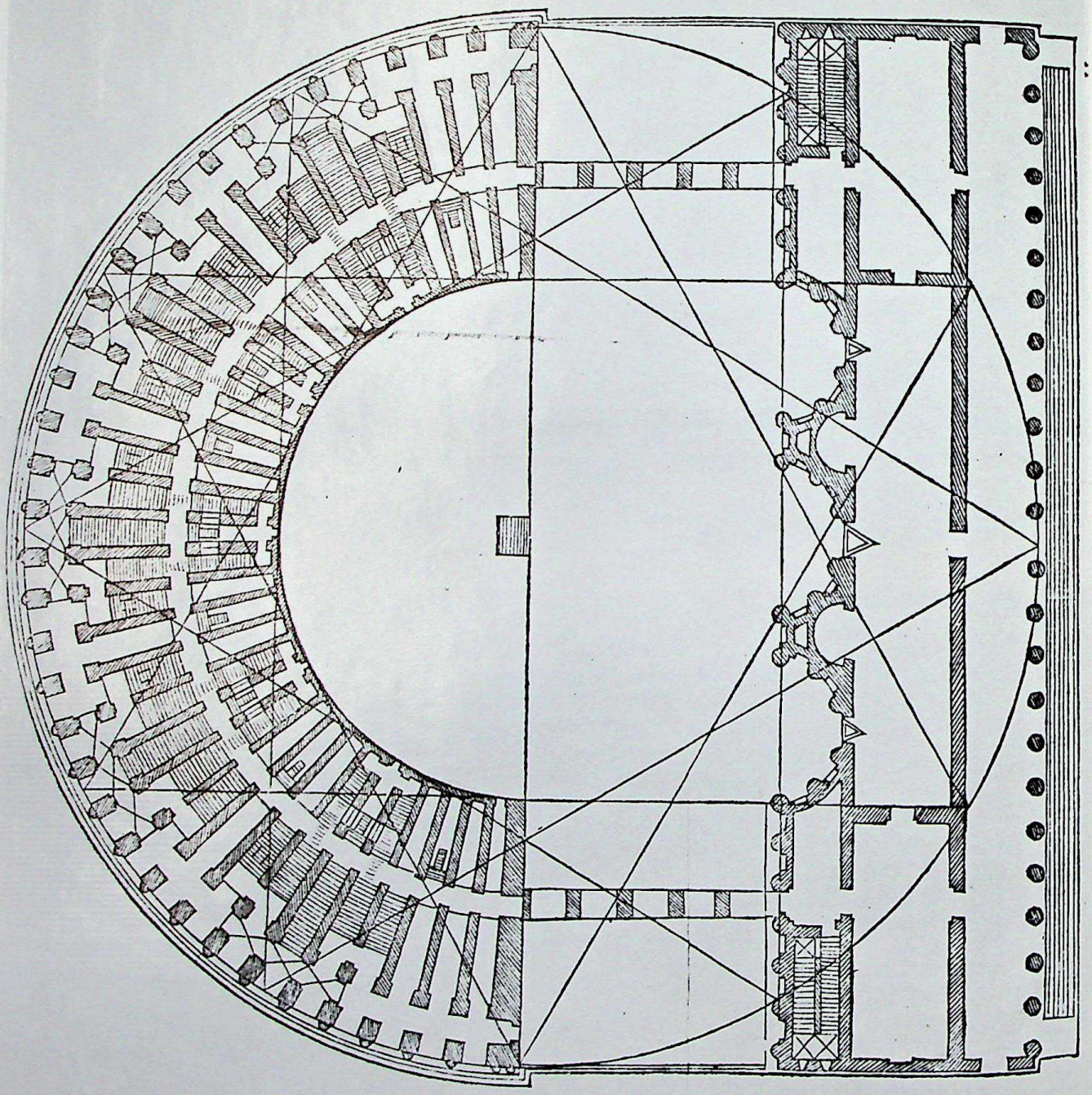
VITRUVIUS
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





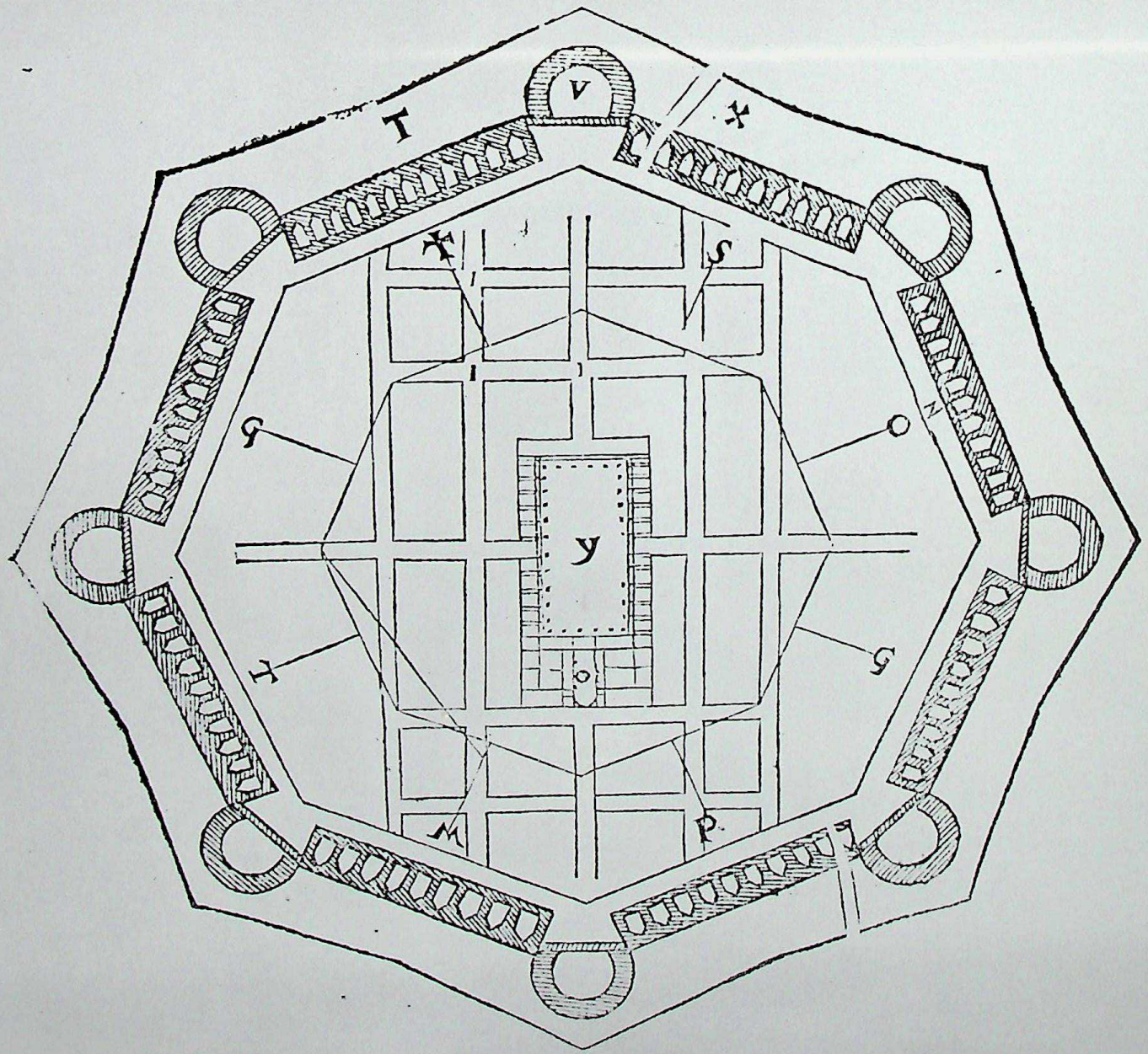
Pl. 379. *De Architectura* (ed. 1567). *Left*: Plan, elevation, and section of the circular temple, Book 4, p. 153. *Right*: Plan of the basilica, Book 5, p. 164.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



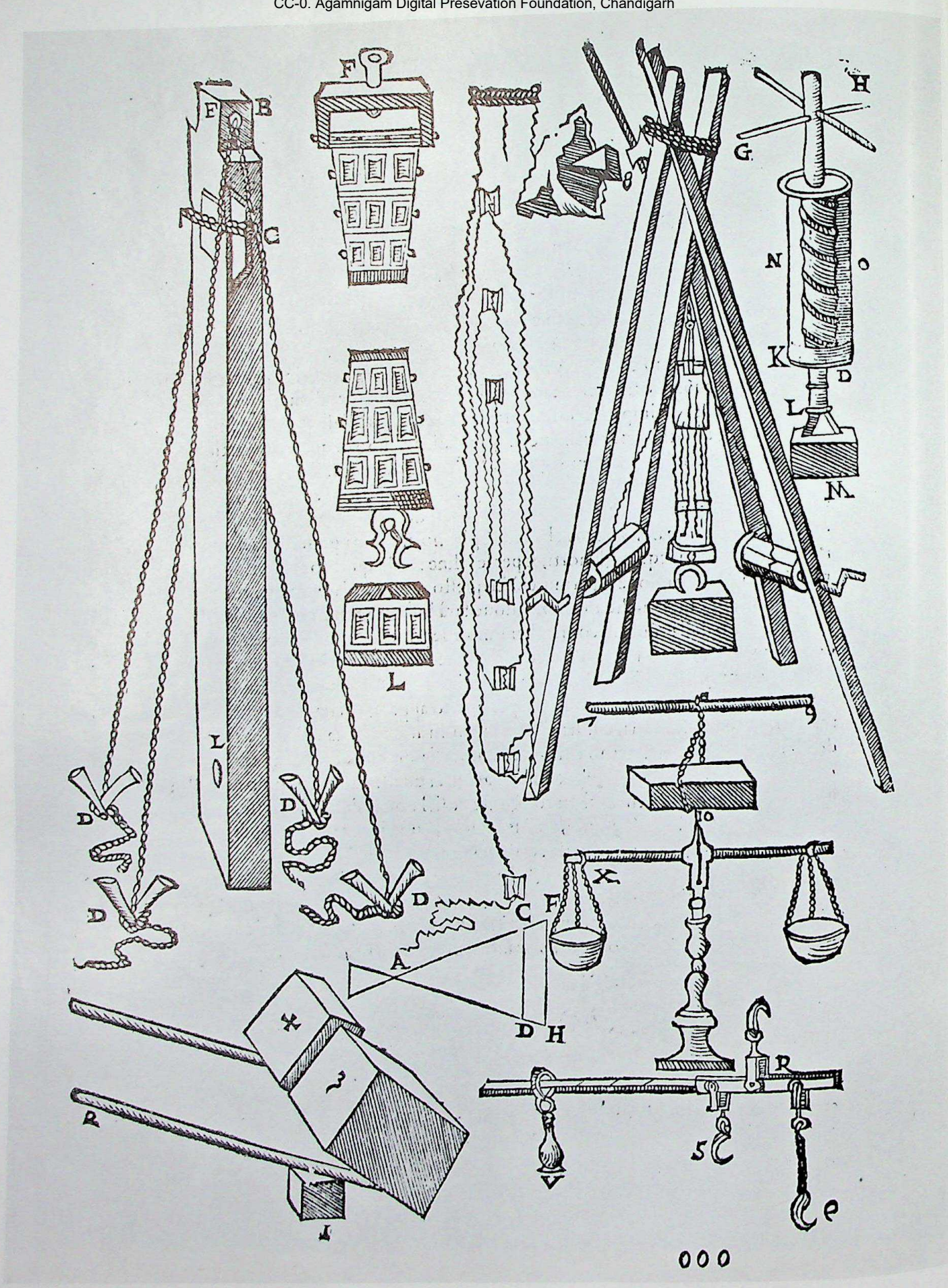
Pl. 380. *De Architectura* (ed. 1567). Plan of the theater, Book 5, p. 188.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



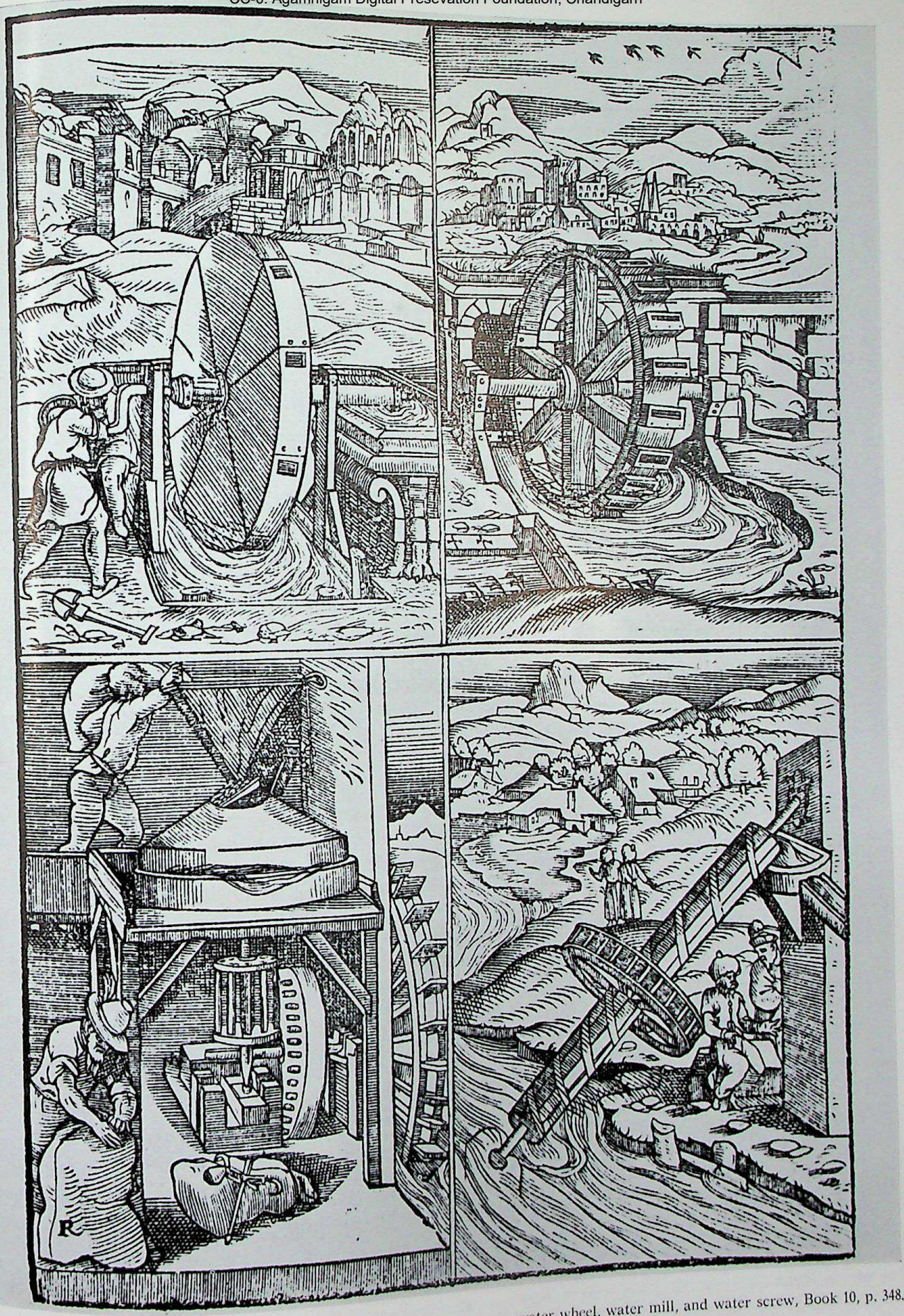
Pl. 381. *De Architectura* (ed. 1567). Plan of a fortified town, Book 1, p. 35.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



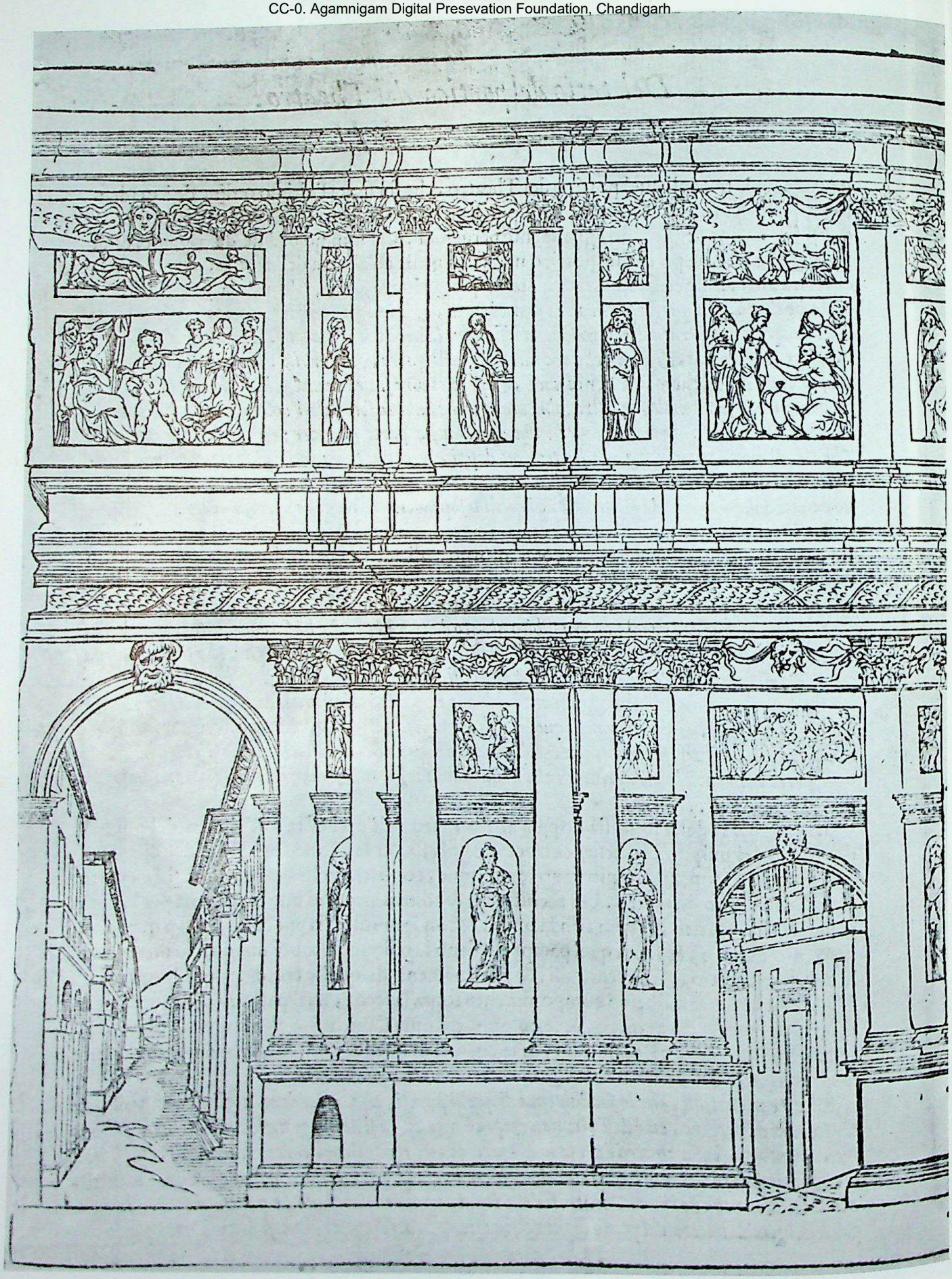
Pl. 382. *De Architectura* (ed. 1567). Machines and implements used in building, Book 10, p. 339.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 383. *De Architectura* (ed. 1567). Wooden hydraulic machines: tympanum, water wheel, water mill, and water screw, Book 10, p. 348.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

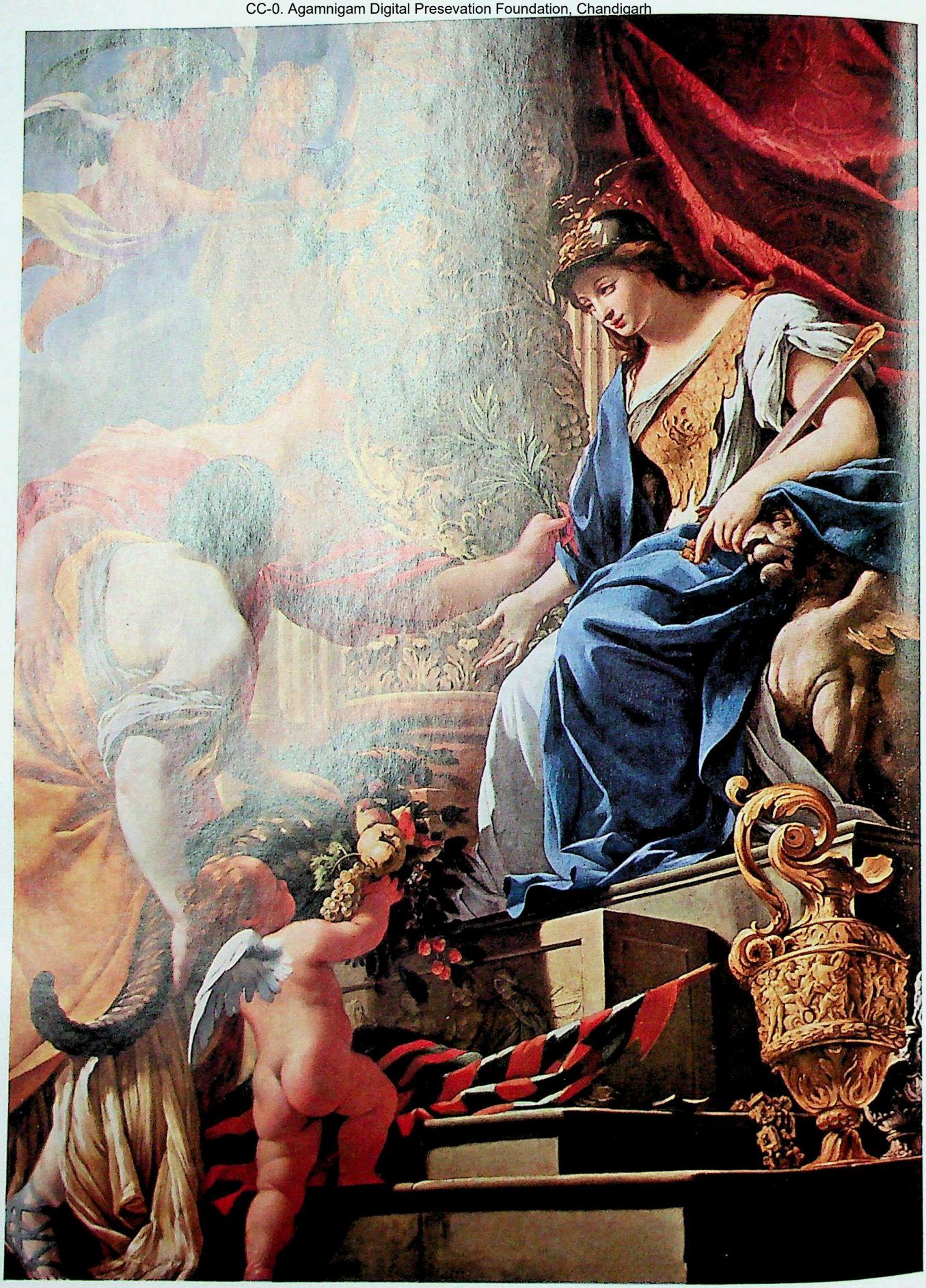


Pl. 384. *De Architectura* (ed. 1567). Stage scenery, Book 5, p. 187, a Renaissance interpretation of the Vitruvian text, reflecting the studies of A. Palladio and D. Barbaro. (Cf. Palladio's Teatro Olimpico, XII, PL. 425.)

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

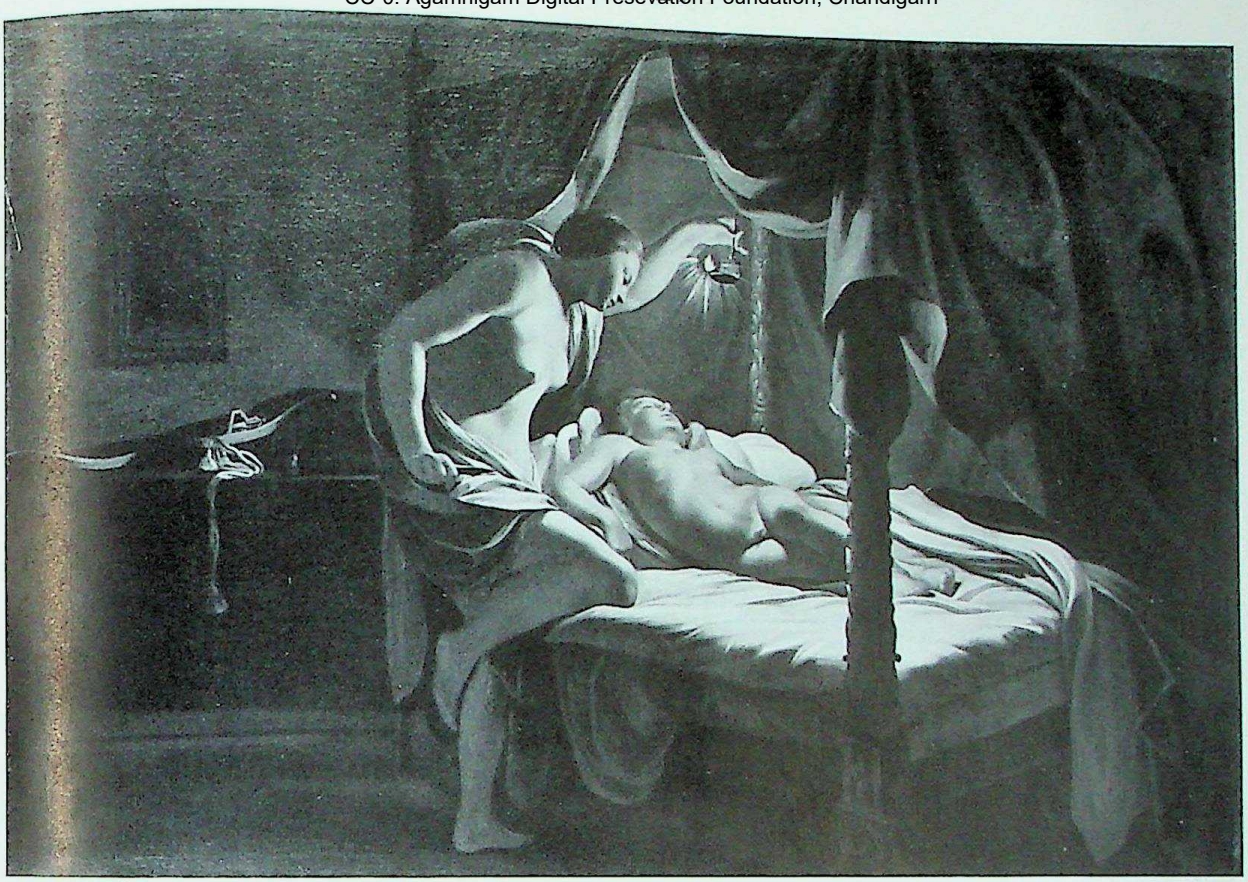
Pl. 385. Fainting Magdalen. Canvas, 39 3/8 × 31 1/2 in. Besançon, France, Musée des Beaux-Arts.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



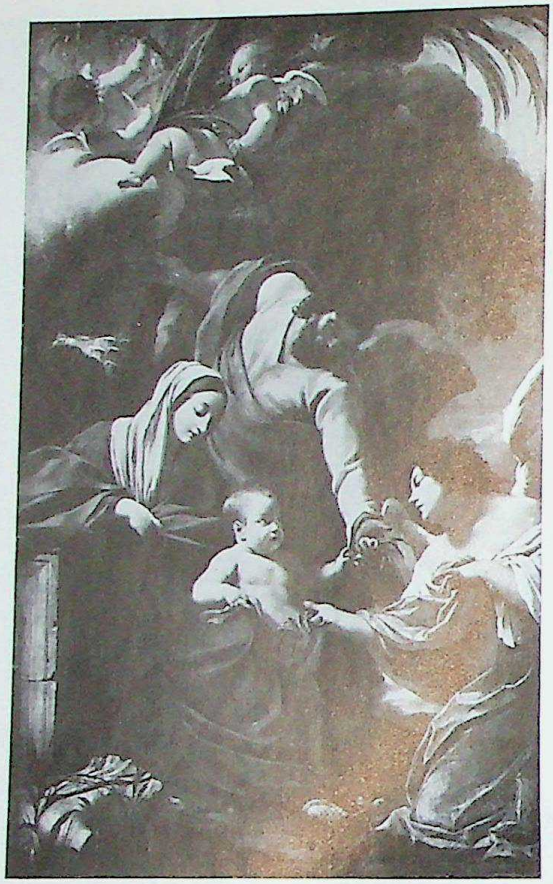
Pl. 386. Allegory of Prudence, Peace, and Abundance. Canvas, 7 ft., 9 in. × 5 ft., 9 in. Paris, Louvre.

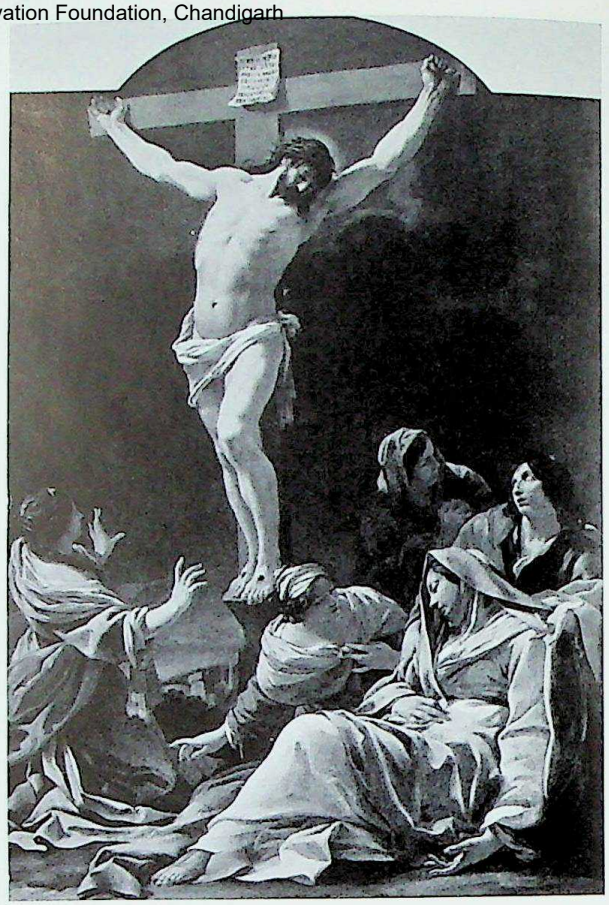
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 387. *Above*: Cupid and Psyche. Canvas, 3 ft., 8 in. × 5 ft., 5 in. Lyons, Musée des Beaux-Arts. *Below*: The Birth of the Virgin. Canvas, 7 ft., 1½ in. × 10 ft., 9½ in. Rome, S. Francesco a Ripa.

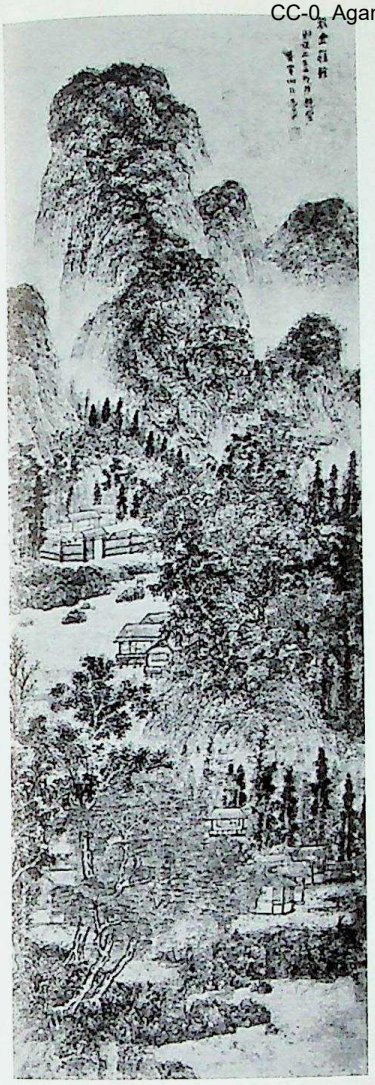
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 388. *Above, left*: The Rest on the Flight into Egypt. Panel, 6 ft., $6^{3}/_{4}$ in. × 4 ft., $2^{3}/_{8}$ in. Grenoble, France, Musée de Peinture et Sculpture. *Right*: The Crucifixion. Canvas, 7 ft., 1 in. × 4 ft., $9^{1}/_{2}$ in. Lyons, Musée des Beaux-Arts. *Below*: Diana. Canvas, 3 ft., $4^{1}/_{8}$ in. × 4 ft., $7^{1}/_{2}$ in. Hampton Court, England Royal Colls.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

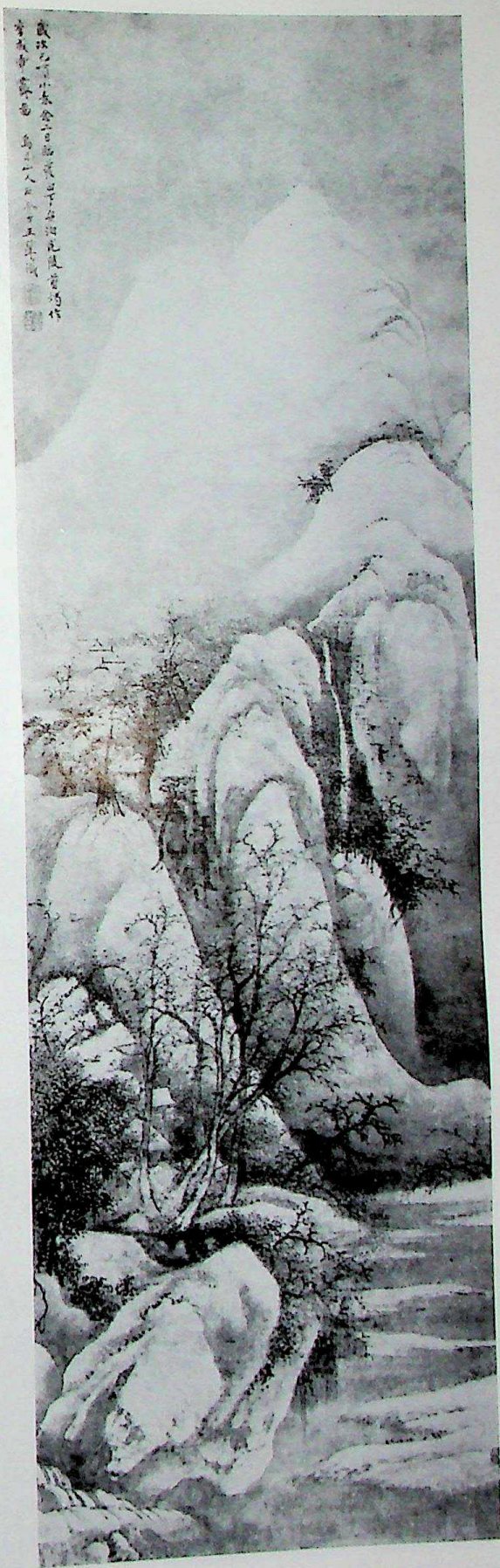


Pl. 389. *Above, left*: River Dwellings among Autumn Mountains. Ink and color on paper, 4 ft., $4^{3}/_{4}$ in. × 1 ft., $6^{1}/_{8}$ in. Kyoto, H. Ogawa Coll. *Center*: Hall in the Glen of Heavenly Fragrance. Ink and color on silk, 5 ft., $5^{1}/_{8}$ in. × 2 ft., $^{3}/_{8}$ in. Formerly, Osaka, Japan, E. Saitō Coll. *Right*: Dwelling in the Summer Mountains. Ink and color on paper, 3 ft., $10^{3}/_{4}$ in. × 1 ft., $2^{3}/_{8}$ in. Peking, Hui-hua-kuan. *Below*: T'ai-pai Mountain, detail. Ink and color on paper; full size, $11^{3}/_{8}$ in. × 9 ft. Boston, Museum of Fine Arts.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 390. The Ya-i Mountain Studio. Ink and color on paper, $40^{7}/_{8} \times 19^{3}/_{4}$ in. Peking, Palace Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 391. *Left*: Wang Shih-min, Mountain Landscape. Ink on paper, ht., ca. 35 in. *Right*: Wang Hui, Winter Landscape. Ink on paper, ht., ca. 30 in. Both, New York, C. C. Wang Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 392. Wang Shih-min, In the Style of Wang Méng, album leaf (now mounted on a hand scroll). Ink on paper, $10^5/_8 \times 14^5/_8$ in. Washington, D.C., *Freer Gallery of Art.*

WANG SHIH-MIN CHUEN-CHI'T
CC-0. Agamnigam Digital Preservation Foundation (Chennai) Trust

Pl. 393. *Left*: Wang Chien, Mountain Streams and Green Pines. Ink on paper, ht., ca. 20 in. Tokyo, Yamamoto Coll. *Right*: Wang Hui, Leafless Trees by the Bay, album leaf. Ink on paper, ht., ca. 15 in. Formerly, Peking, Yang Yin-pei Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 394. Wang Hui, River Scenery with Old Trees, album leaf. Ink on paper, ht., ca. 15 in. Formerly, Peking, Yang Yin-pei Coll.

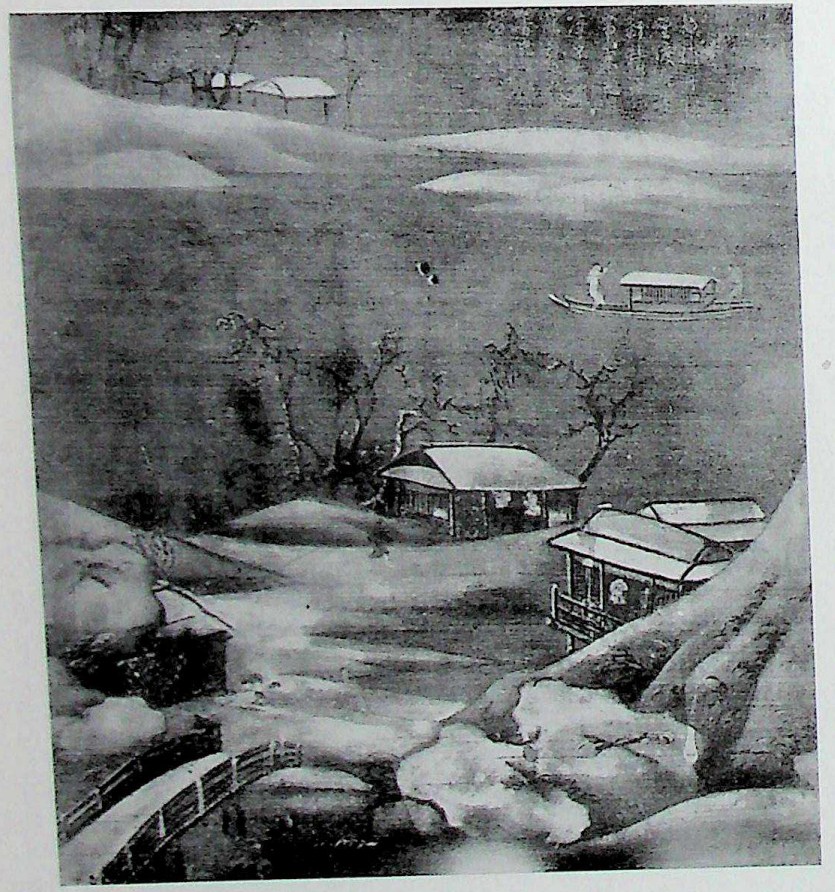
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 395. Wang Hui, Mountains in Mist, album leaf. Ink on paper, ht., ca. 15 in. Formerly, Peking, Yang Yin-pei Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

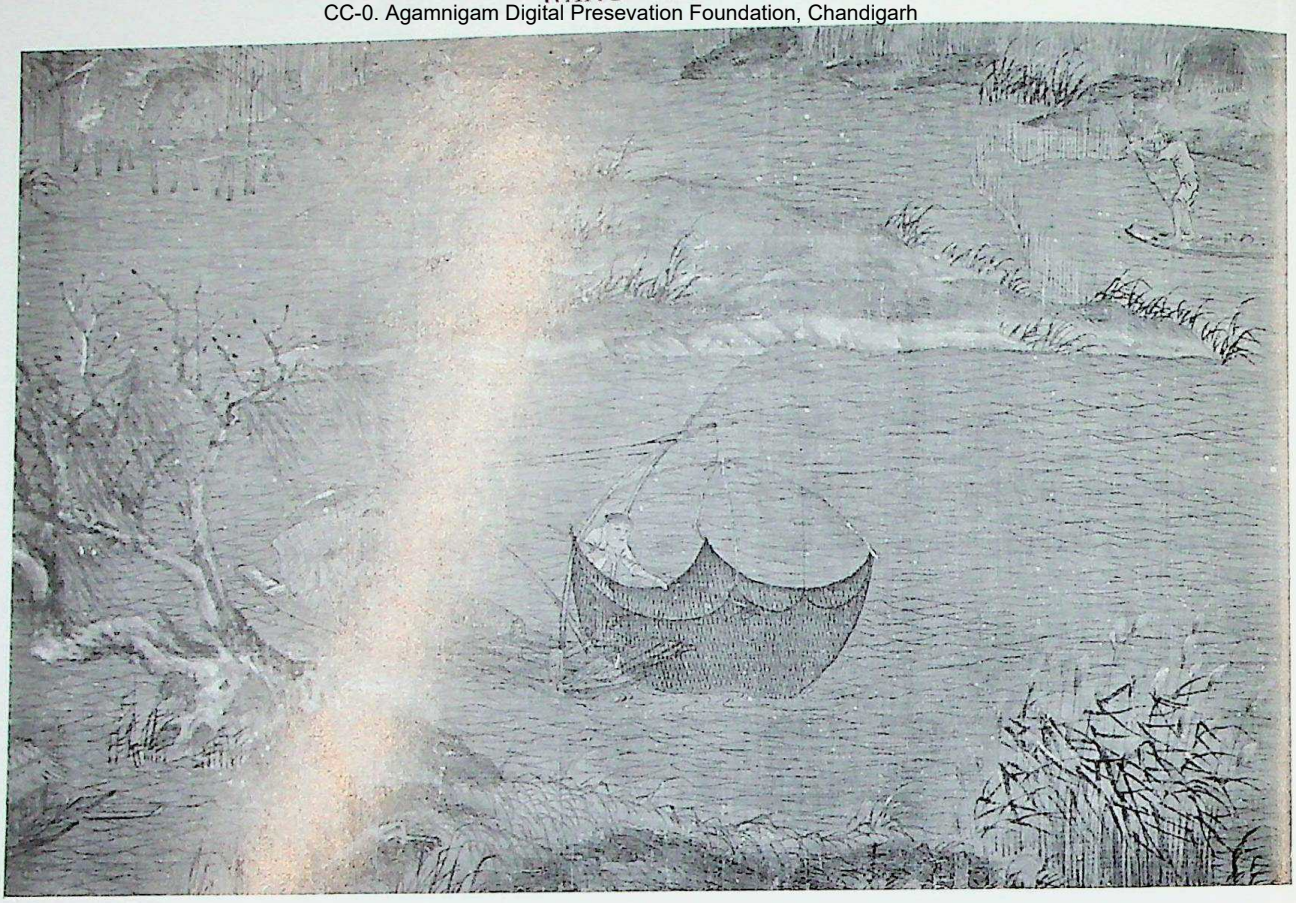
Pl. 396. Wang Yüan-ch'i, detail of the hand scroll Wang-ch'uan-t'u. Ink and color on paper, ht., ca. 10 in. New York, *C. C. Wang Coll.*

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 397. *Left*: Snowy Stream (attrib.), album leaf. Ink and color on silk, 15¼ × 12¾ in. Formerly, Peking, Palace Museum (lost since World War II). *Right, above*: Clearing after Snowfall on Mountains and Rivers, detail of a hand scroll (copy, probably 16th cent.). Ink and slight color on silk; full size (painting only), 11¼ in. × 14 ft., 7½ in. Honolulu, Hawaii, Academy of Arts. *Below*: The Wang-ch'uan Villa (copy, probably 13th cent. after Li Lung-mien's version), detail. Ink and light color on silk; full size, 10¼ in. × 18 ft. Chicago, Art Institute.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 398. *Above*: Early snow on the River, detail of a hand scroll attributed to Chao Kan (ca. 970), in the style of Wang Wei. Ink and color on silk, 10¼ in. × 12 ft., 4¼ in. Taichung, Formosa, National Palace Museum. *Below*: Fu Shêng Imparting Instruction on the *Shu-ching* (attrib., probably an early Sung copy). Ink and color on silk, 10×17½ in. Osaka, Municipal Museum, Abe Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 399. Fêtes Vénitiennes. Canvas, 22×18 in. Edinburgh, National Gallery of Scotland.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 400. *Left*: Savoyard with a Marmot. Canvas, 15¹/₄ × 12⁵/₈ in. Leningrad, The Hermitage. *Right*: Mezzetin. Canvas, 21¹/₄ × 17 in. New York, Metropolitan Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 401. L'Amour au Théâtre Français. Canvas, 14 5/8 × 18 7/8 in. Berlin, Staatliche Museen.

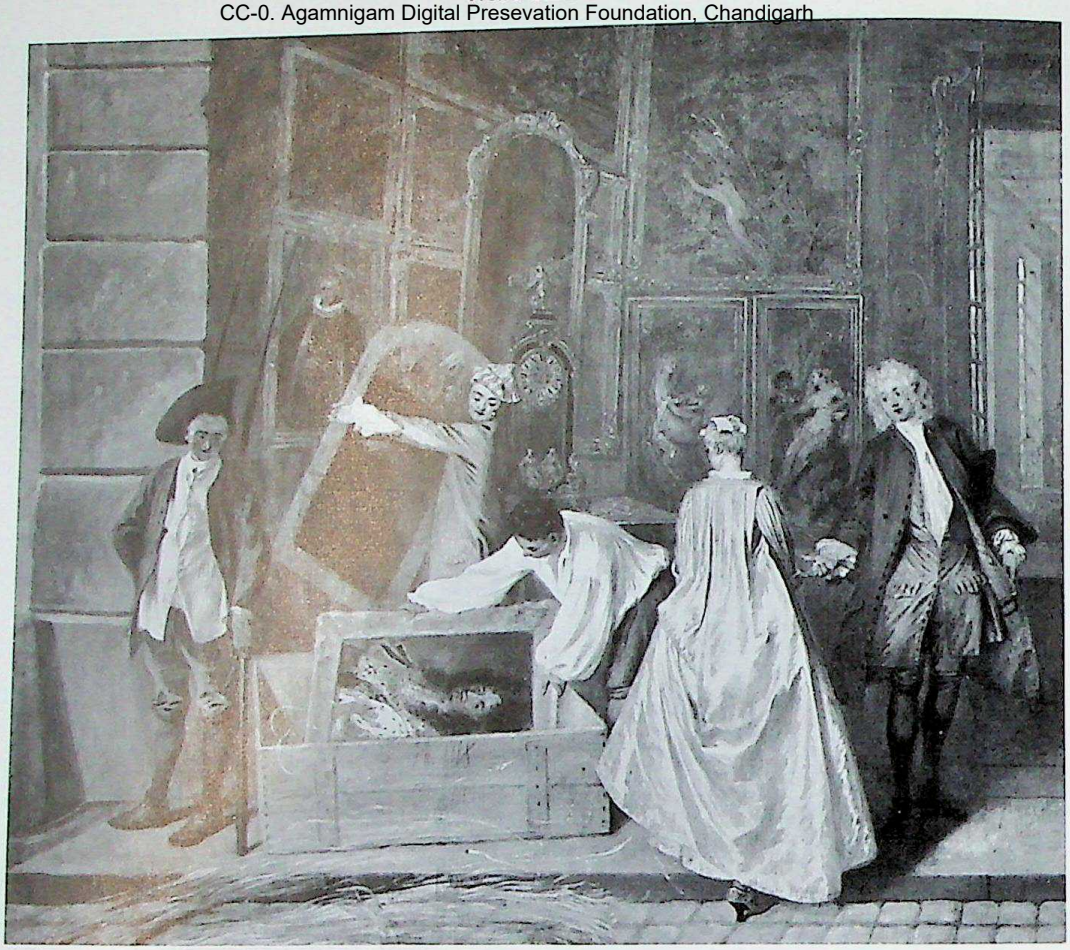
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 402. Italian Comedians. Canvas, 25 1/4 × 30 1/8 in. Washington, D.C., National Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 403. L'Embarquement pour Cythère. Canvas, 4 ft., 3 in. × 6 ft., 3½ in. Berlin, Staatliche Museen.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 404. *Above*: Gersaint's Signboard, detail. Canvas; full size, 5 ft., 4 in. × 10 ft., 1 in. Berlin, Staatliche Museen. *Below*: Réunion en Plein Air. Canvas, 23 5/8 × 29 1/2 in. Dresden, Gemäldegalerie.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 405. Spring, study. Drawing with three crayons, $12^5/_8 \times 10^5/_8$ in. Paris, Louvre.

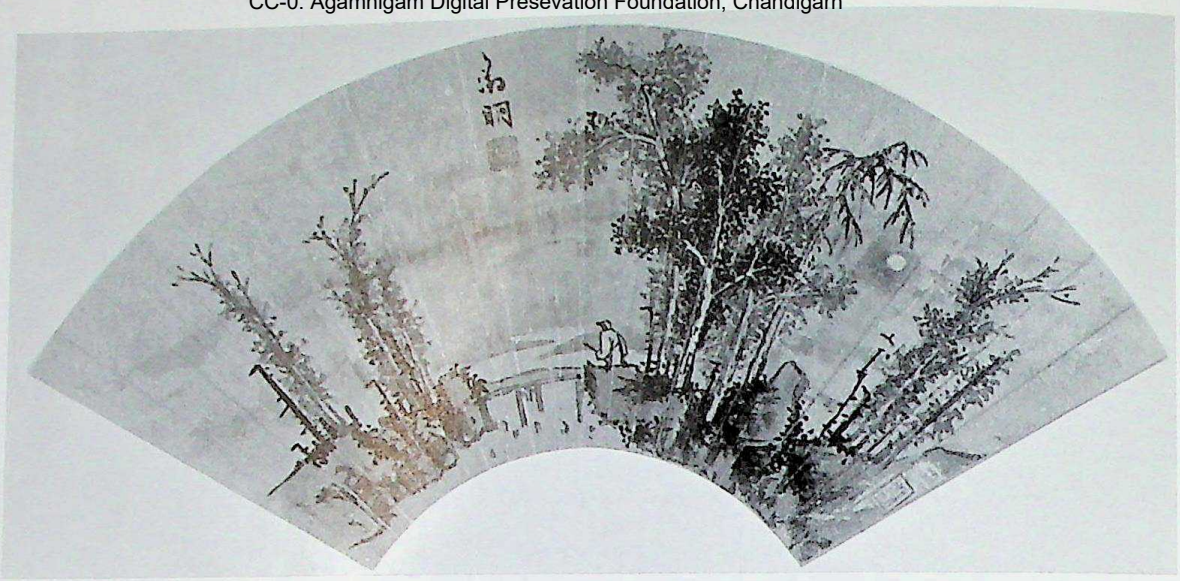
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 406. L'Indifférent. Panel, 10¼ × 7⅞ in. Paris, Louvre.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

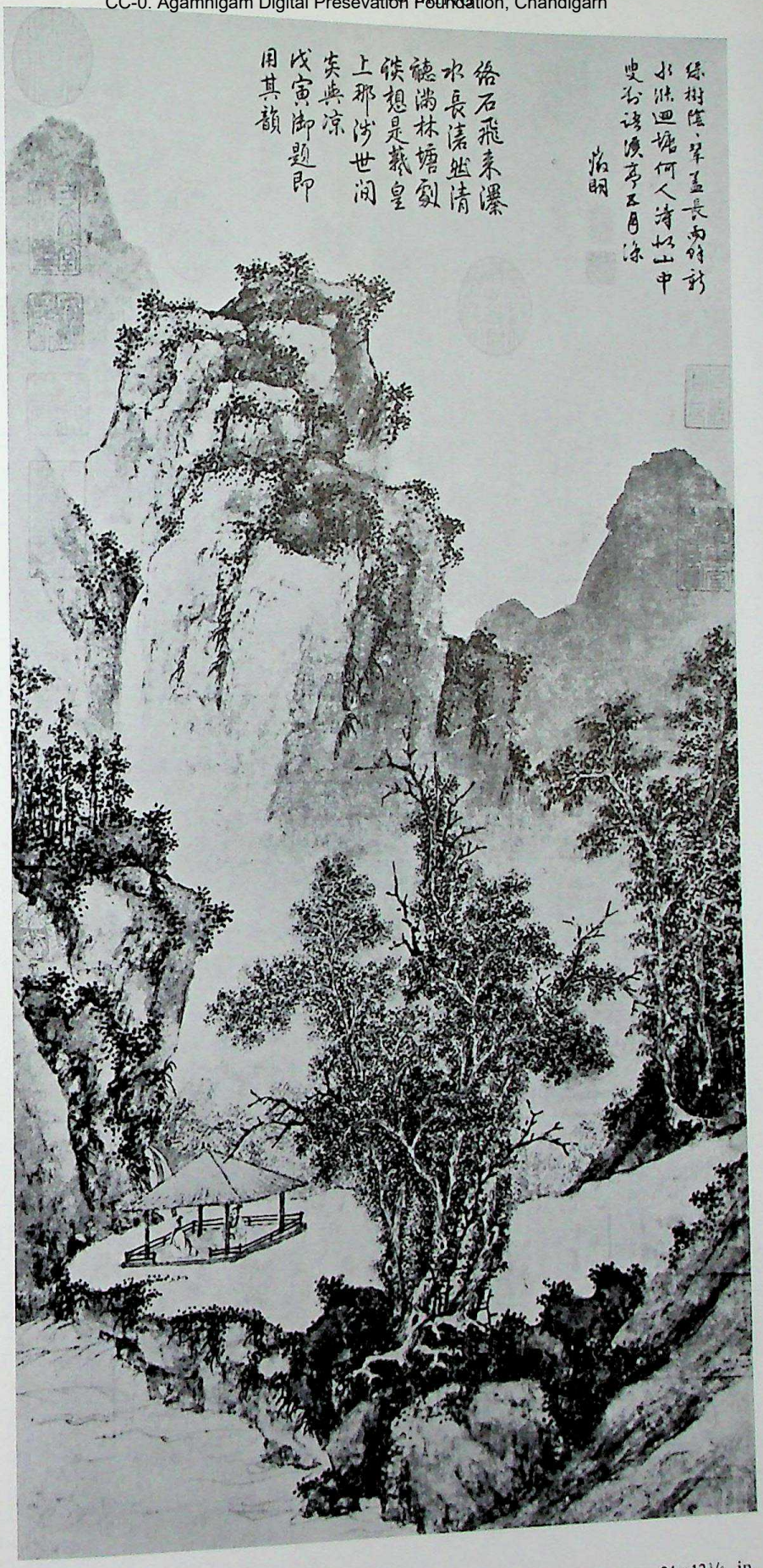
Pl. 407. Gilles. Canvas, 6 ft., 3/4 in. × 4 ft., 11 in. Paris, Louvre.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



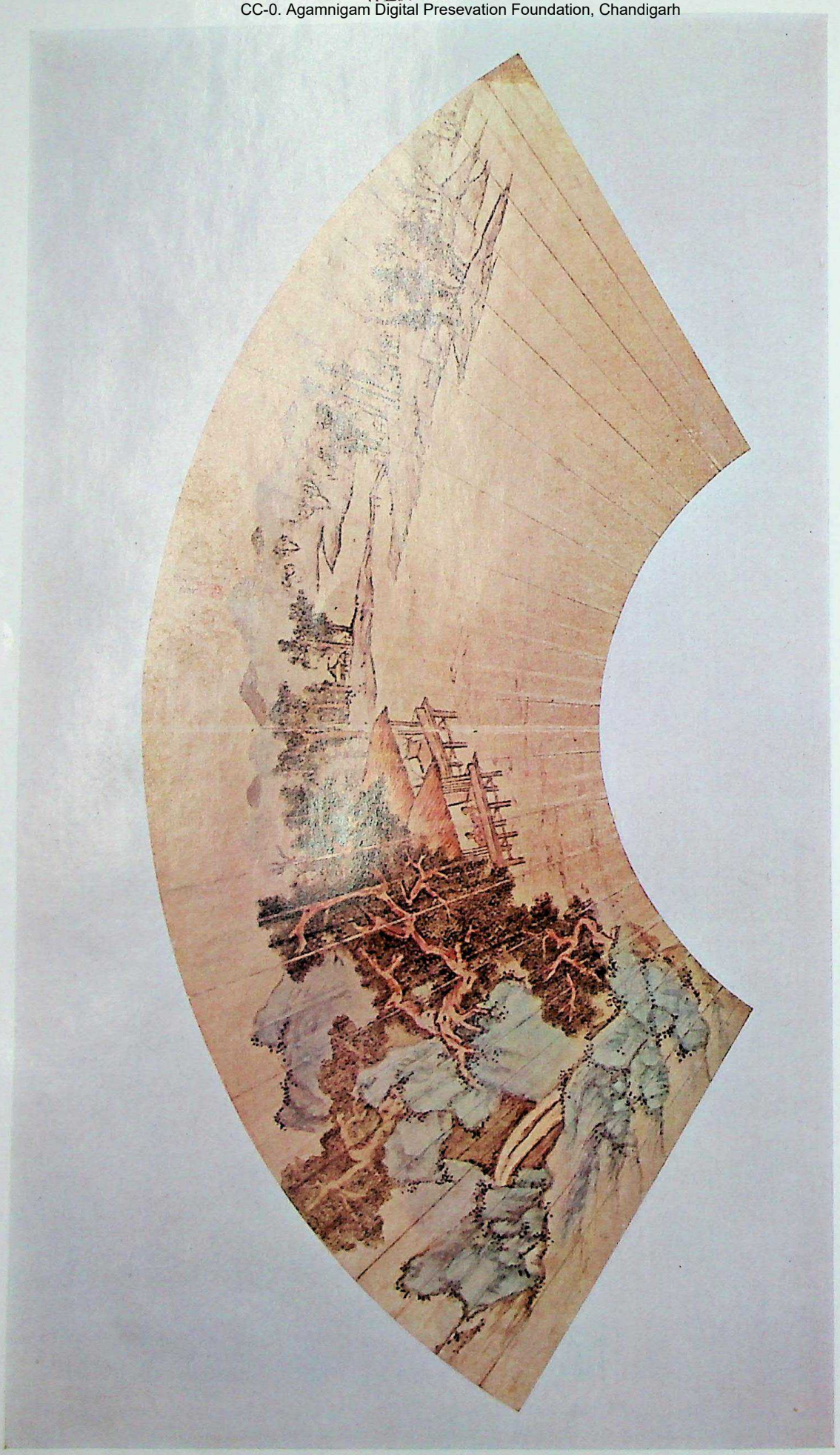
Pl. 408. *Above*: Landscape, from a fan. Ink on gold paper, $7^{3}/_{8} \times 20^{1}/_{4}$ in. Honolulu, Hawaii, Academy of Arts. *Below, left*: Orchids. Ink on paper, $12^{3}/_{8} \times 9^{7}/_{8}$ in. Taichung, Formosa, National Palace Museum. *Right*: Old Woods and Chilly Brook. Ink on paper, 2 ft., $3^{3}/_{8}$ in. × $9^{1}/_{4}$ in. Japan, Hiyoshi Coll.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 409. Conversation in the Pavilion. Ink and slight color on paper, 24×12 3/8 in. Taichung, Formosa, National Palace Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 410. Landscape, from a fan. Ink and slight color on paper, $6^{7}/_{8} \times 21^{1}/_{8}$ in. Honolulu, Hawaii, Academy of Arts.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 411. The Magdalen Reading, detail of a fragment of an altarpiece. Panel, 24½ × 21½ in. London, National Gallery.

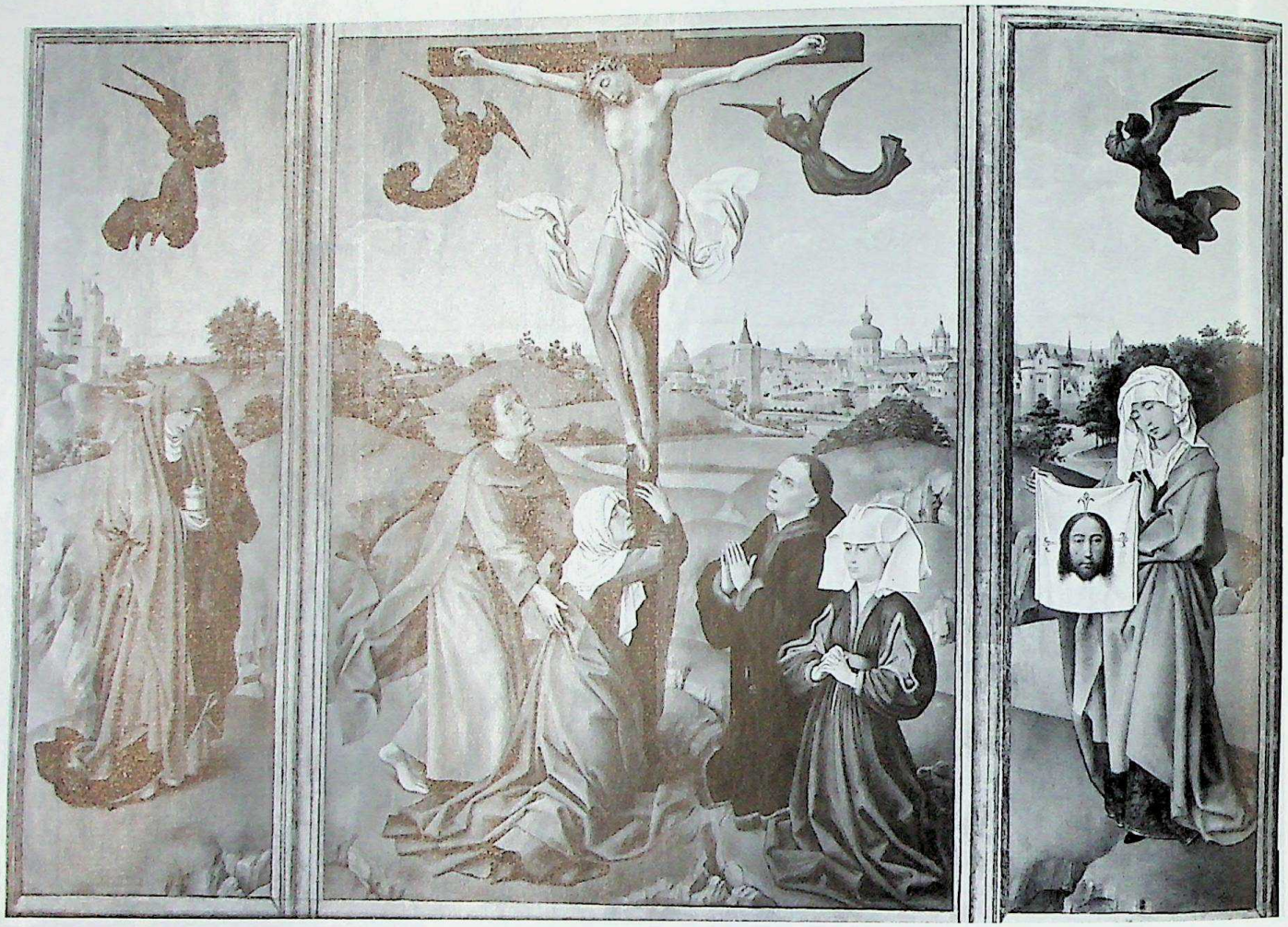
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

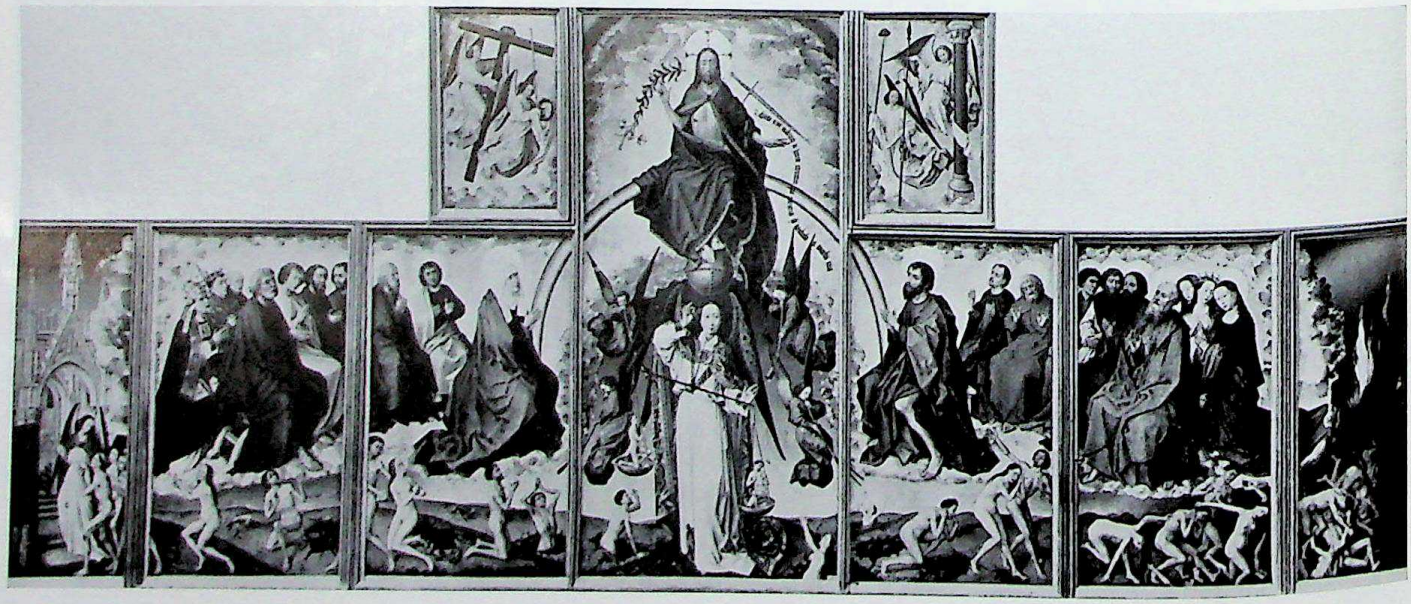
Pl. 412. The Annunciation. Panel, 33 7/8 × 36 1/4 in. Paris, Louvre.

WEYDEN
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 413. The Descent from the Cross. Panel, 7 ft., 2½ in. × 8 ft., 7 in. Madrid, Prado.

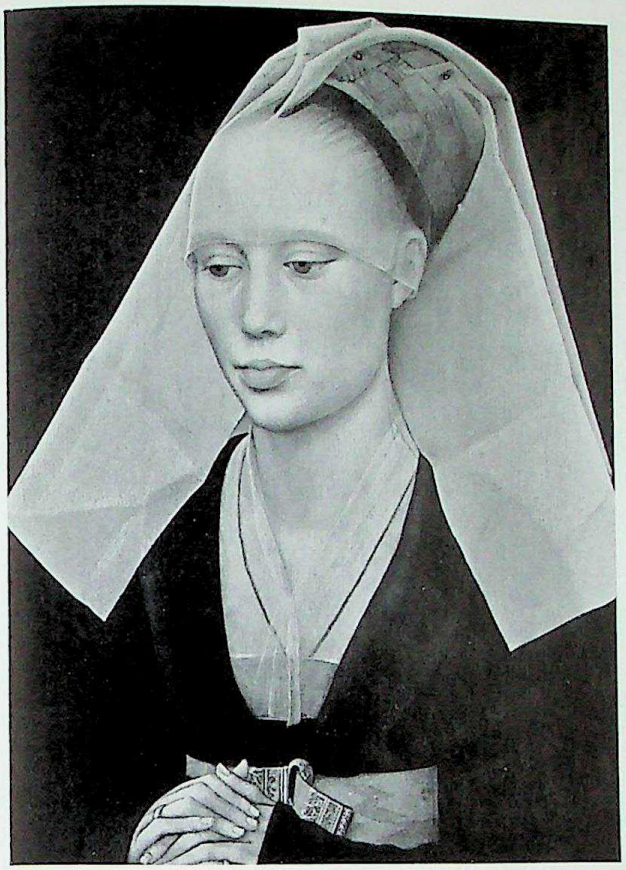
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

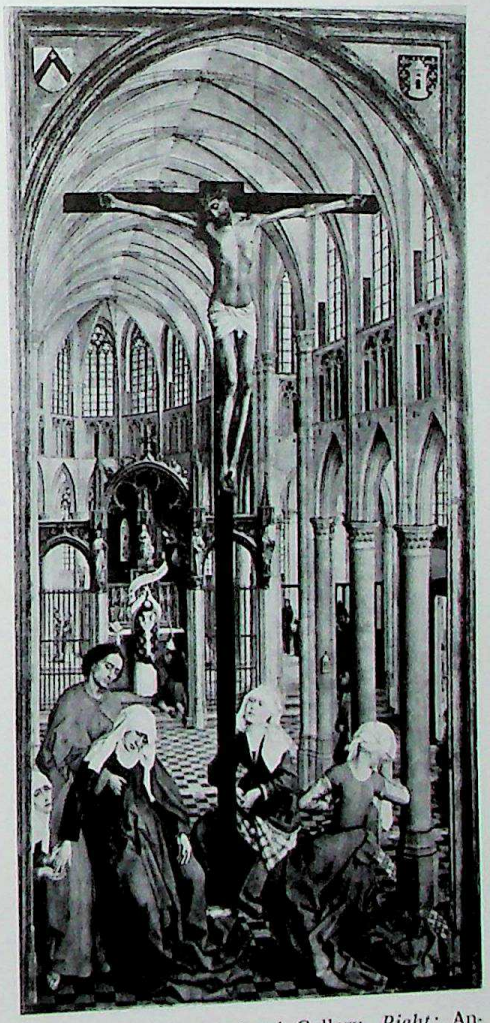




Pl. 414. *Above*: The Crucifixion with John, Mary, and two donors (*central panel*), Mary Magdalene (*left*), and Veronica (*right*). Ht. of painted surface, 37 3/4 in. Vienna, Kunsthistorisches Museum. *Below*: The Last Judgment. Panel, 7 ft. × 18 ft., 4 1/2 in. Beaune, France, Hôtel-Dieu.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





Pl. 415. *Above, left*: Portrait of a Lady. Panel, $14^{1}/_{2} \times 10^{3}/_{4}$ in. Washington, D.C., National Gallery. *Right*: Antoine, Grand Bâtard de Bourgogne. Panel, $15^{3}/_{8} \times 11^{1}/_{4}$ in. Brussels, Musées Royaux des Beaux-Arts. *Below, left*: The Virgin and Child with Peter, John the Baptist, Cosmas, and Damian. Panel, $20^{7}/_{8} \times 15$ in. Frankfort on the Main, Städelsches Kunstinstitut. *Right*: The Eucharist, central panel of the Triptych of the Seven Sacraments. Panel, 6 ft., $6^{3}/_{4}$ in. × 3 ft., $2^{1}/_{4}$ in. Antwerp, Musée Royal des Beaux-Arts.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 416. Portrait of a Young Lady. Panel, $18^{1}/_{2} \times 12^{5}/_{8}$ in. Berlin, Staatliche Museen.

WEYDEN
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 417. The Adoration of the Magi, central panel of the Triptych of St. Columba. Panel, 4 ft., 6 1/8 in. × 5 ft. Munich, Alte Pinakothek.

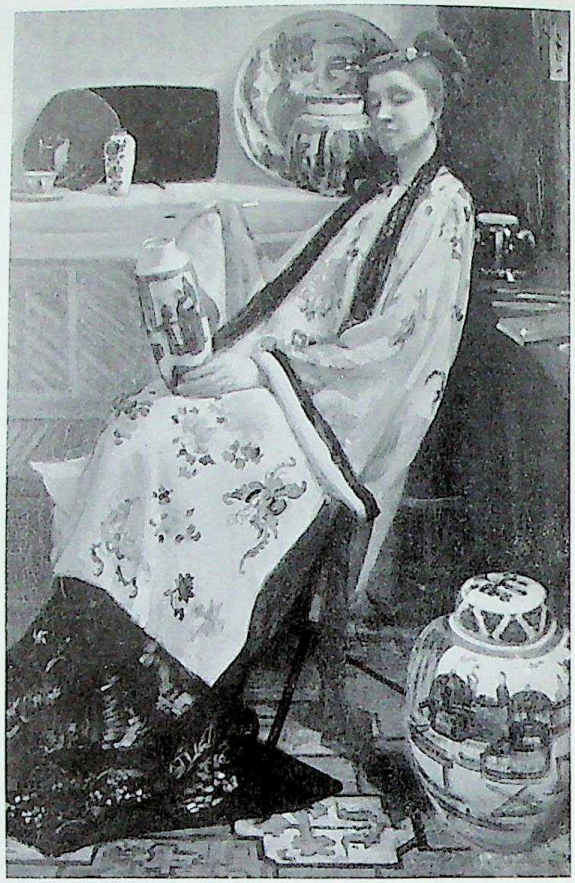
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 418. Old Battersea Bridge: Nocturne — Blue and Gold. Canvas, 26¼ × 19¾ in. London, Tate Gallery.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

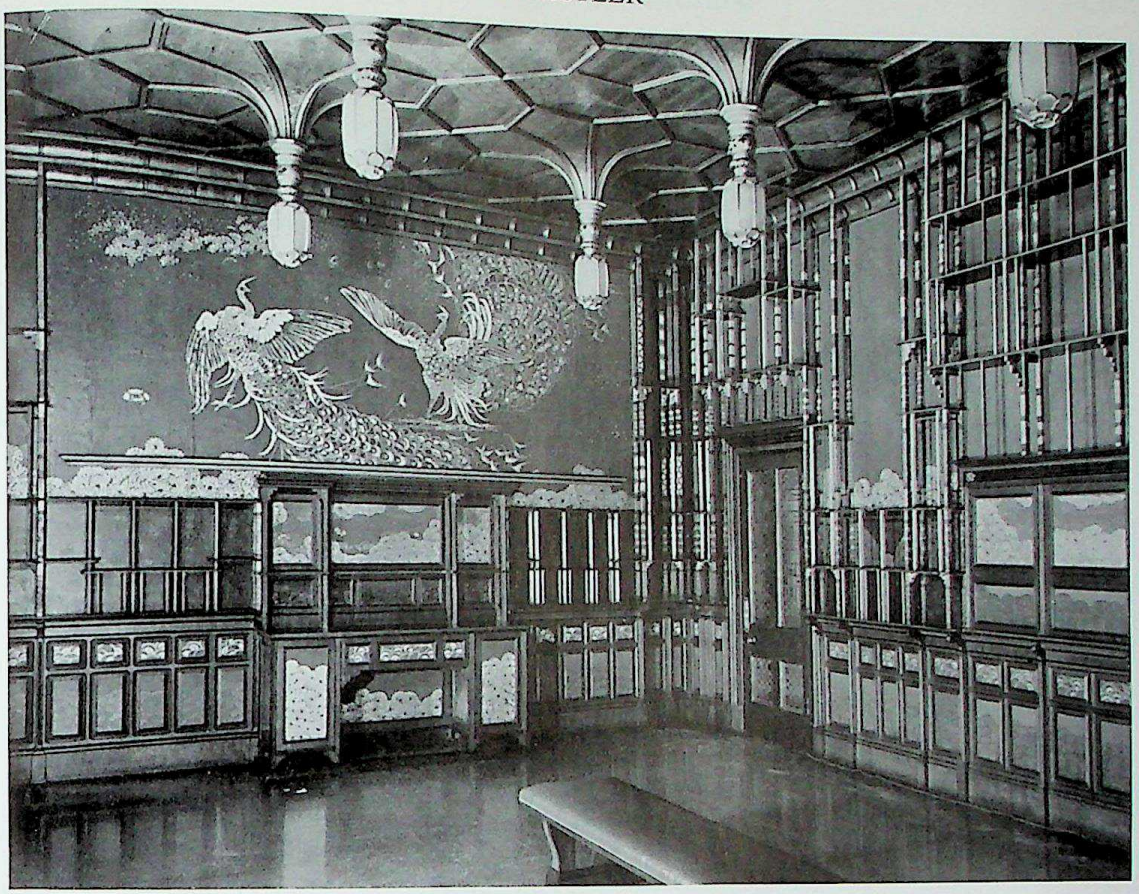
Pl. 419. The White Girl. Canvas, 7 ft., 1/2 in. × 3 ft., 6 1/2 in. Washington, D.C., National Gallery.

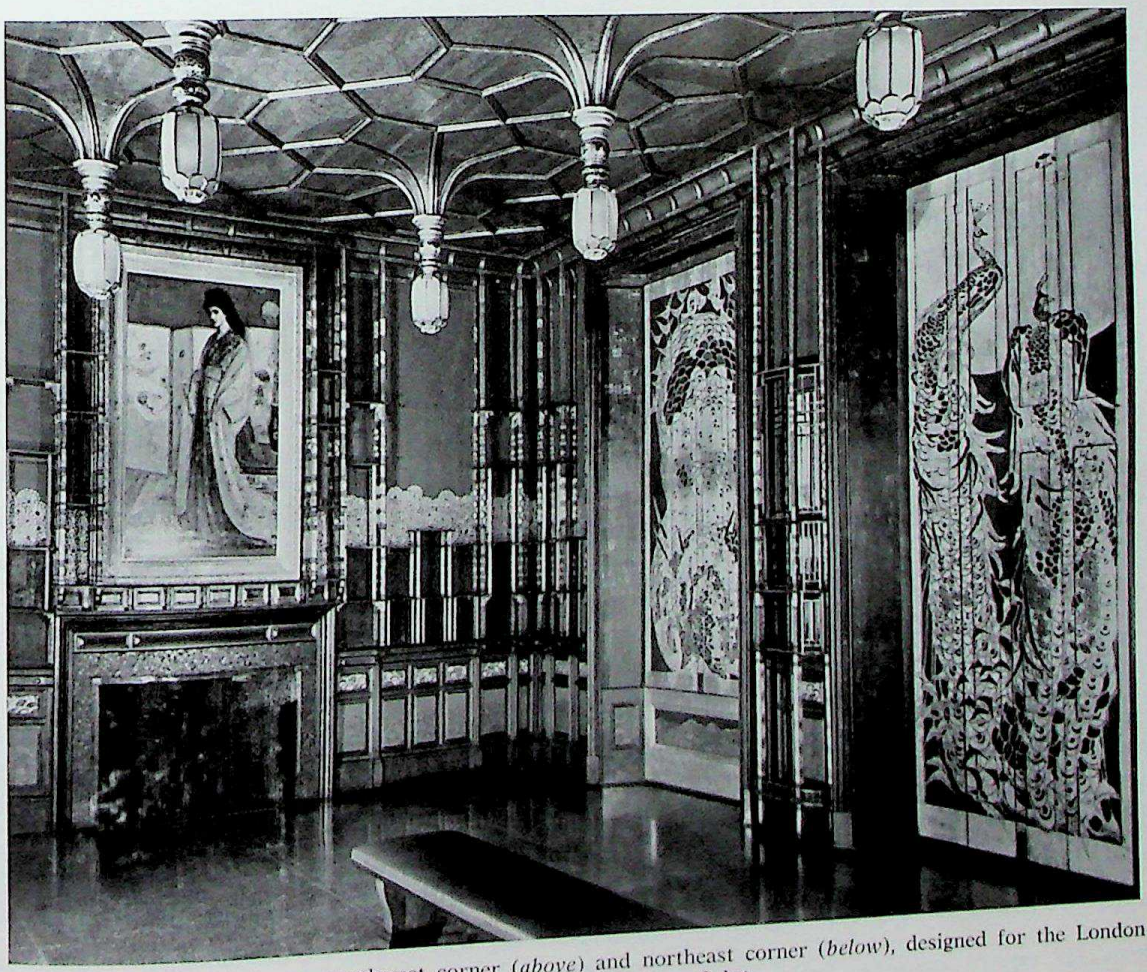
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 420. *Above, left*: The Little White Girl: Symphony in White, No. 2. Canvas, 30×20 in. London, Tate Gallery. *Right*: Lady of the Lang Lijsen. Canvas, 36¼×24¼ in. Philadelphia, Museum of Art, Johnson Coll. *Below, left*: Arrangement in Flesh Color and Black: Portrait of Théodore Duret. Canvas, ca. 6 ft., 4 in. × 3 ft. New York, Metropolitan Museum. *Right*: Portrait of Thomas Carlyle: Arrangement in Gray and Black, No. 2. Canvas, 5 ft., 7 in. × 4 ft., 8 in. Glasgow, Art Gallery and Museum.

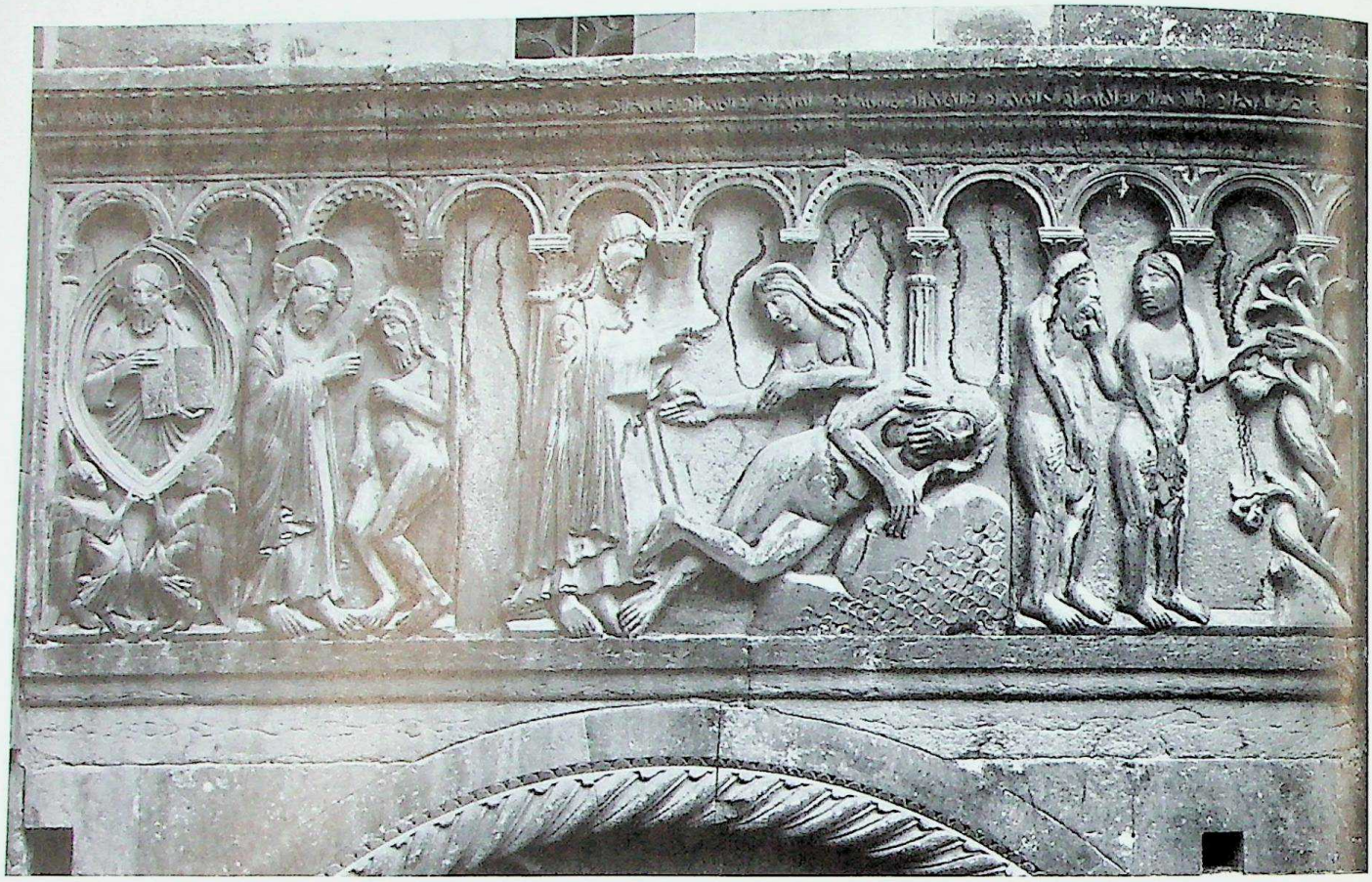
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

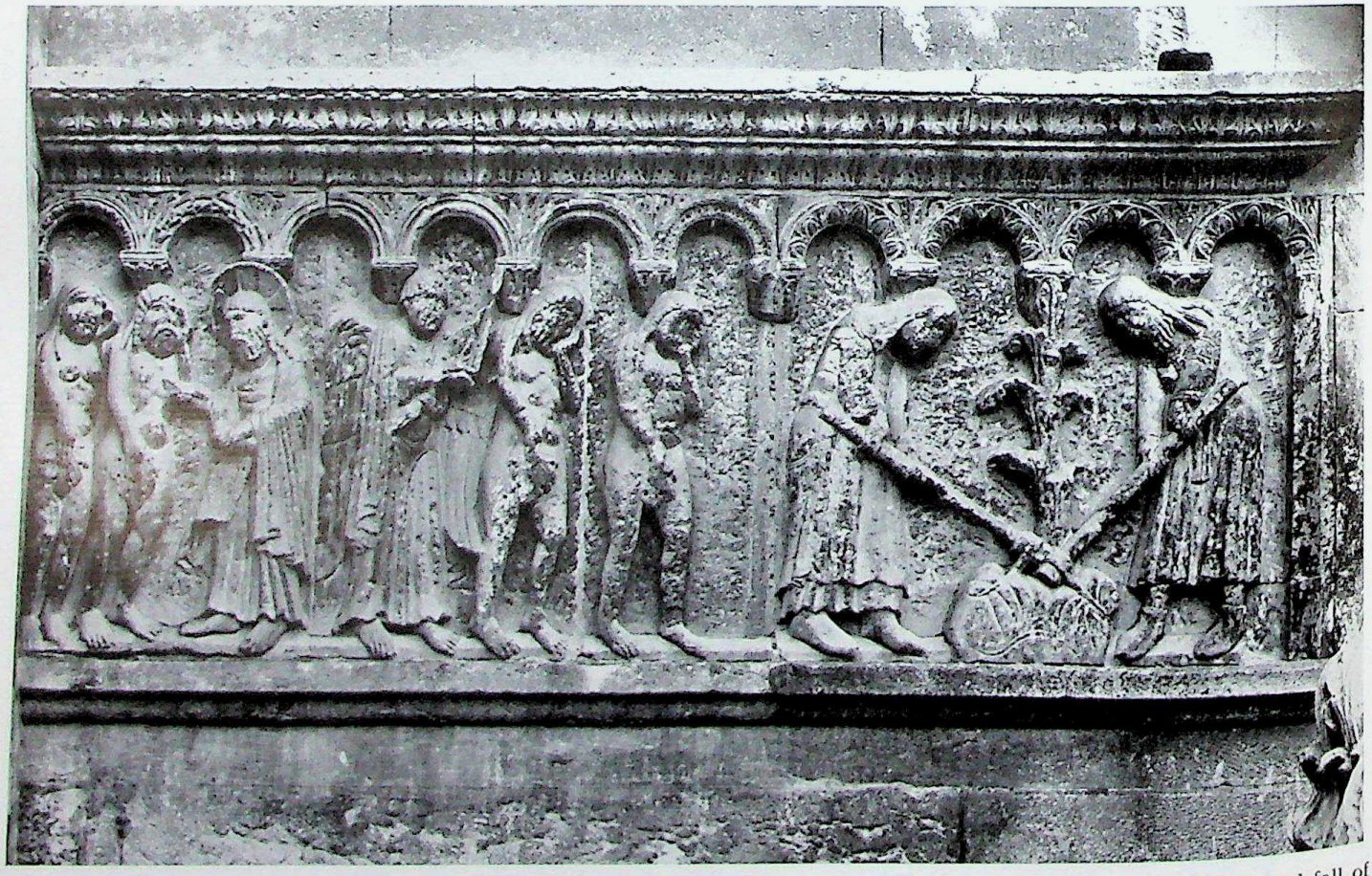




Pl. 421. The Peacock Room, southwest corner (*above*) and northeast corner (*below*), designed for the London house of F. R. Leyland. Washington, D.C., Freer Gallery of Art.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



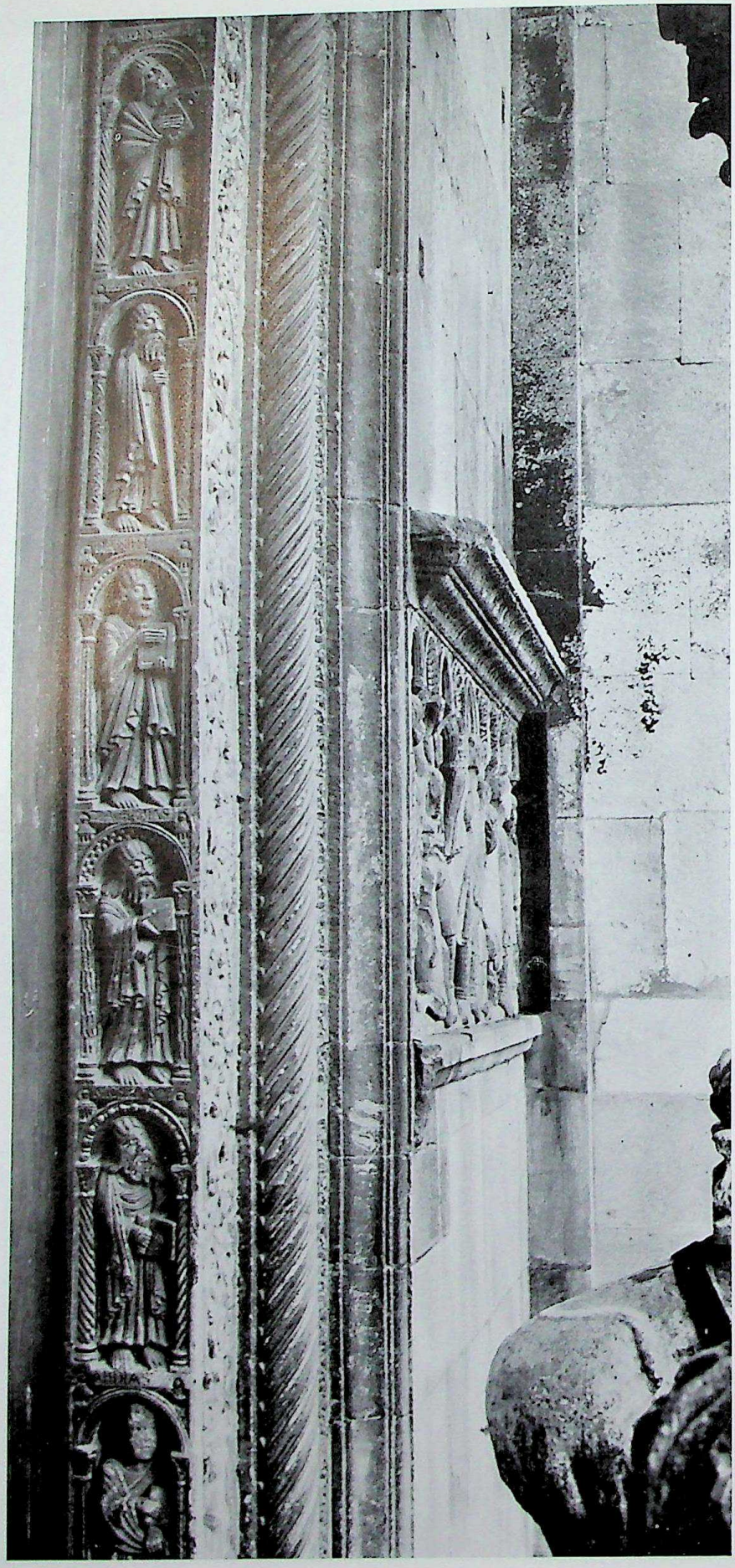


Pl. 422. Scenes from Genesis, reliefs on the façade of the Cathedral, Modena, Italy. *Above*: The Creator and the creation and fall of Adam and Eve. *Below*: Adam and Eve rebuked by God, sent forth from the Garden of Eden, and condemned to till the ground. (Cf. view of façade, XII, PL. 219).

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

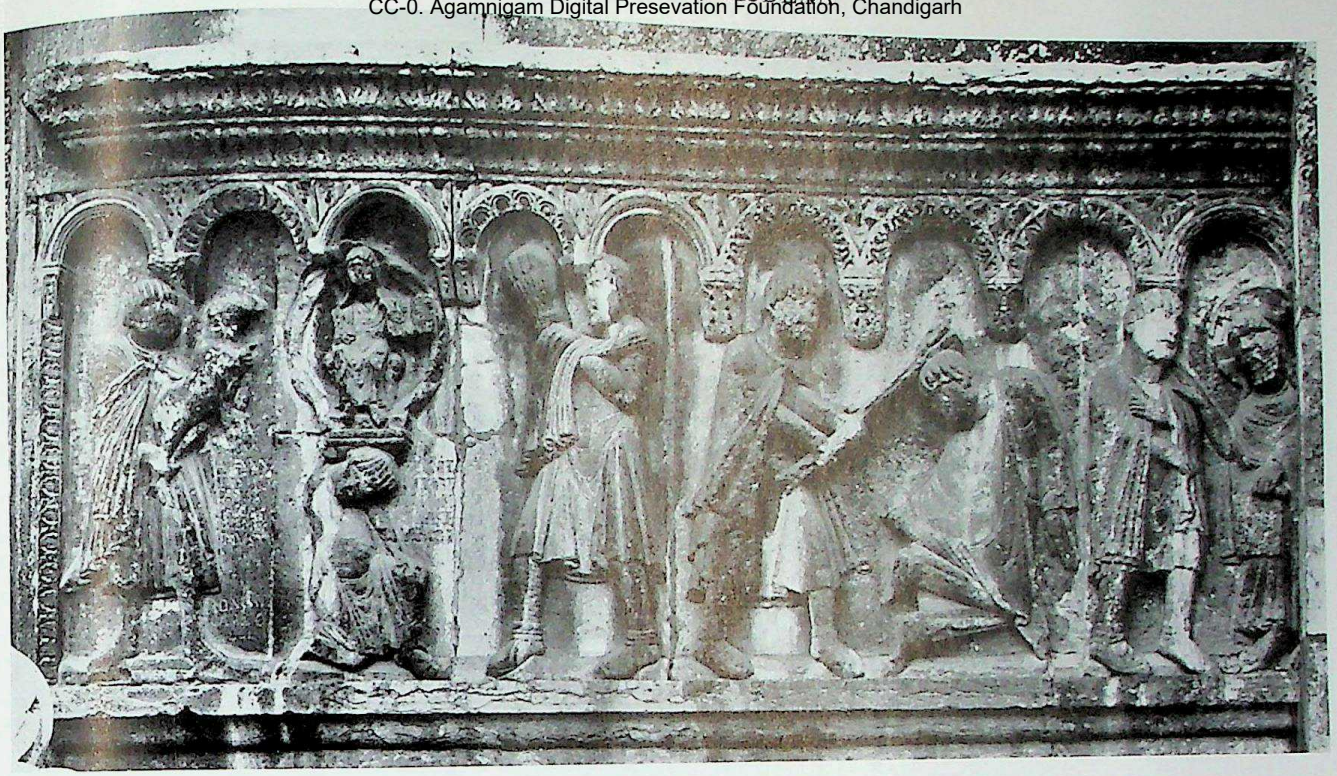
Pl. 423. A telamon, detail of relief on the portal of the Cathedral, Modena, Italy.

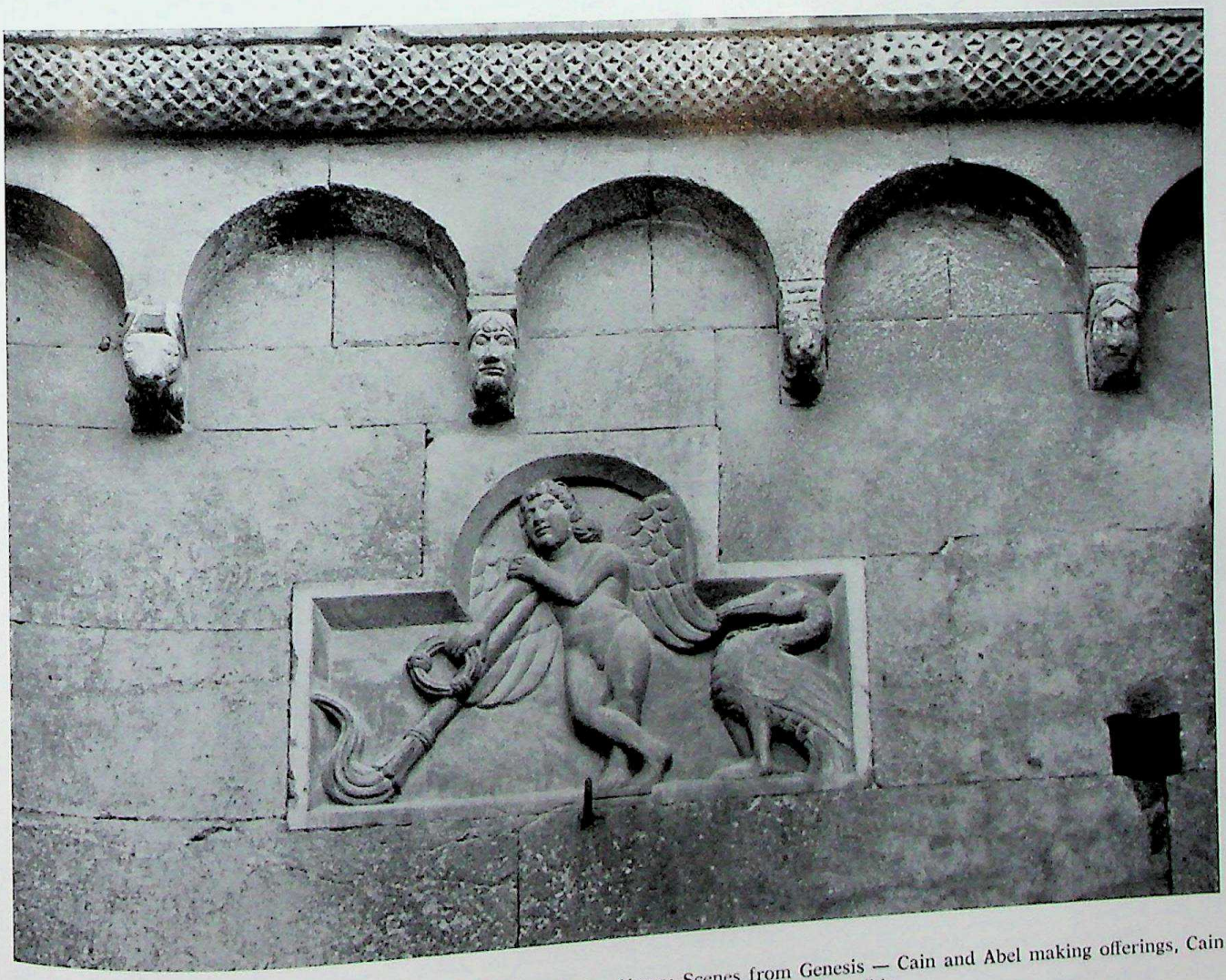
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 424. Old Testament prophets, reliefs on the portal of the Cathedral, Modena, Italy.

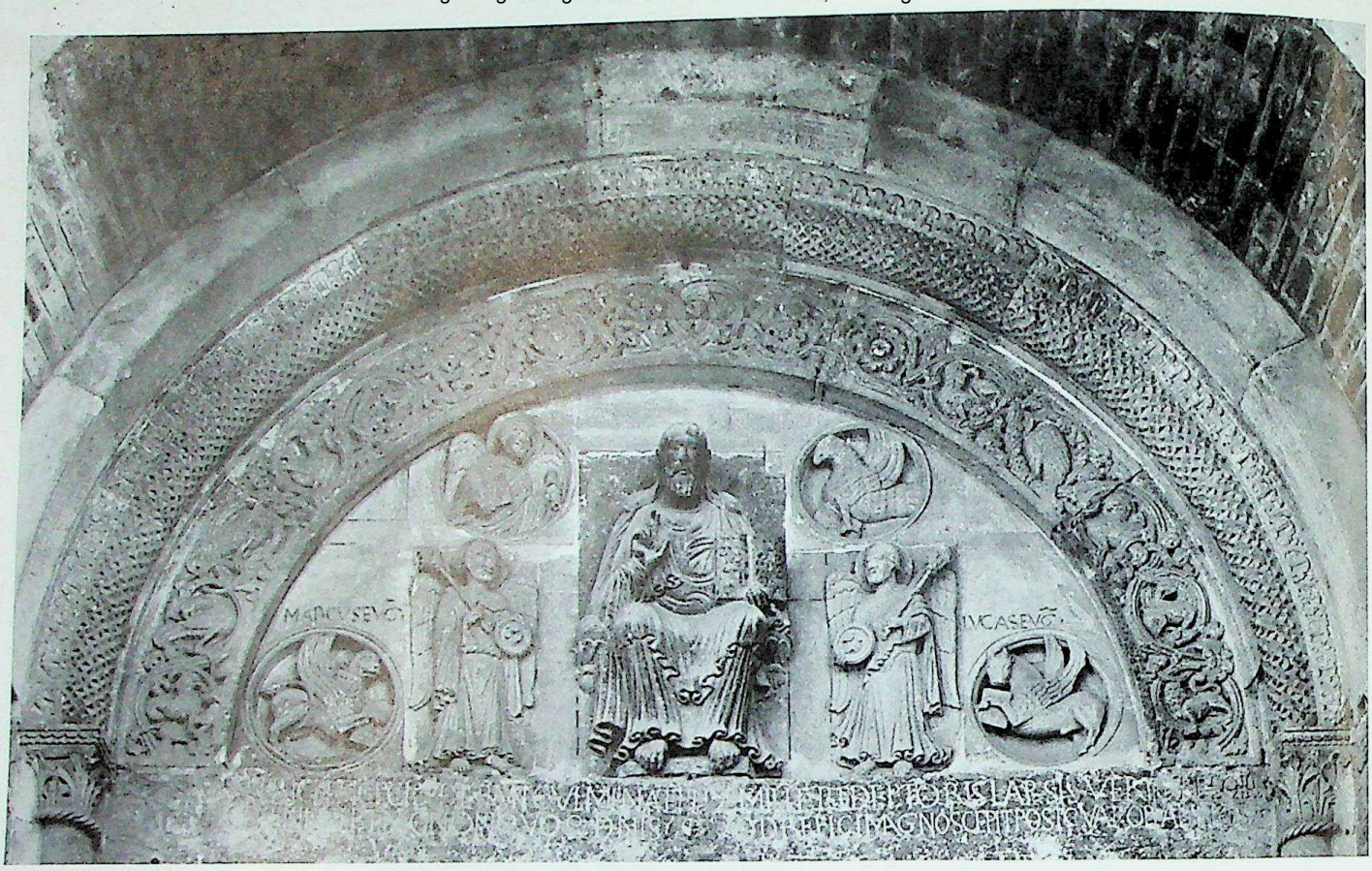
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 425. Reliefs on the façade of the Cathedral, Modena, Italy. *Above*: Scenes from Genesis — Cain and Abel making offerings, Cain slaying Abel and cursed by God. *Below*: Genius holding downturned torch and an ibis.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 426. School of Wiligelmo. *Above, and below, left*: Reliefs on the portal of the Abbey, Nonantola, Italy. *Above*: Master of the Nonantola Lunette, Christ between two angels and the symbols of the Evangelists. *Below, left*: Master of Astolfo, the foundation of the Abbey. *Right*: Master of the Evangelists, Madonna and Child, relief known as the Madonna di Carpi. Modena, Italy, Museo Estense.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 427. The Church. Panel, 34×31 3/4 in. Basel, Kunstmuseum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 428. Antipater before Julius Caesar. Panel, $33^{5}/_{8} \times 27^{3}/_{8}$ in. Basel, Kunstmuseum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 429. Altarpiece, from the Cathedral of St-Pierre, Geneva, surviving wings. Panel: each, 4 ft., 4 in. × 5 ft., 5/8 in. *Above*: The Miraculous Draught of Fishes. *Below*: The Liberation of St. Peter. Both, Geneva, Musée d'Art et d'Histoire.

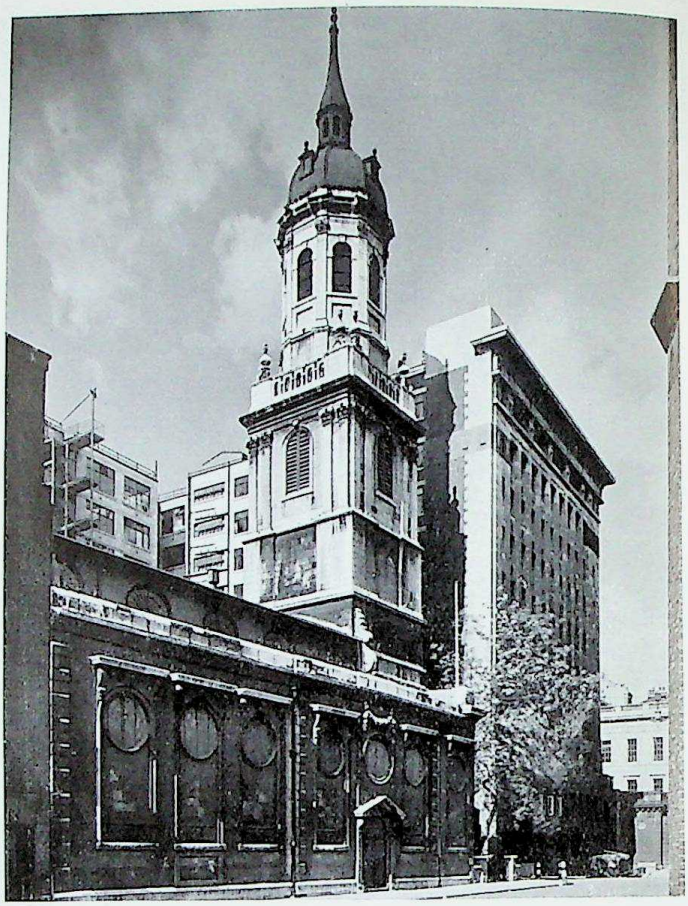
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

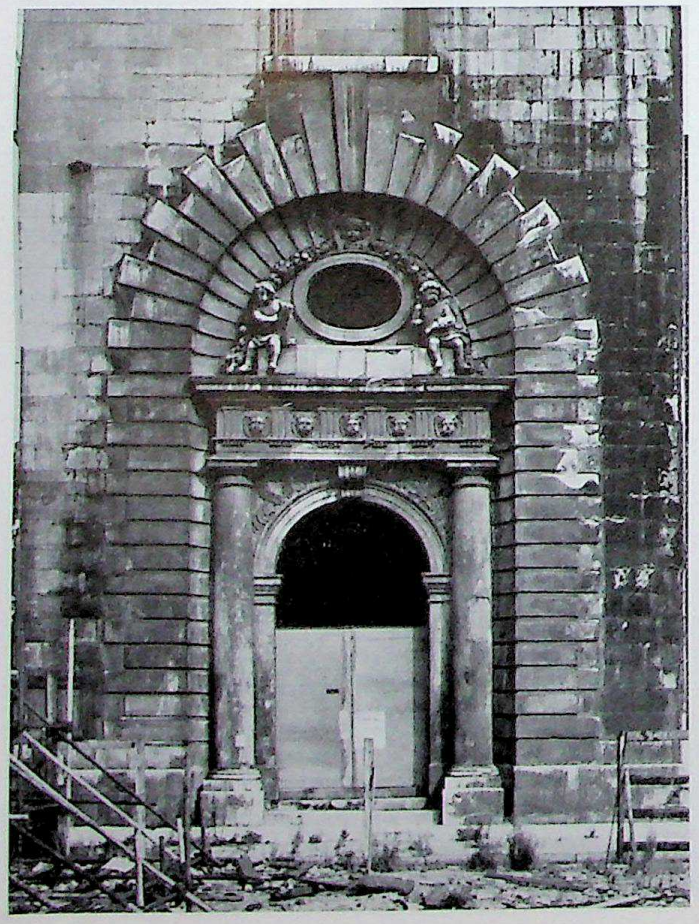
Pl. 430. *Above*: Cardinal de Mies Recommended to the Virgin by St. Peter. Panel, 4 ft., 4 in. × 5 ft., 5/8 in. Geneva, Musée d'Art et d'Histoire. *Below, left*: The Meeting of Joachim and Anna at the Golden Gate. Panel, 5 ft., 1 in. × 3 ft., 11 in. *Right*: St. Bartholomew. Panel, 39 1/8 × 27 3/8 in. Last two, Basel, Kunstmuseum.

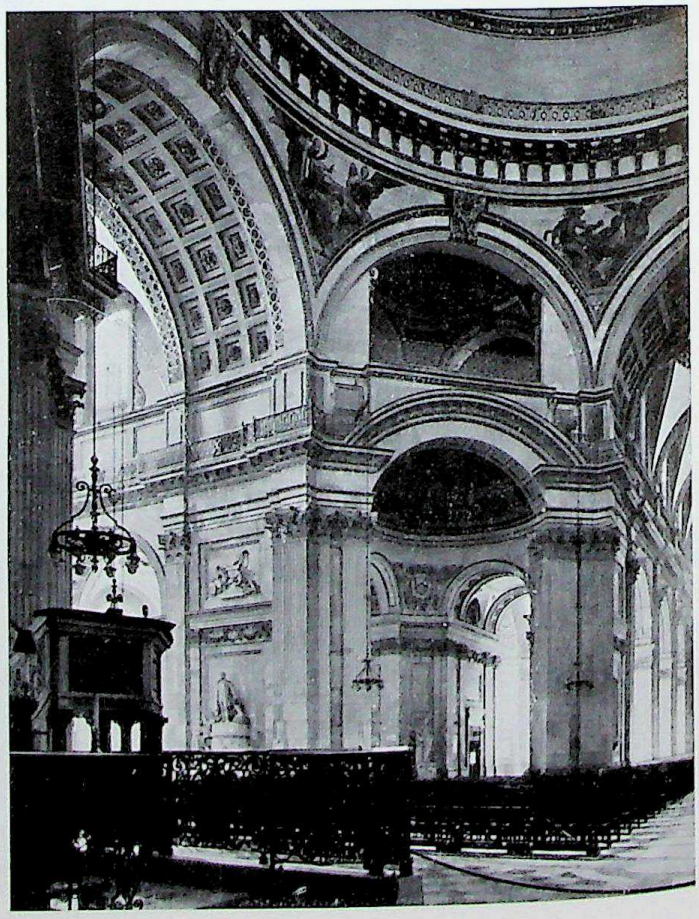
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 431. London, St. Paul's Cathedral, west front. (Cf. II, n. 147, and designs IV, n.s 186, 188.)

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



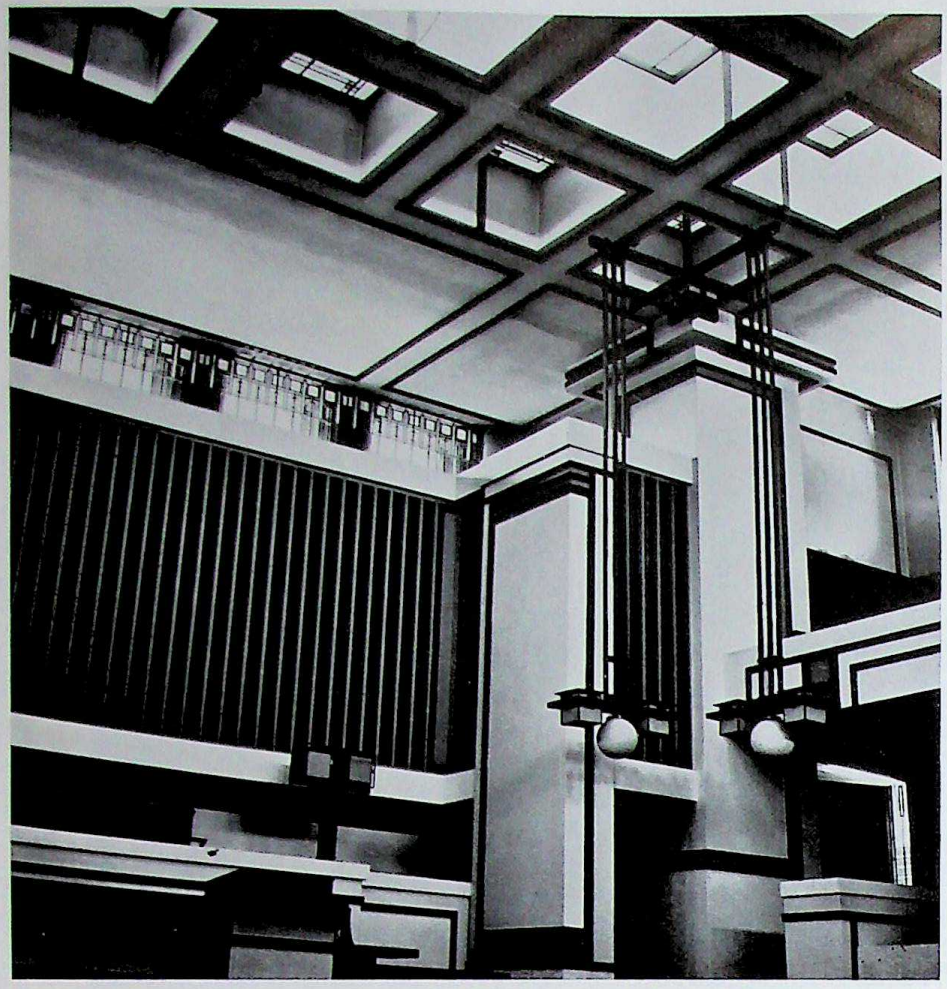


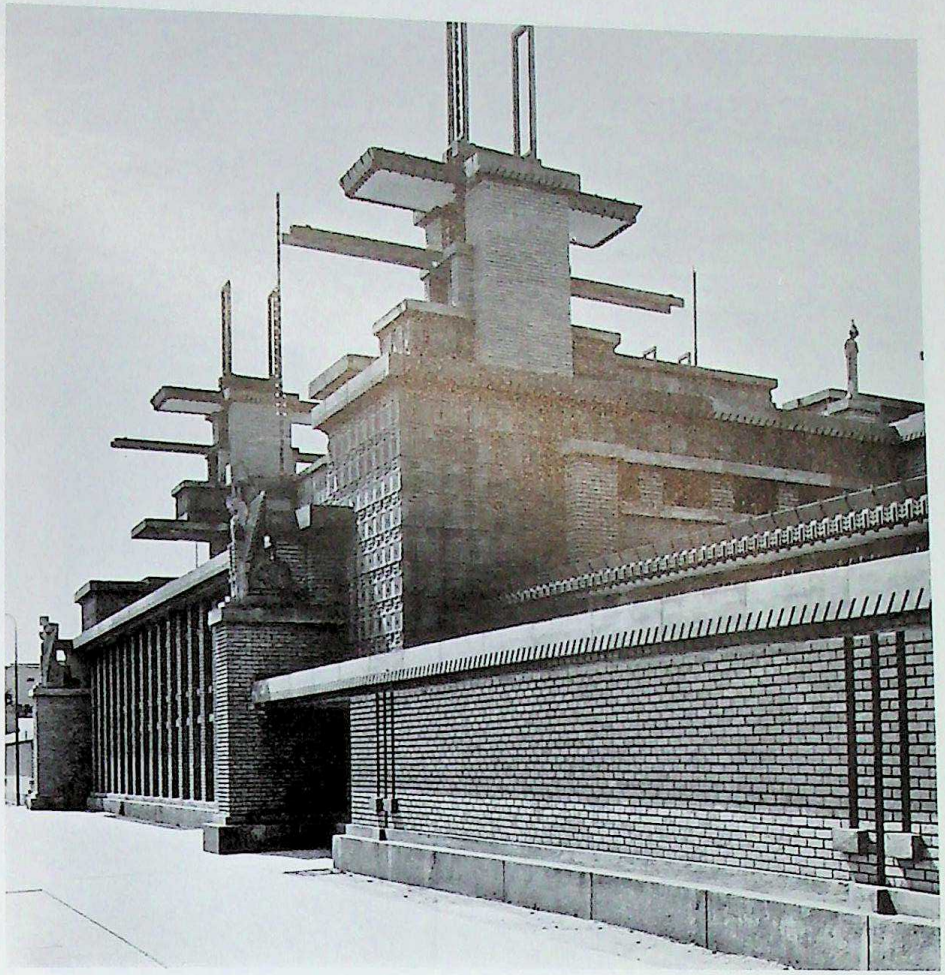


Pl. 432. *Left*: London, St. Mary-le-Bow, Cheapside, steeple and detail showing door, from the north. *Right, above*: London, St. Magnus the Martyr, from the northeast, showing steeple. *Below*: London, St. Paul's Cathedral, interior piers.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

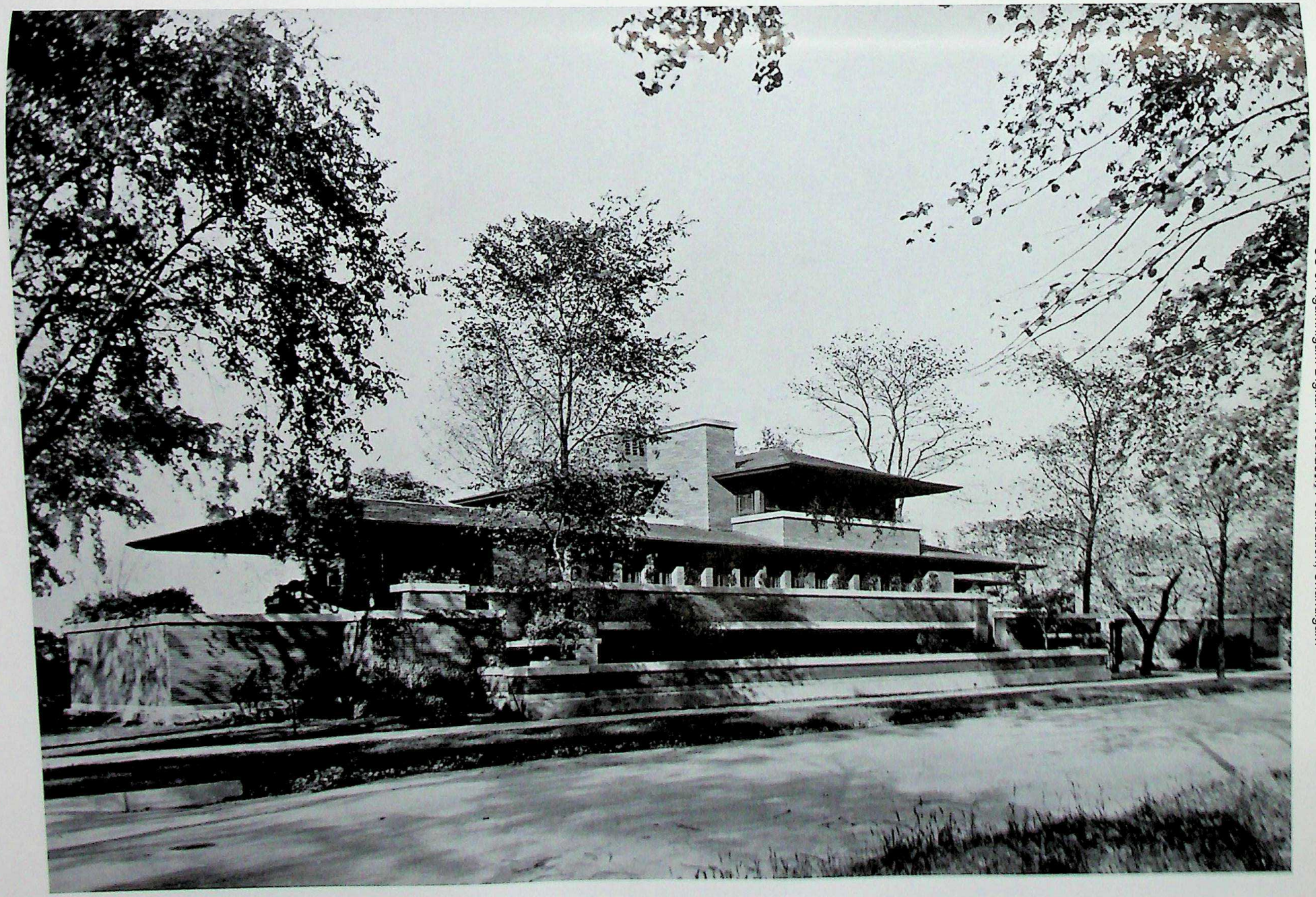
Pl. 433. *Above*: London, Royal Hospital, Chelsea, courtyard, from the south. *Below*: Hampton Court Palace, Middlesex, colonnade on the south side of the Clock Court (the King's Entrance).





CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

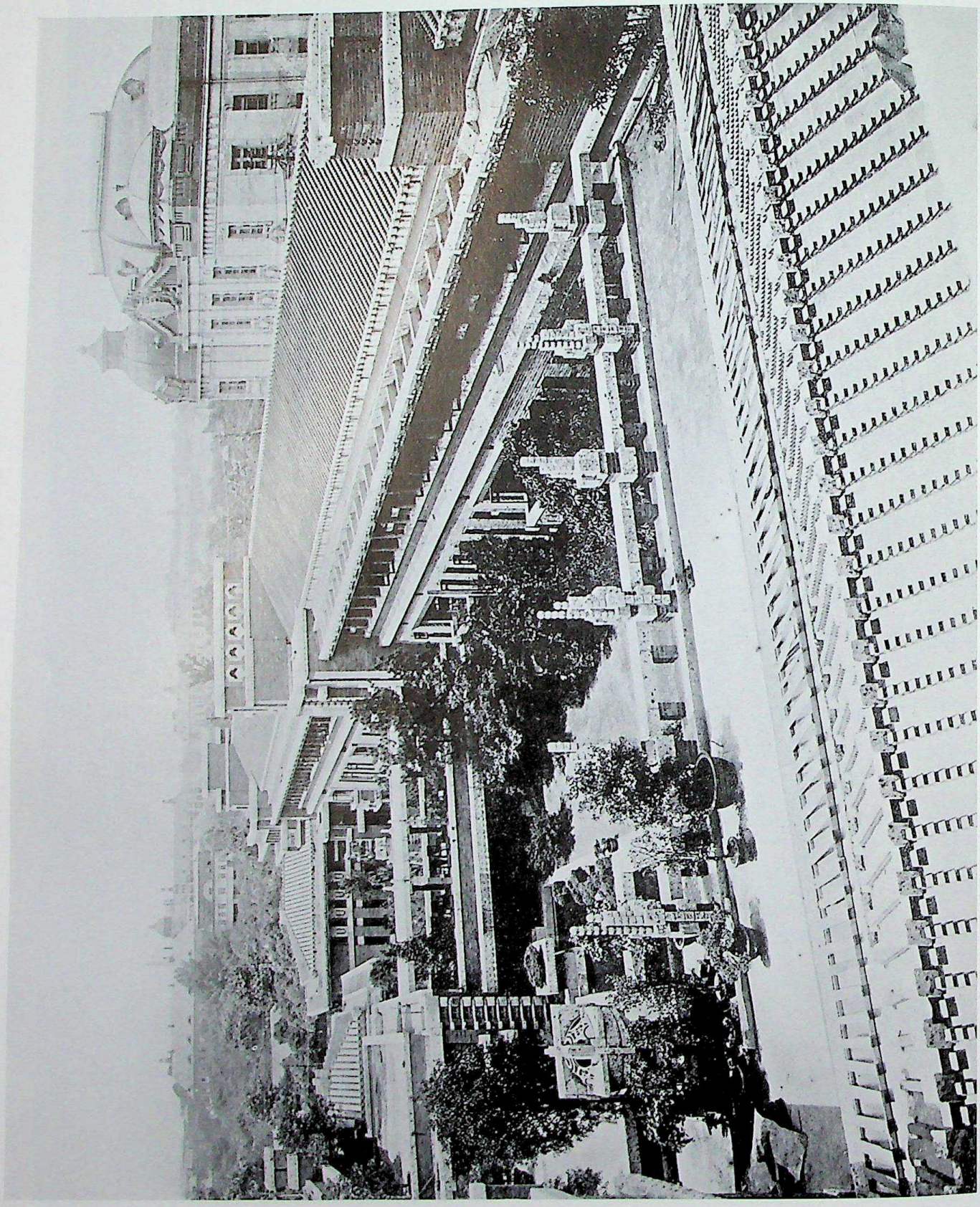
Pl. 434. *Left*: Oak Park, Ill., Unity Church, interior, view toward pulpit. *Right*: Chicago, Ill., Midway Gardens, street front. (Demolished.)



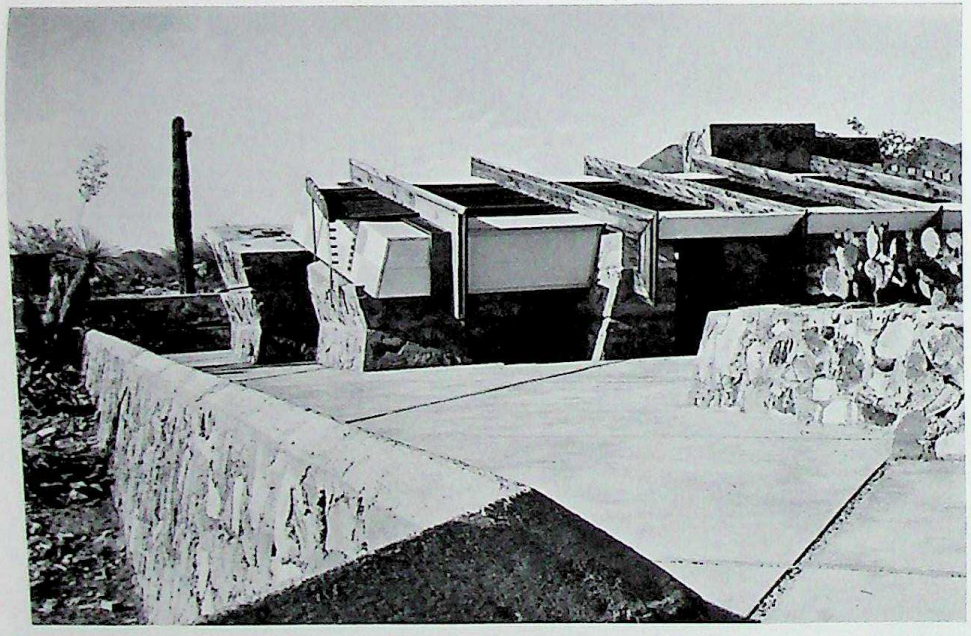
Pl. 435. Chicago, Ill., Frederick C. Robie House.

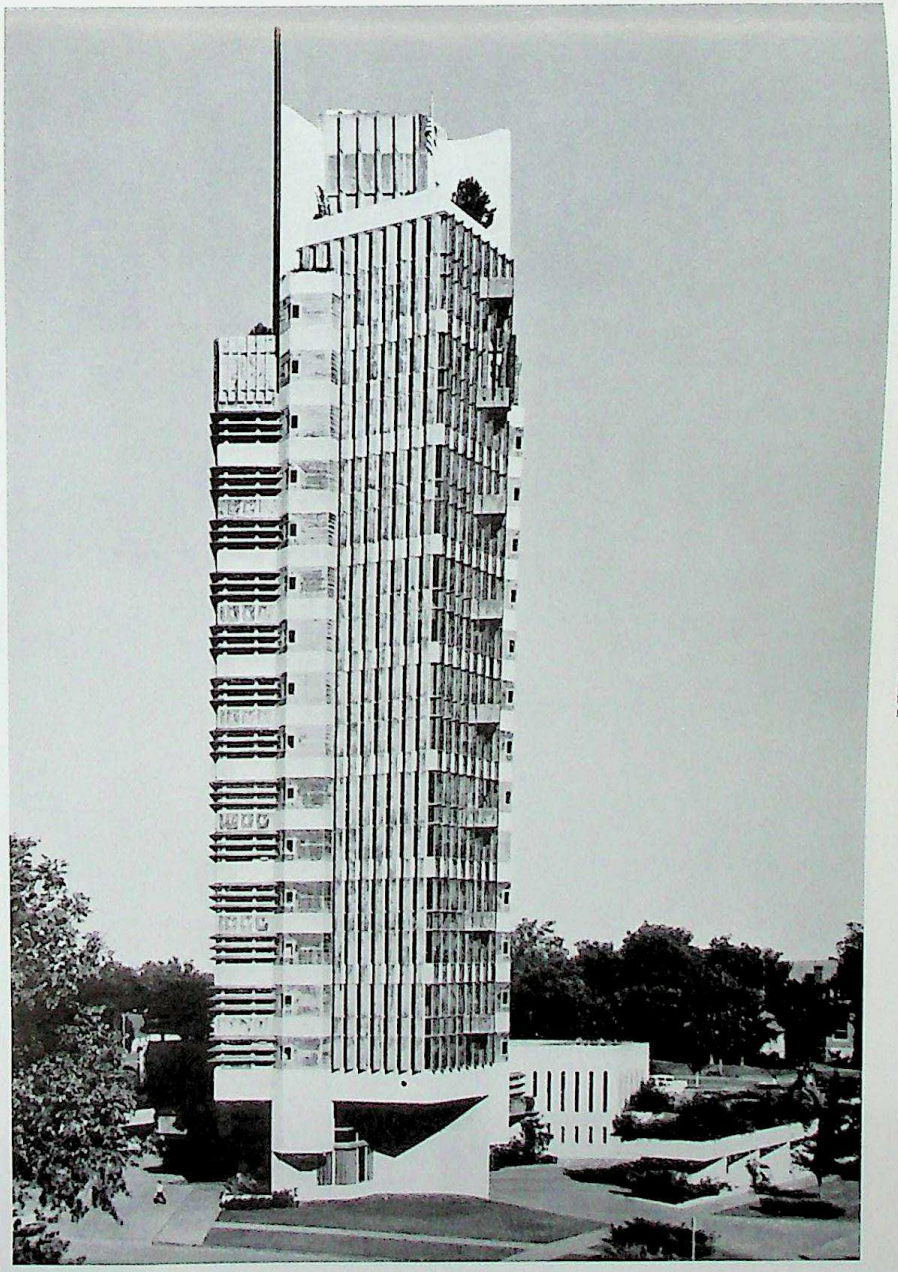
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 436. Tokyo, Imperial Hotel, view overlooking garden courts.

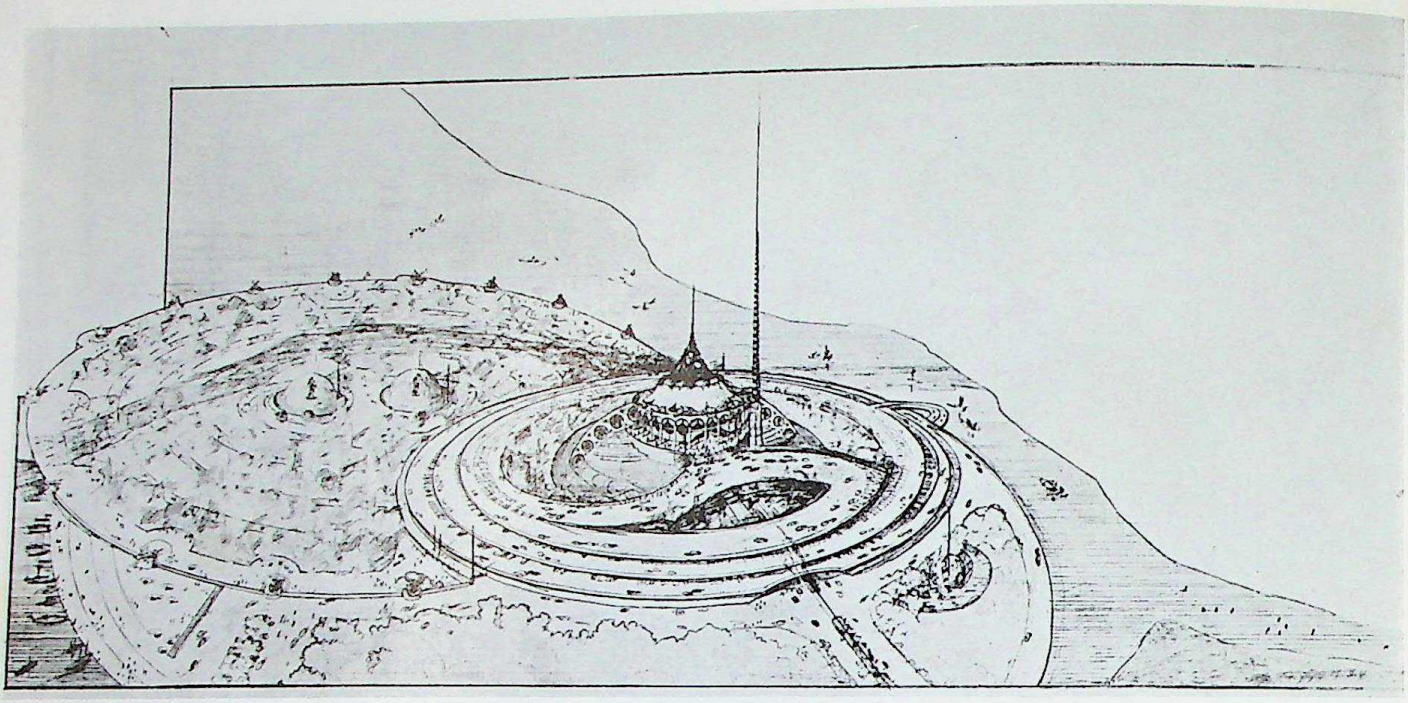


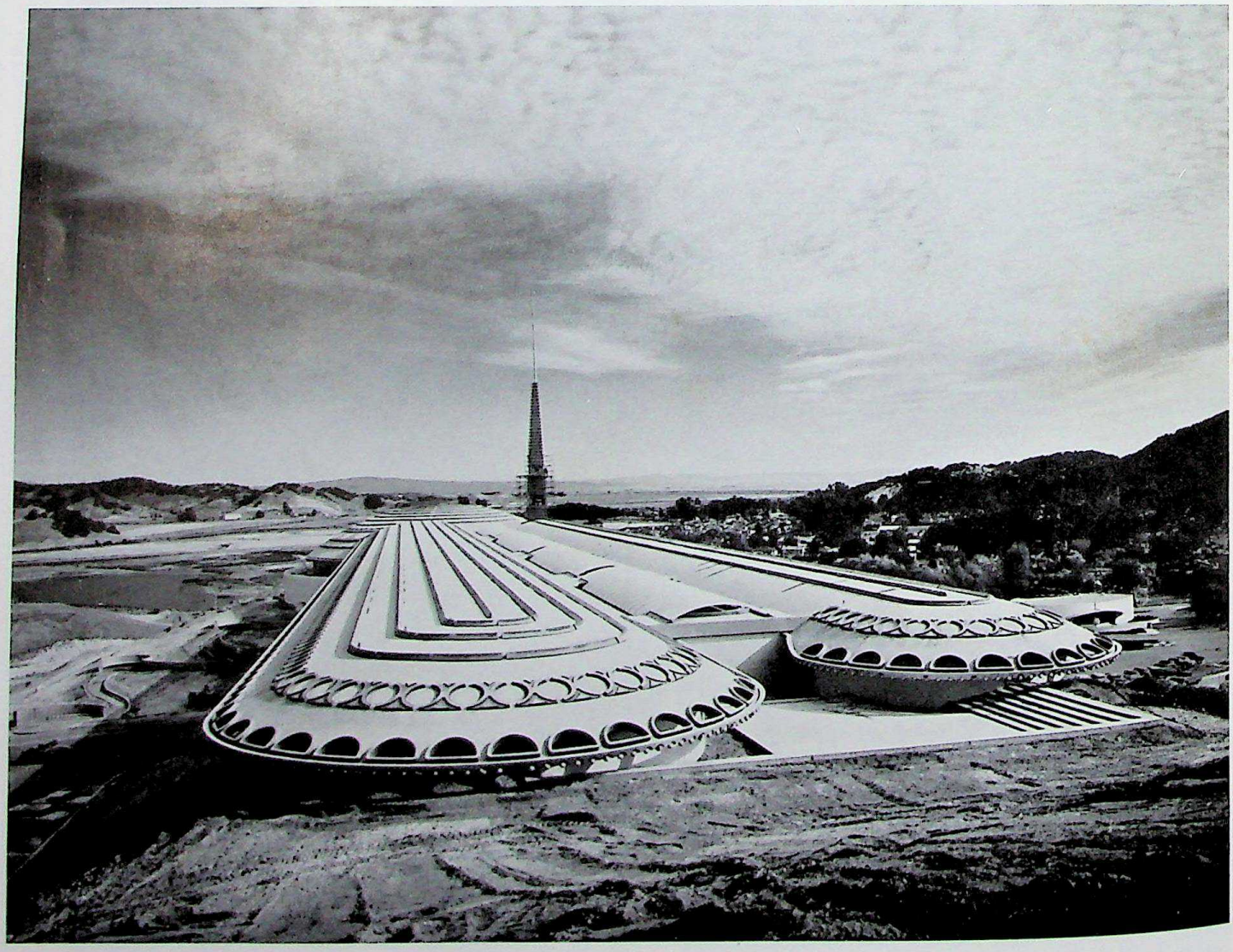


Pl. 437. *Left, above*: Scottsdale, Ariz., Taliesin West, exterior view of the drafting room. *Below*: Racine, Wis., Johnson Wax Company Administration Building, with Research Laboratory Tower in background. *Right*: Bartlesville, Okla., Price Tower.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

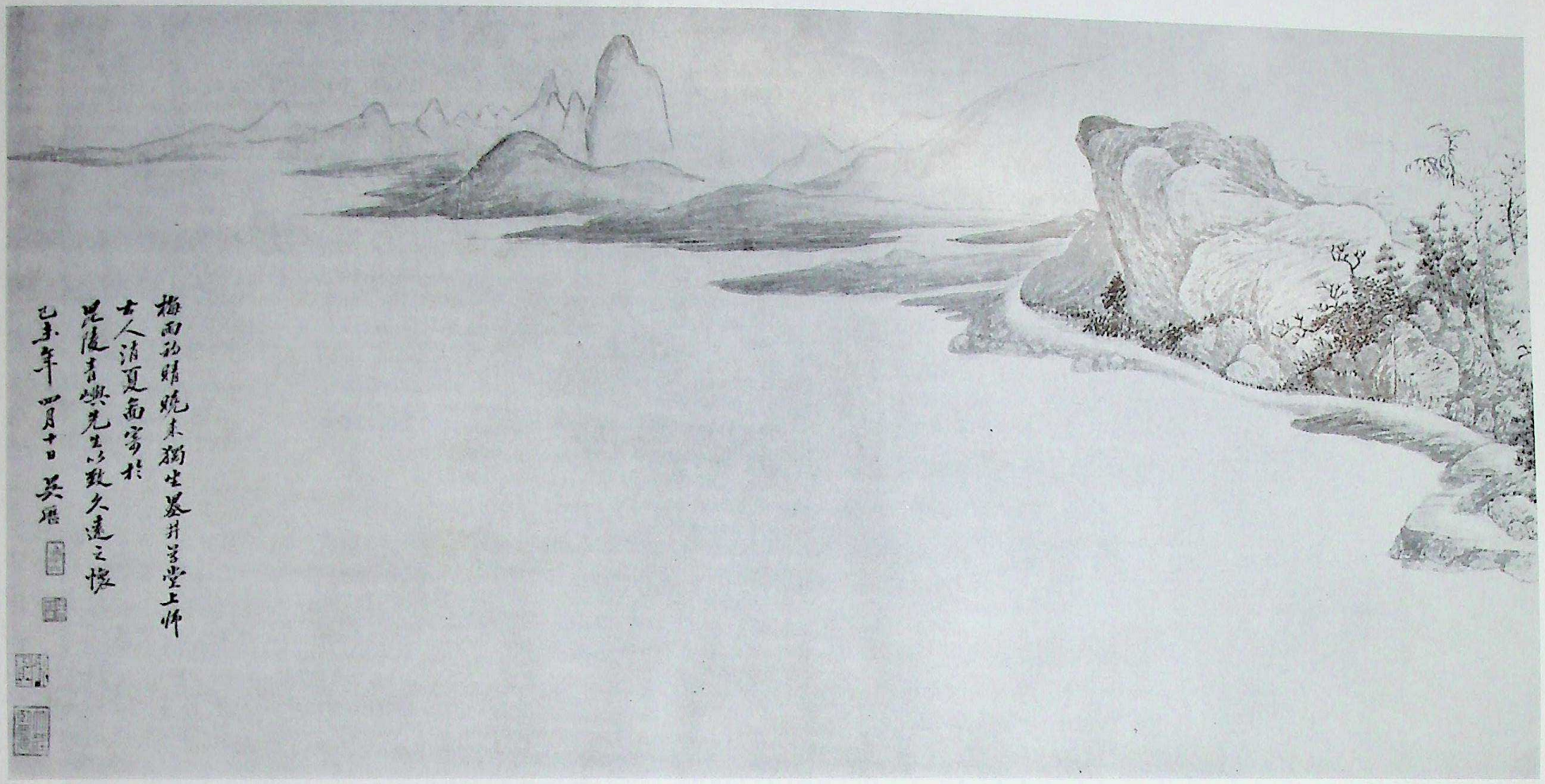




Pl. 438. *Above*: Project for Opera House and Gardens, Baghdad, Iraq. Ink, colored pencils, and gold paint on paper; $32^{7}/_{8} \times 54^{1}/_{2}$ in. Spring Green, Wis., Frank Lloyd Wright Foundation. *Below*: Marin County, Calif., Civic Center, Administration Building.

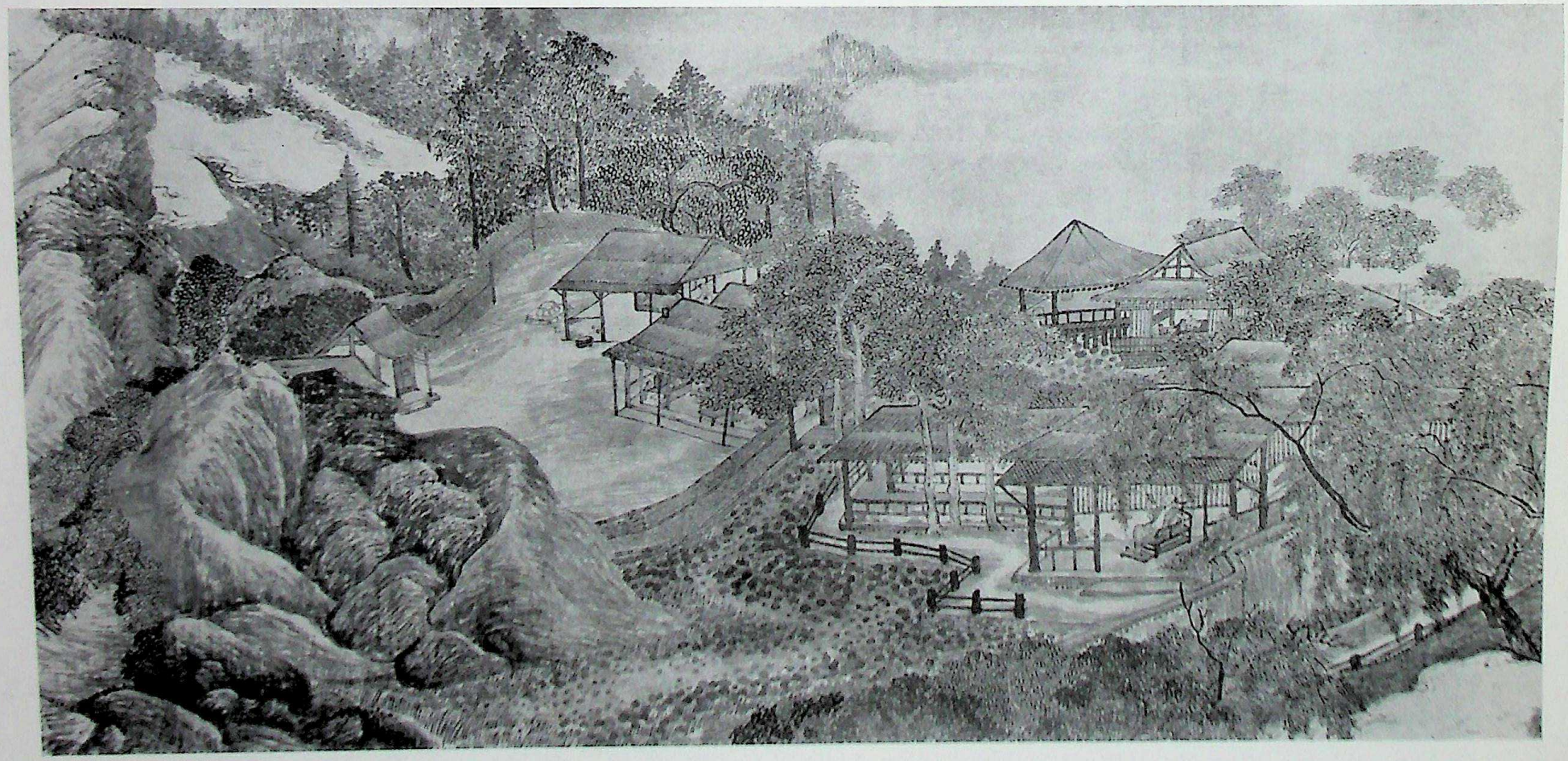
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 439. Boat on the River below a Temple, album leaf. Ink and slight color on paper, $15^{5}/_{8} \times 10^{1}/_{2}$ in. Taichung, Formosa, National Palace Museum.



Pl. 440. Landscape, detail of a hand scroll. Ink on paper, ht., ca. 10 in. New York, C. C. Wang Coll.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 441. Landscape, detail of a hand scroll. Ink on paper, ht., ca. 10 in. New York, C. C. Wang Coll.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 442. Mañjuśrī (*left*) and Samantabhadra (*right*), paintings of the Yüan period, formerly attributed to Wu Tao-tzŭ and perhaps remotely reflecting his style. Ink and color on silk; each, 4 ft., 8¹/₄ in. × 2 ft. Kyoto, Tōfukuji.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 443. Bodhisattva, 8th cent., perhaps in the manner of Wu Tao-tzŭ. Ink on hemp cloth, 4 ft., 6 1/2 in. × 4 ft., 4 3/8 in. Nara, Japan, Shōsōin.

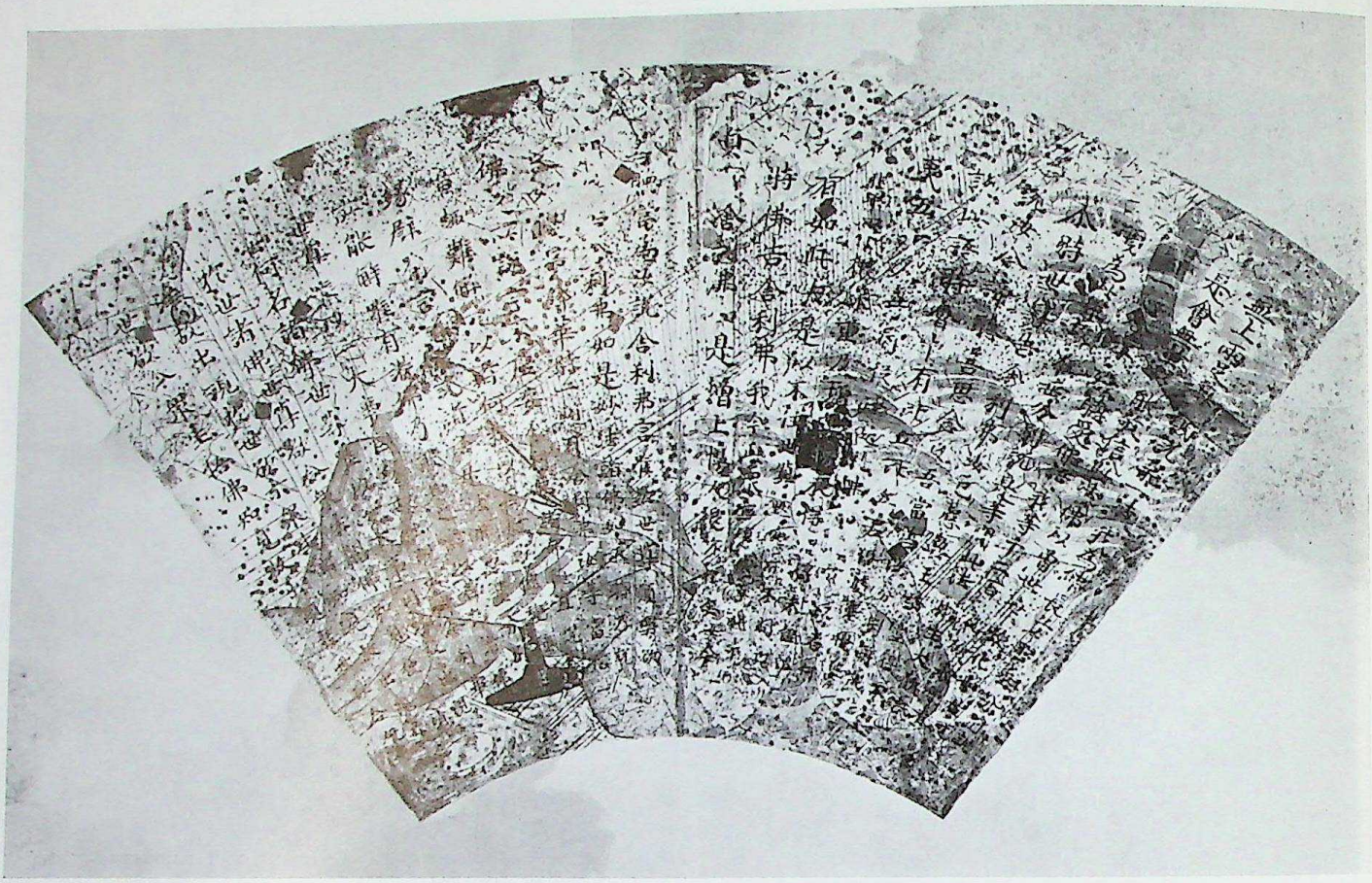
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 444. *Above*: Po Li Tien's mountain retirement, detail of a six-panel folding screen (cf. VIII, PL. 277), late 11th–early 12th cent. Color on silk. Kyoto, Kyōōgokokuji (Tōji). *Below*: The Suzumushi ("bell-ring" insect) scroll of the *Genji Monogatari*, attributed to Fujiwara-no-Takayoshi, detail, ca. 1119. Color on paper, ht., 8 5/8 in. Tokyo, Gotō Art Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

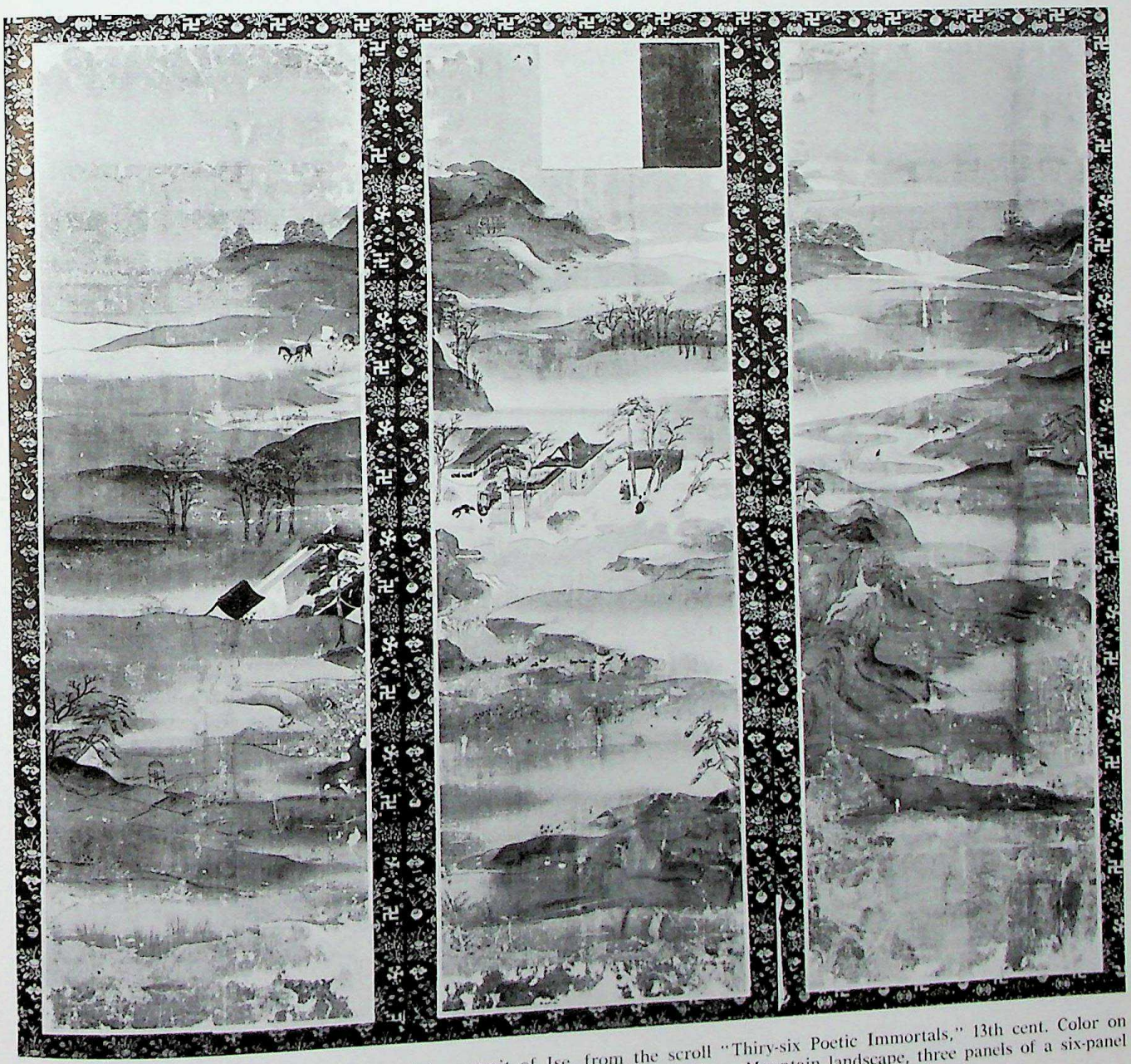
Pl. 445. The Heike-nō-kyō scrolls, detail of painting on the reverse of the second scroll of Hōben-bon (from the Hoke-kyō), 1164-67. Color with gold and silver dust on paper, ht., 10½ in. Hiroshima, Itsukushima Shrine.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 446. *Above*: Fan with sutra superposed on a genre scene, 1188 (?). Ink and color on paper, ht., 10 in. Sakamoto, Shiga prefecture, Saikyōji. *Below*: Tokiwa Mitsunaga (attrib.), Story of Ban Dainagon, detail of the second scroll, late 12th cent. Color on paper, ht., 12 in. Tokyo, Sakai Coll.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

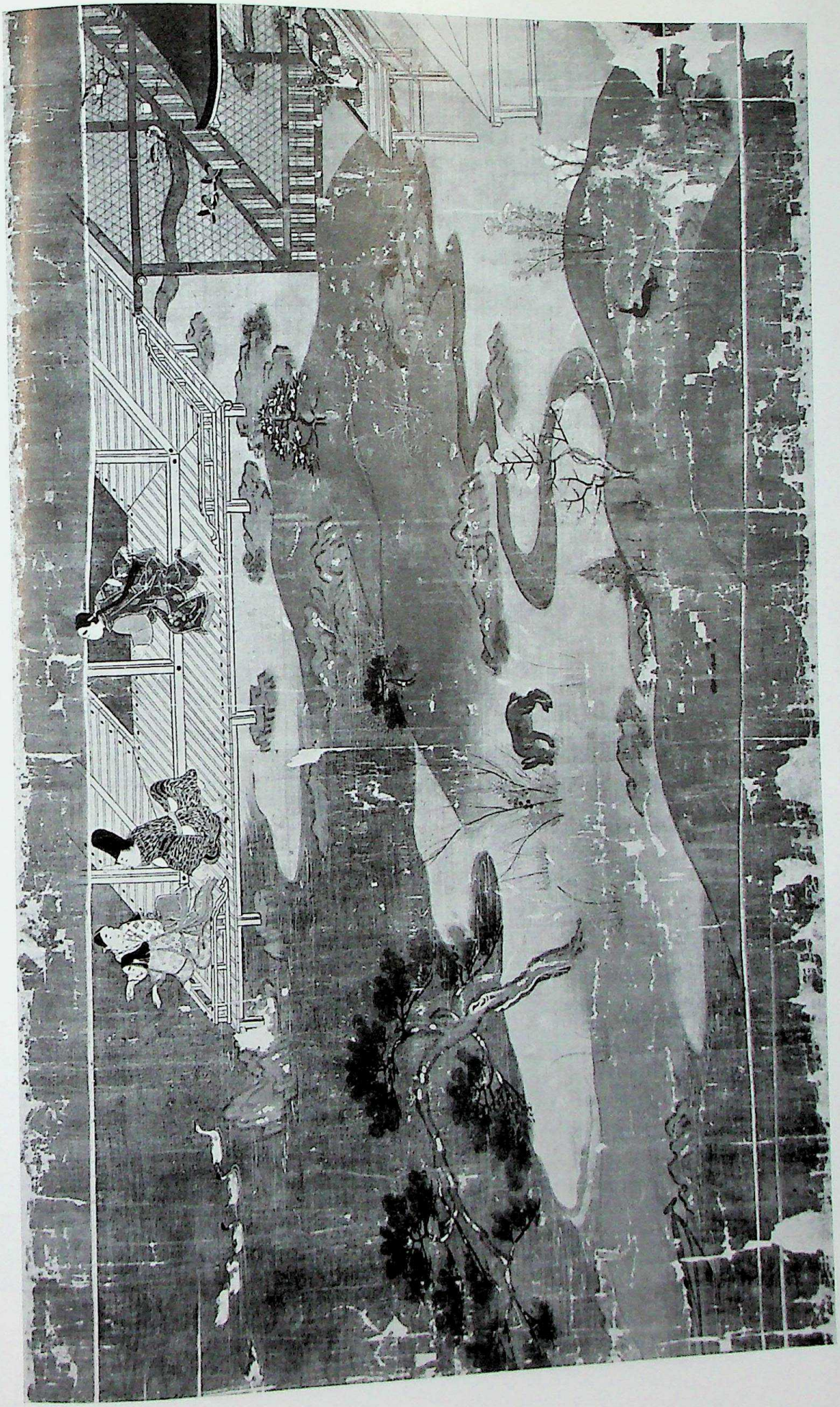


Pl. 447. *Above*: Fujiwara no Nobuzane (attrib.), portrait of Ise, from the scroll "Thiry-six Poetic Immortals," 13th cent. Color on paper, $14^{1}/_{2} \times 35^{7}/_{8}$ in. Tokyo, M. Hinohara Coll. (Cf. VIII, PL. 304.) *Below*: Mountain landscape, three panels of a six-panel screen, late 13th cent. Color on silk, ht., $43^{1}/_{4}$ in. Kyoto, Jingoji.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

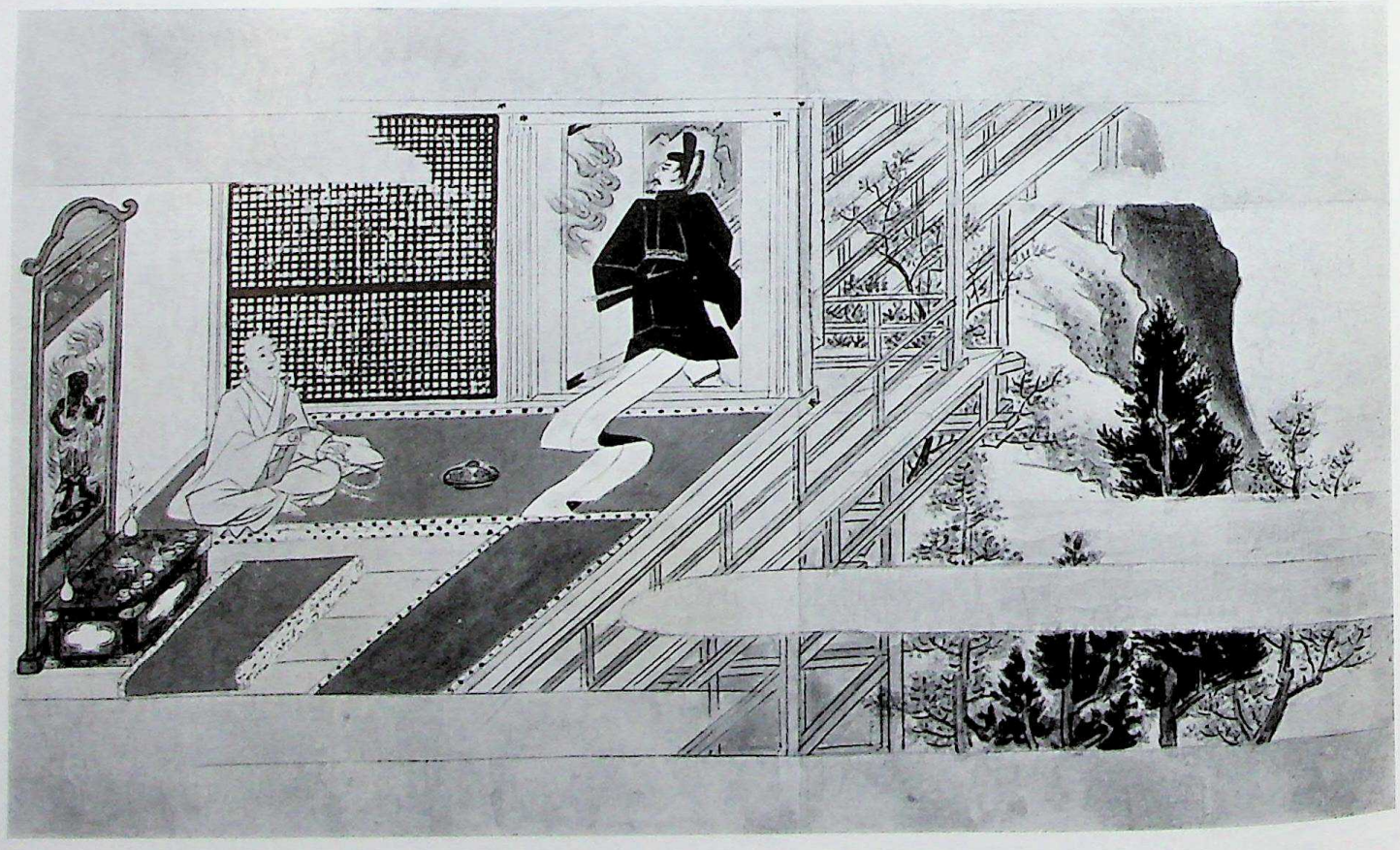
Pl. 448. Fujiwara no Nobuzane (attrib.), the Kitano Tenjin Engi scrolls, detail of the sixth book, ca. 1219. Color on paper, ht., 20½ in. Kyoto, Kitano Shrine.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



Pl. 449. Takashina Takakane, the Kasuga Gongen Reigenki, detail of the fifth scroll, 1309. Color on silk, ht., 16 1/8 in. Tokyo, National Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

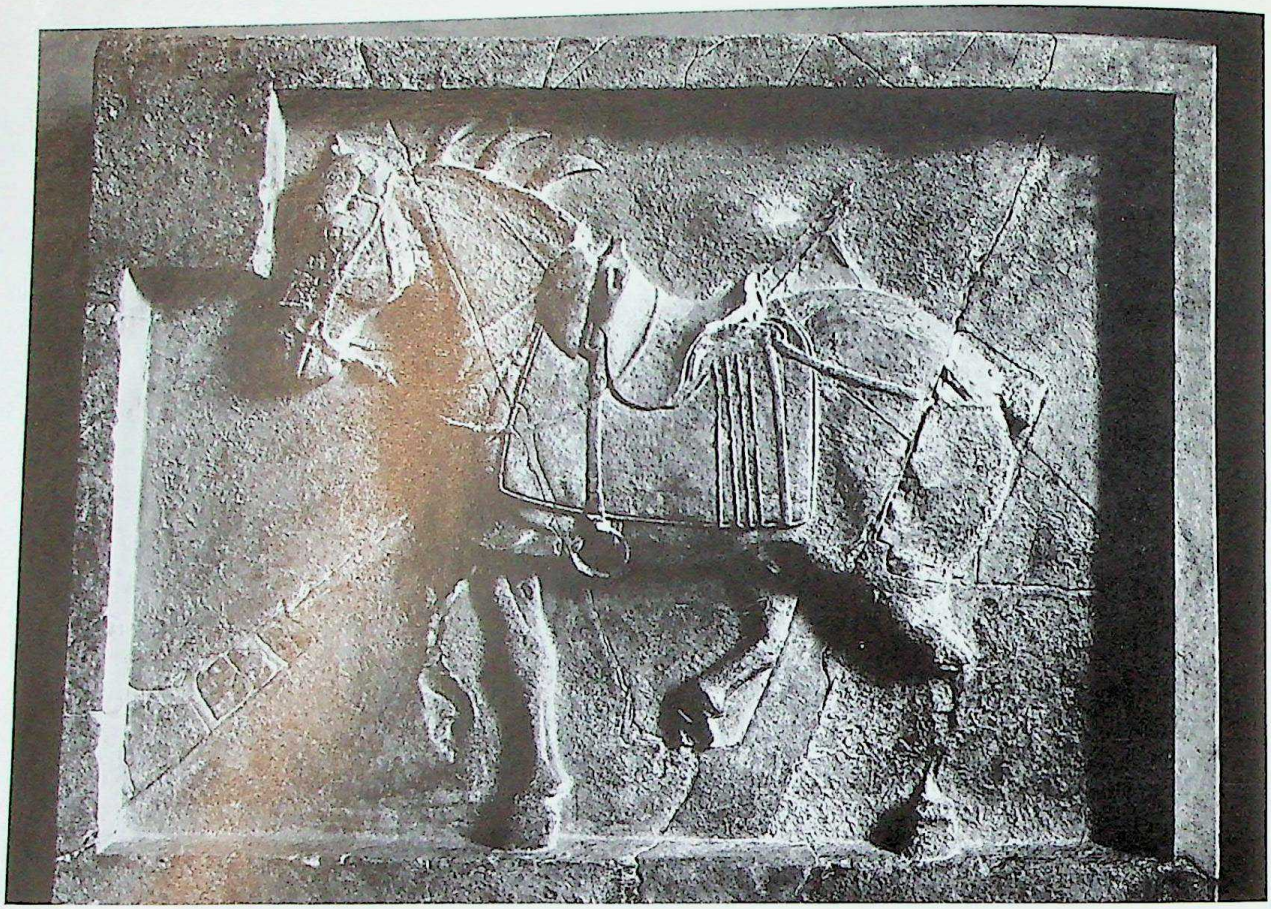


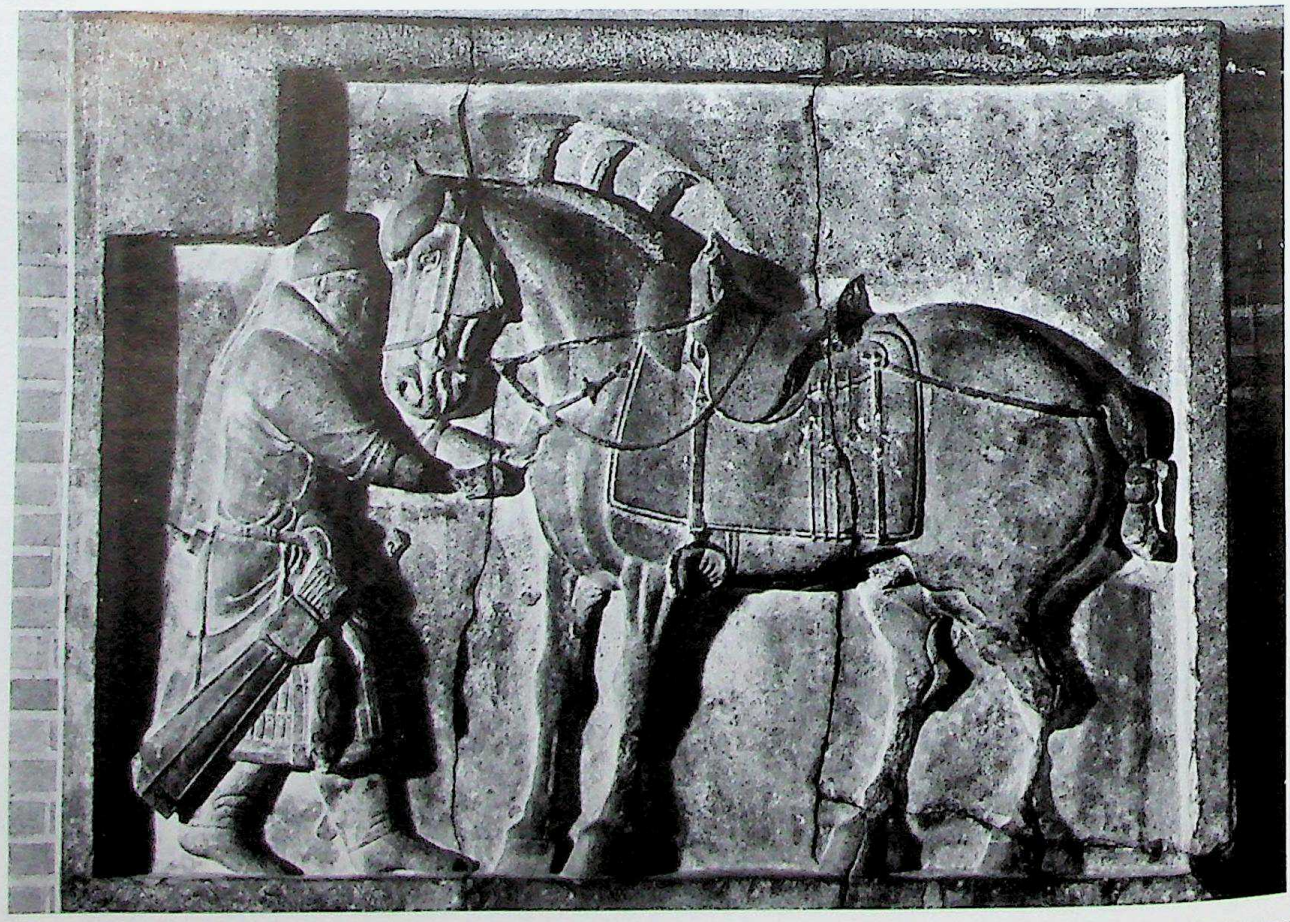
Pl. 450. *Above*: Gōshin, portrait of the emperor Hanazono, 1338. Slight color on paper, ht., 12¼ in. Kyoto, Chōfukuji. *Below*: Tosa Mitsunobu, Legends of the Kitano Shrine, detail of the second scroll, 1503. Color on paper, ht., 13⅞ in. Kyoto, Kitano Shrine.

Pl. 451. Imperial portraits, details of the Scroll of the Emperors. Ink and color on silk, ht., 20 1/8 in. Boston, Museum of Fine Arts.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

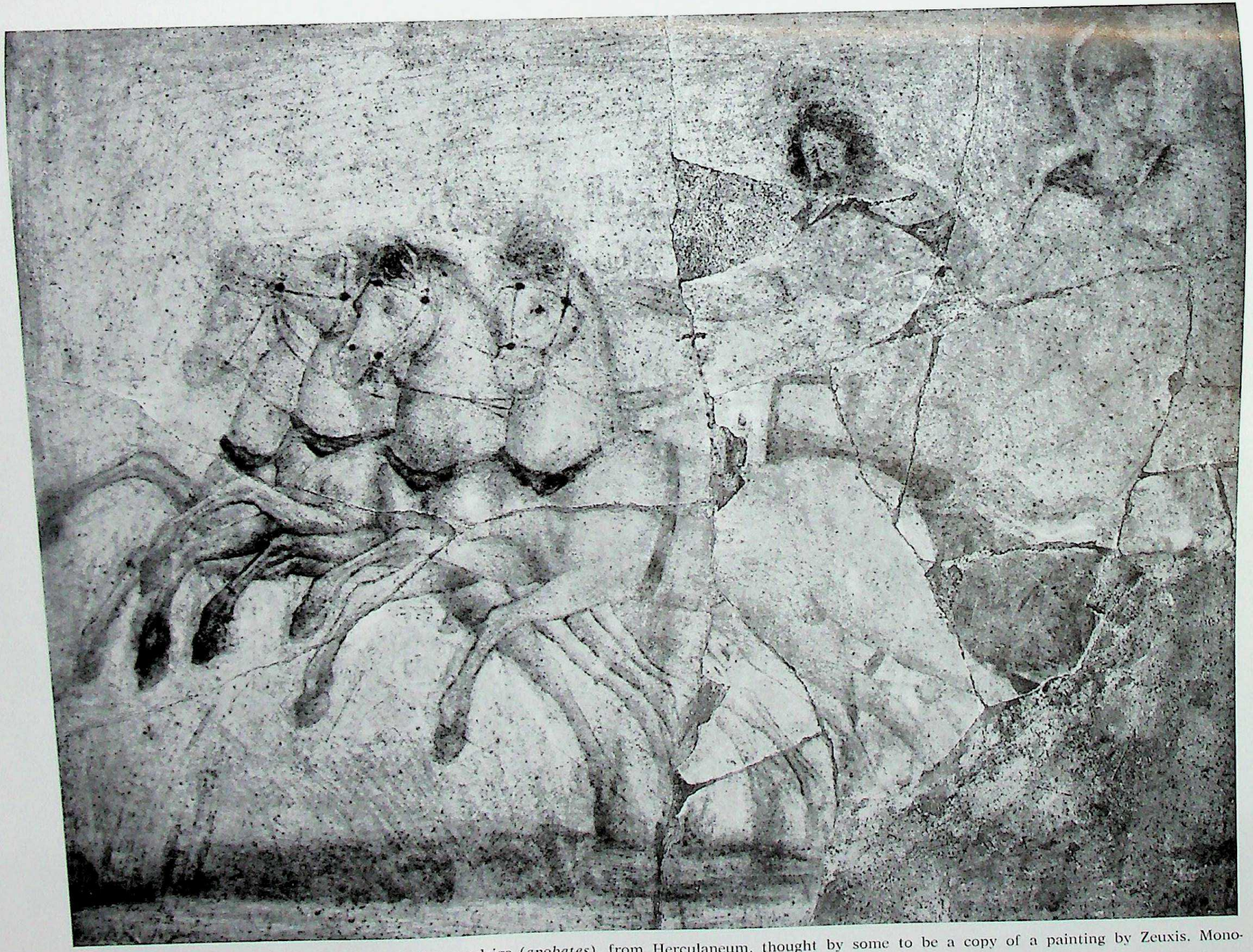
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh





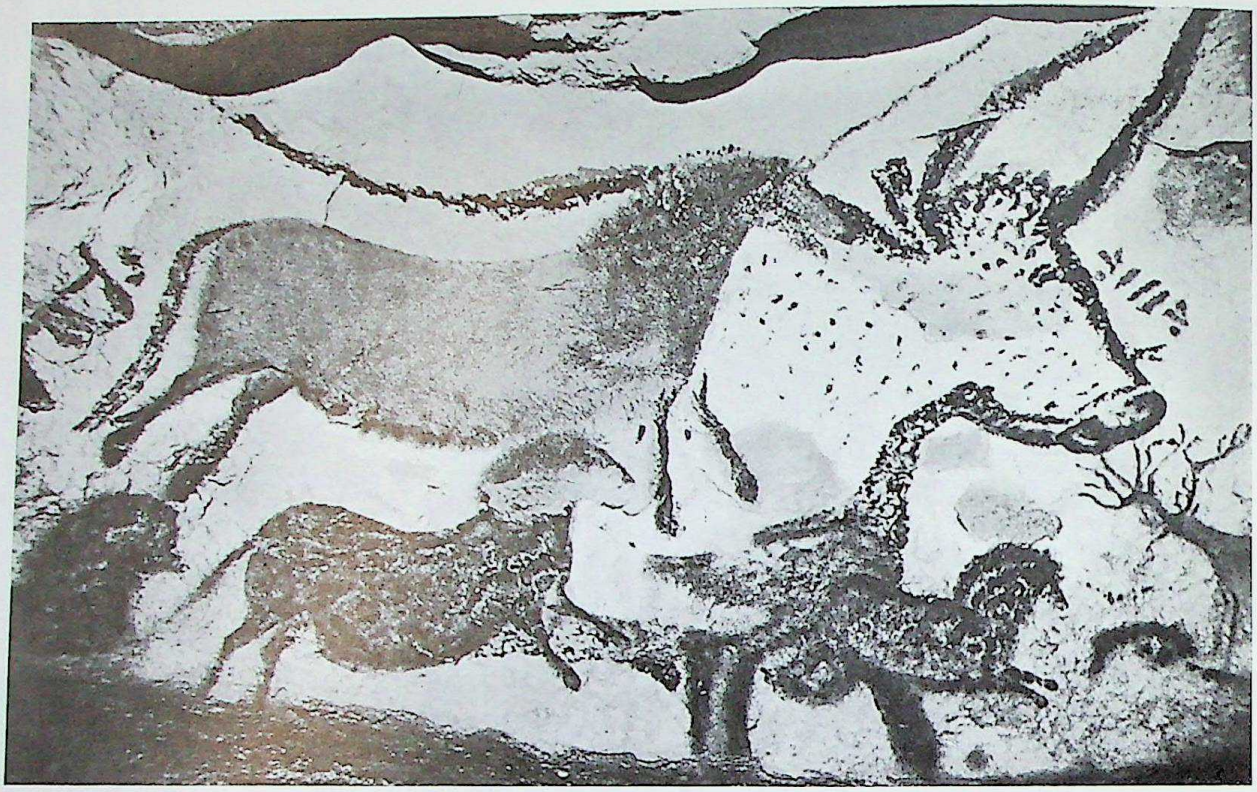
Pl. 452. Two of the Six Horses (the Emperor's favorite chargers), from the tomb of the T'ang Emperor T'ai-tsung, near Ch'ang-an, Shensi, China, early 7th cent. Stone reliefs carved from designs attributed to Yen Li-pén. Philadelphia, University Museum. *Above*: Ht., 5 ft., 5½ in. *Below*: Ht., 5 ft., 8 in.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



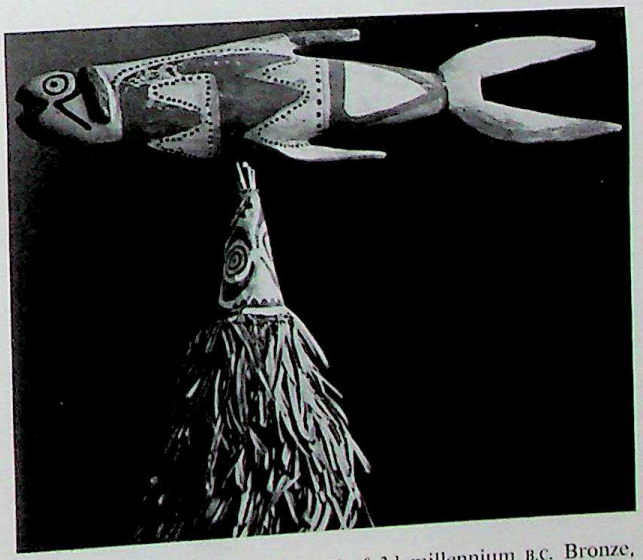
Pl. 453. Athlete preparing to jump from a moving quadriga (*apobates*), from Herculaneum, thought by some to be a copy of a painting by Zeuxis. Monochrome on marble, $18^{1}/_{2} \times 22^{7}/_{8}$ in. Naples, Museo Nazionale.

CC-0. Agamnigam Digital Preservation Foundation Chandigarh



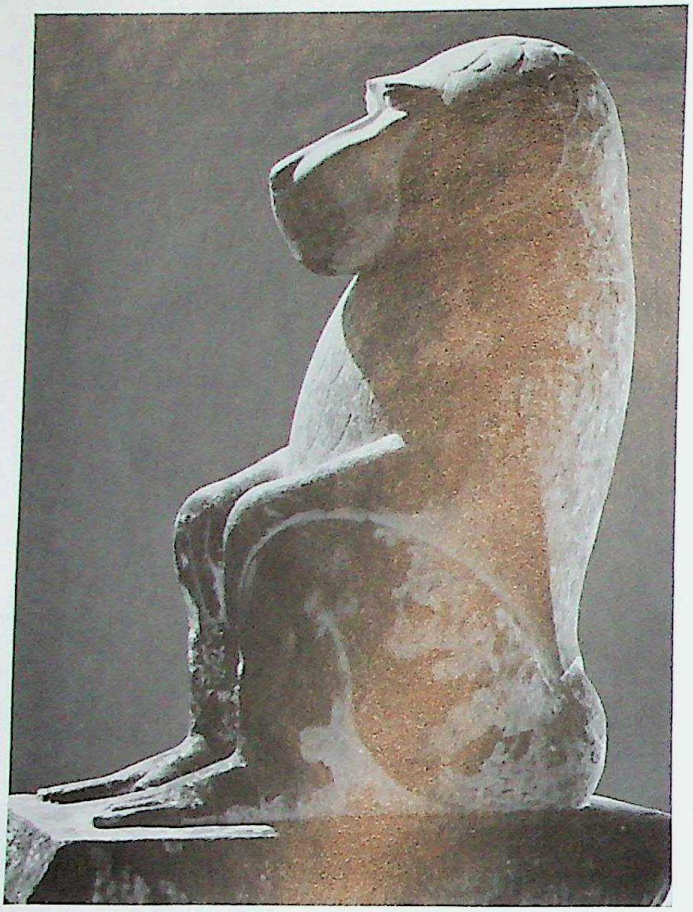
Pl. 454. Prehistoric animal representations. *Above*: Large bull and running horses in Lascaux Cave, Dordogne, France, Upper Paleolithic period. Rock painting. *Below*: Stylized goat, birds, and man in the Tajo de las Figuras (cf. XI, PL. 292), Cádiz, Spain, Neolithic period. Rock painting (water-color reproduction).

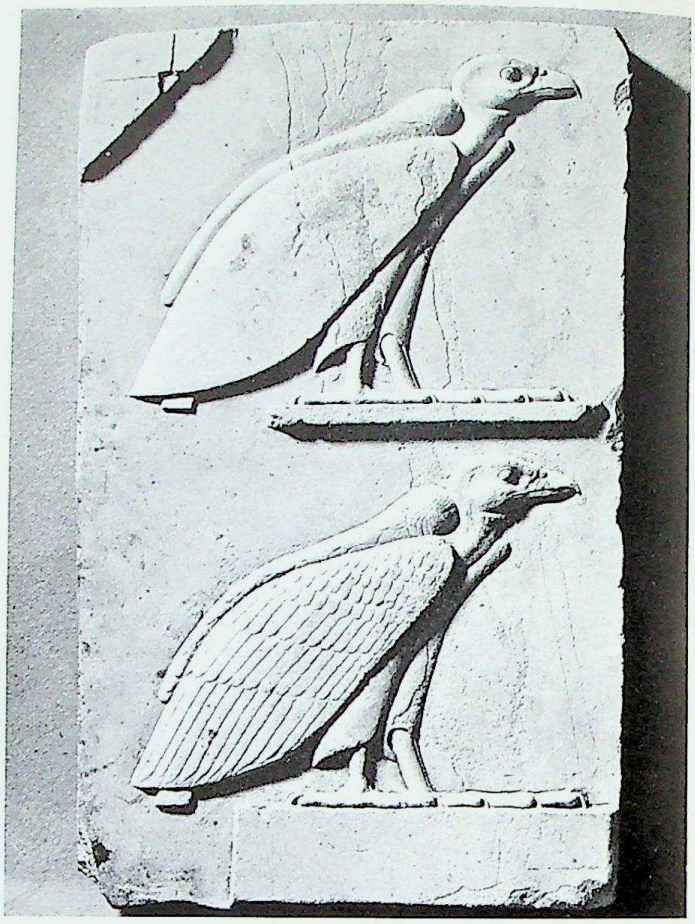
CC-0. Kamalam Digital Presevation Foundation, Chandigarh

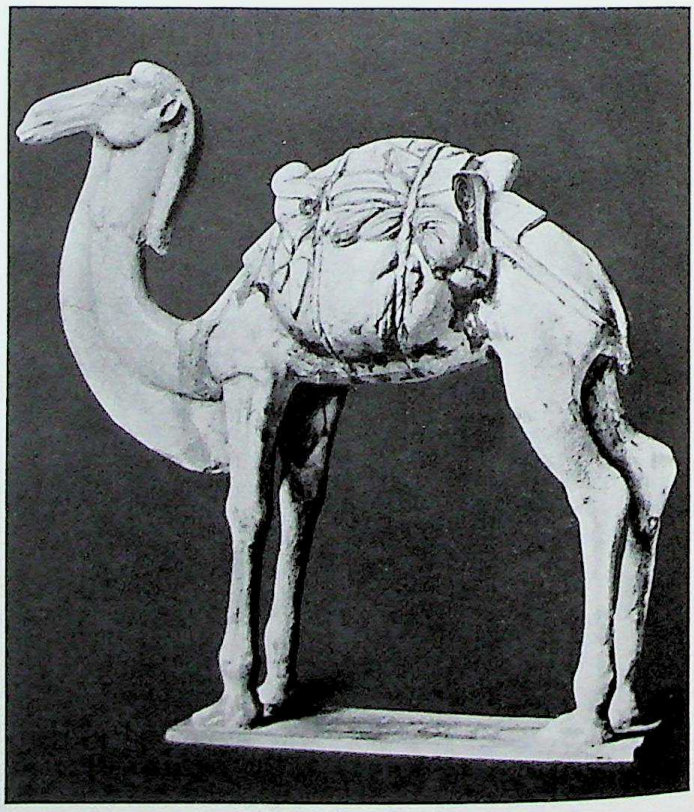


Pl. 455. Elementary animal representations. *Left, above*: Deer, from Horoztepe, Anatolia, second half of 3d millennium B.C. Bronze, ht., 2 1/2 in. Ankara, Archaeological Museum. *Center*: Duck-shaped vase, from Cyprus, ca. 725 B.C. Painted terra cotta, l., 7 5/8 in. Leiden, Rijksmuseum. *Below*: Eagle, from the Iberian sanctuary of Despeñaperros, Jaén, Spain, Hellenistic period. Madrid, Museo Arqueológico Nacional. *Right, above*: Khant figurine of a reindeer, from the Ob River basin, Siberia. Wood. Leningrad, Ethnographical Museum of the Peoples of the U.S.S.R. *Center*: Sculpture with the figure of a reptile, from the Sepik River area, New Guinea. Wood. Rome, Lateran Museums. *Below*: Fish on a dance hat, from Montague Bay, New Britain, collected 1908. Painted wood, bark, and coconut leaves; l. of fish, 43 1/4 in. Hamburg, Museum für Völkerkunde.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

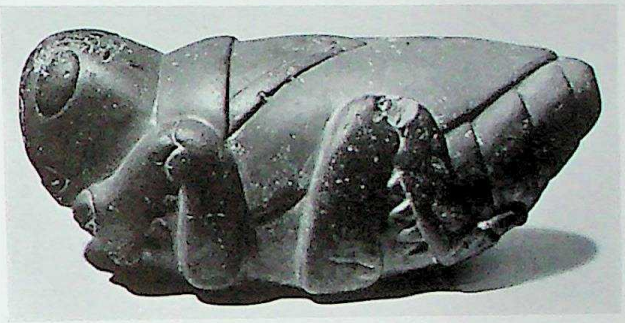


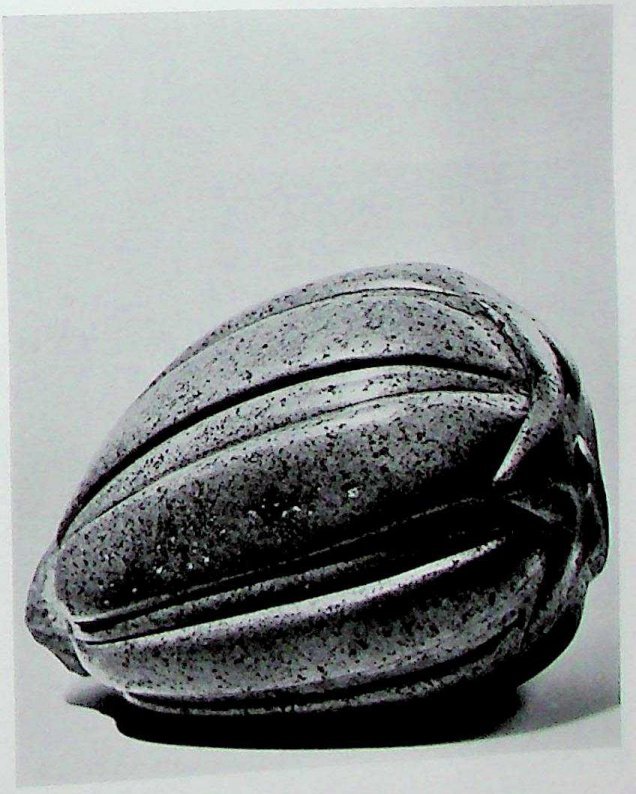




Pl. 456. The great ancient civilizations. *Above*: Egypt. *Left*: Baboon, from Girga (?), probably early 2d millennium B.C. Limestone, ht., 20 7/8 in. *Right*: Vultures on a sculptor's teaching model, showing two stages in the carving, from Saqqara, 4th cent. B.C. (in imitation of 5th-dynasty reliefs). Limestone, ht., 7 1/8 in. *Below, left*: Assyria. Horse, relief from the palace of Ashurbanipal, Nineveh, 7th cent. B.C. Alabastrine limestone. All three, Paris, Louvre. *Right*: China. Camel, tomb figurine, T'ang dynasty (618–906). Terra cotta.

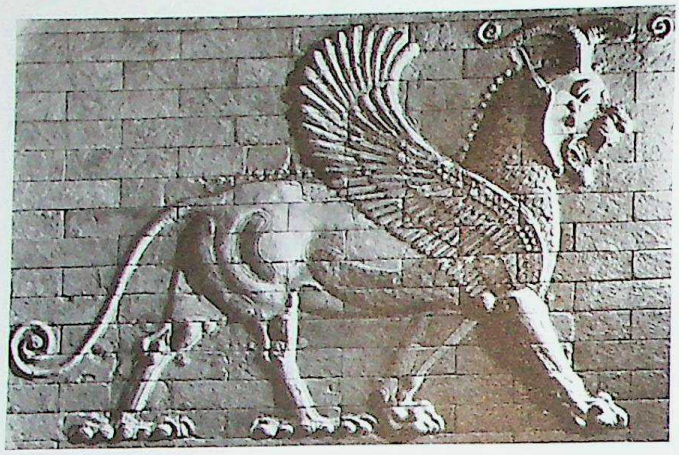
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

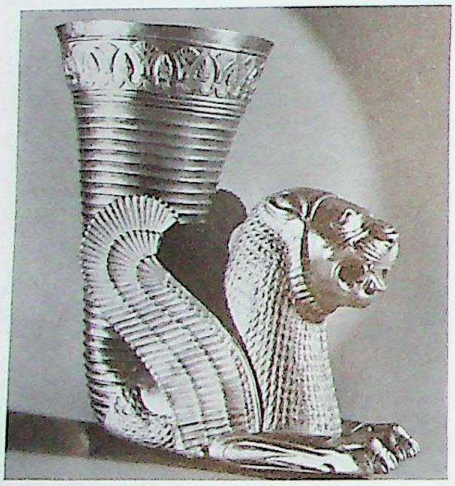


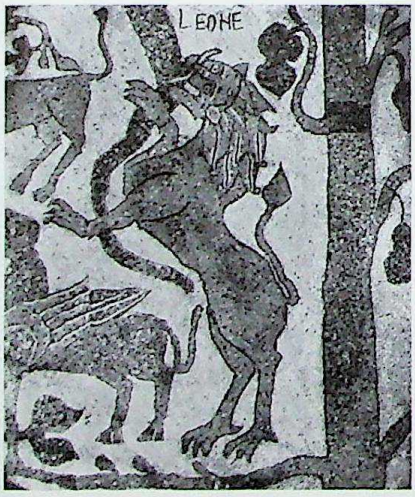


Pl. 457. The great civilizations. *Left*: China. *Above*: Guardian lion, T'ang dynasty (618–906). White marble, ht., 11 3/4 in. Kansas City, Mo., Nelson Gallery of Art and Atkins Museum. *Below*: Pair of peaches, 990–95. Gray jade, l., 3 1/4 in. London, Cunliffe Coll. *Right*: Pre-Columbian. *Above*: Dog (*techichi*), from Colima state, Mexico, West Mexican cultures (300–1250). Painted burnished clay, l., 16 1/2 in. *Center*: Grasshopper, from Mexico City, late postclassic period (1250–1521). Red carnelian, l., 18 7/8 in. *Below*: Gourd, from Mexico City, late postclassic period. Diorite, l., 12 1/4 in. Last three, Mexico City, Museo Nacional de Antropología.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

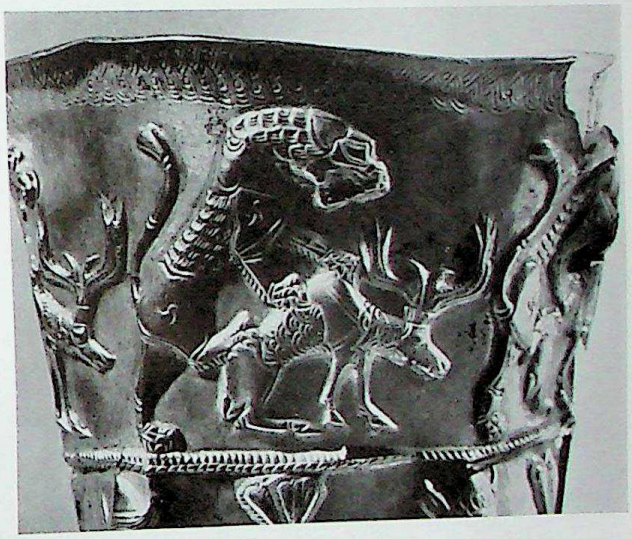


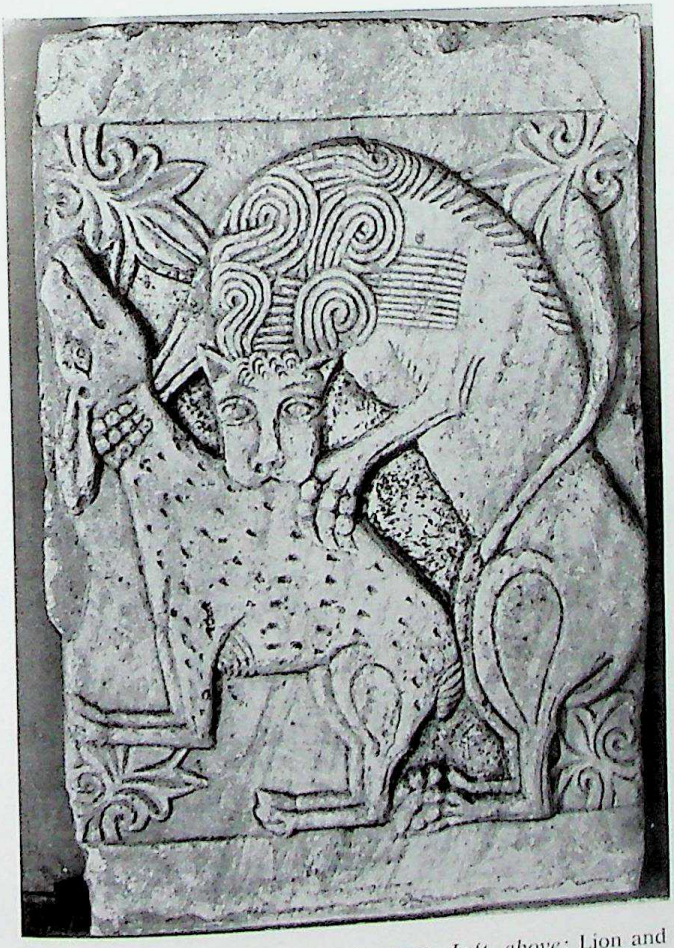


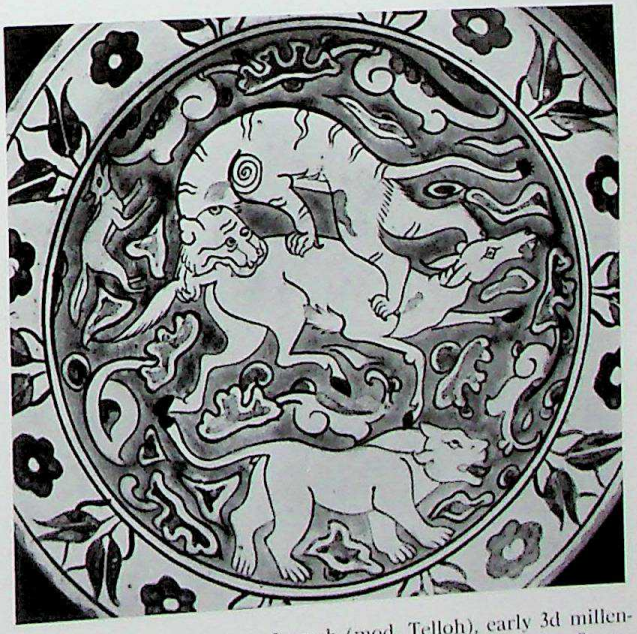


Pl. 458. The Near Eastern tradition in real and imaginary beasts. *Above, left*: Achaemenid horned griffin, on a panel from the Palace of Darius, Susa (mod. Shush), Khuzistan, early 5th cent. B.C. Glazed brick. Paris, Louvre. *Right*: Hittite griffin, on a relief from Gazi Orman Ciftligi, Turkey, ca. 9th–8th cent. B.C. Basalt. Ankara, Archaeological Museum. *Center, left*: Achaemenid winged lion protoma, rhyton from Ecbatana (mod. Hamadan), 5th cent. B.C. Gold, ht., 8 5/8 in. Teheran, Archaeological Museum. *Middle*: Greek female griffin, from Olympia, ca. mid-7th cent. B.C. Sheet bronze, ht., 11 in. Olympia, Greece, Archaeological Museum. *Right*: Sassanian senmurv, relief, 6th–7th cent (?). Marble, 42 1/8 × 49 1/4 in. Istanbul, Archaeological Museums. *Below, left*: Corinthian panther, detail of the Dodwell pyxis, first quarter of 6th cent. B.C. Munich, Staatliche Antikensammlungen. *Middle*: Lion, detail of mosaic with apocalyptic animals, right aisle of the Cathedral of Otranto, Italy, 1163–66. *Right*: Lion, relief from Stara Zagora, Bulgaria, 7th–8th cent. Red sandstone. Sofia, Bulgaria, Archaeological Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

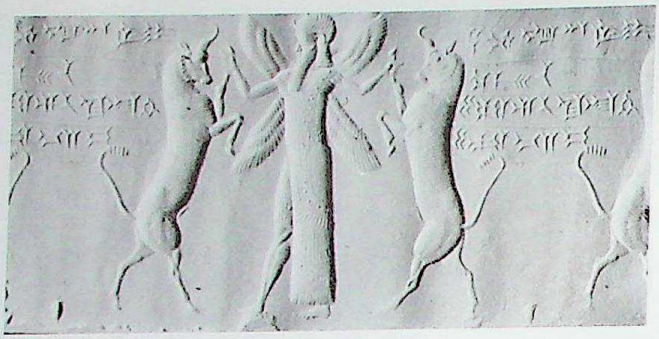


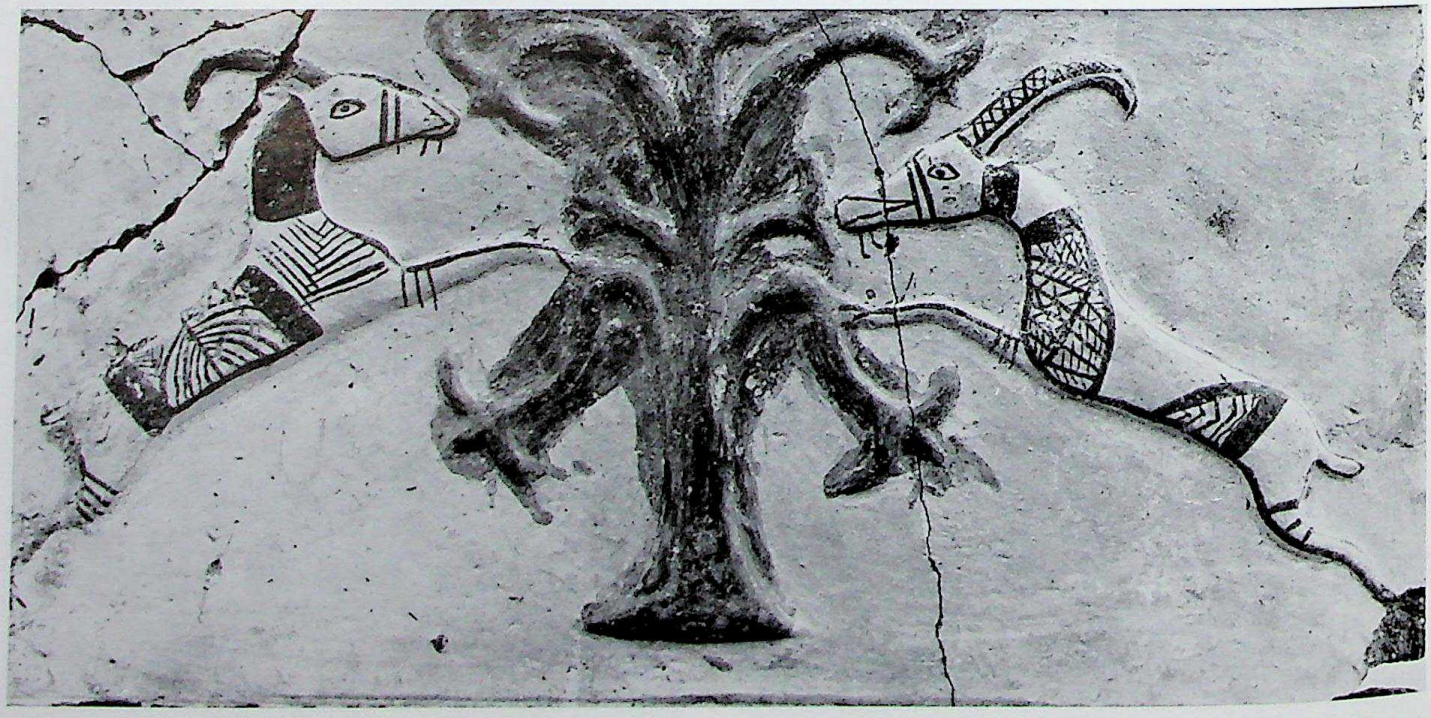




Pl. 459. The feline hunter and its prey. *Left, above*: Lion and bull, Sumerian engraving from Lagash (mod. Telloh), early 3d millennium B.C. Shell, ht., $2^{3}/_{4}$ in. Paris, Louvre. *Below*: Lion and gazelle, slab from a Byzantine iconostasis, 9th–12th cent. Stone, $39^{3}/_{8} \times 28$ in. Athens, Byzantine Museum. *Right, above*: Lion and bull, on a Mycenaean plaque from Spata, Greece, 13th cent. B.C. Ivory, $2^{1}/_{2} \times 3^{5}/_{8}$ in. Athens, National Museum. *Center*: Lion and reindeer, detail of a vase from Amlash, Iran, 9th–8th cent. B.C. Gold. Teheran, Archaeological Museum. *Below*: Tiger and gazelle, with lion and dog, detail of a plate from Iznik (?), Turkey, 17th cent. Ceramic. Paris, Louvre.

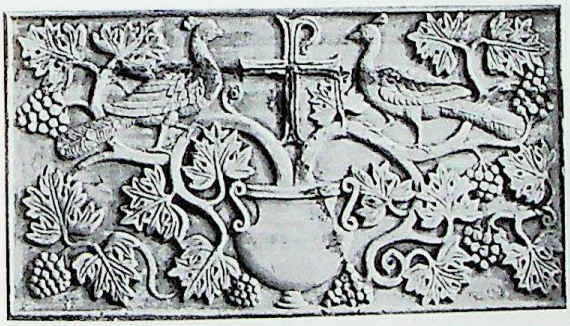
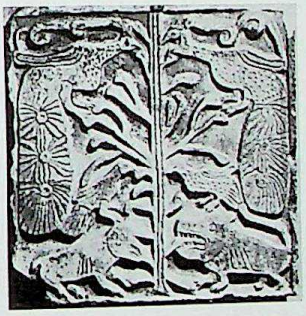
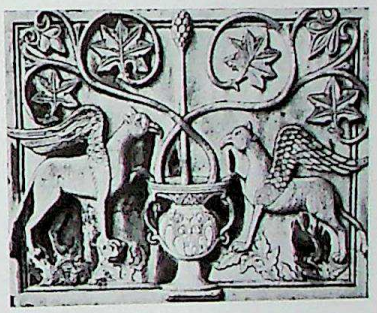
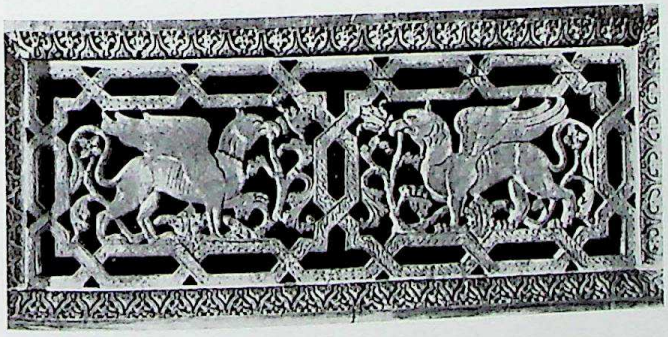
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





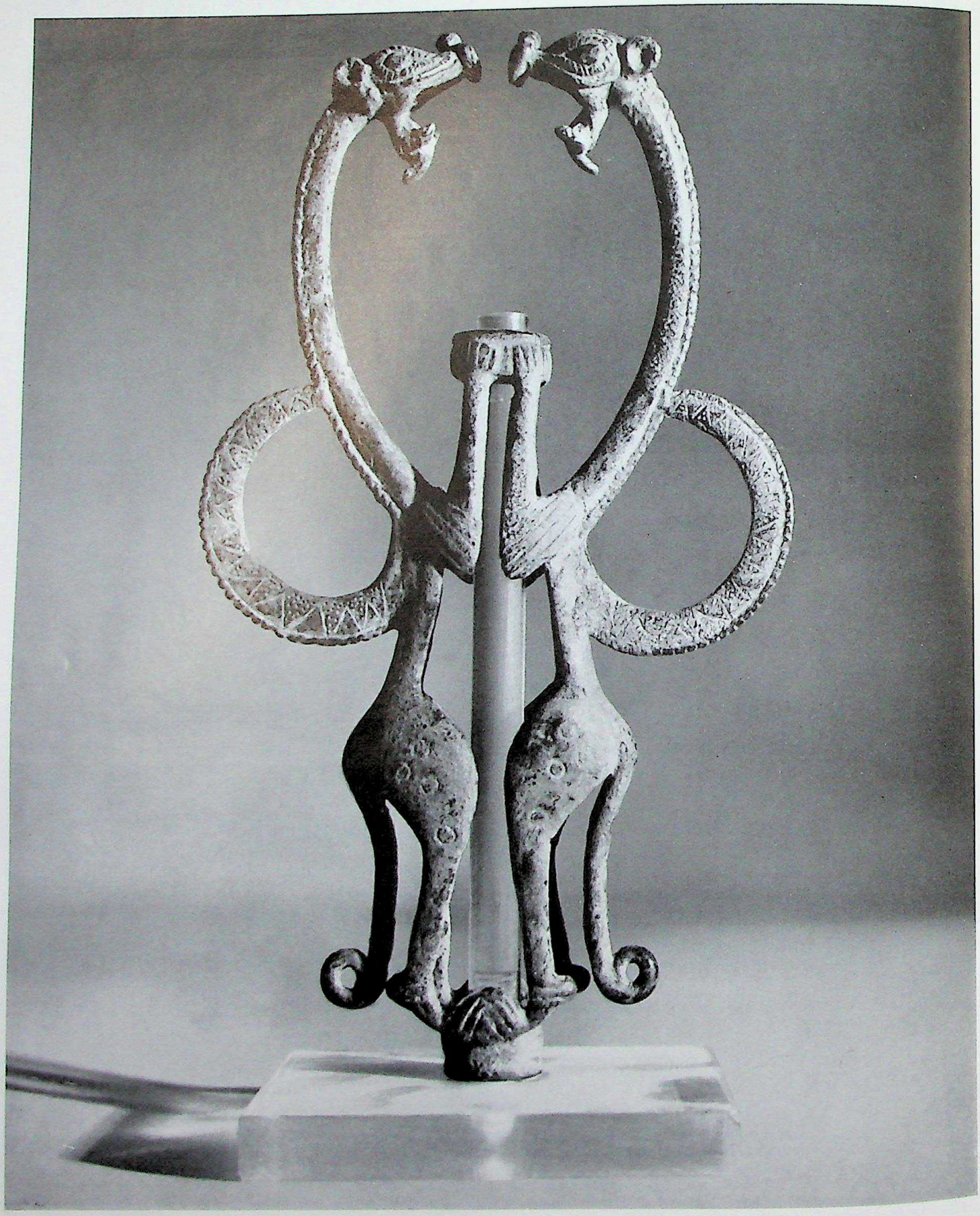
Pl. 460. Heraldic animal motifs. *Left, above*: Hero grappling with two rampant bulls, on a Neo-Babylonian seal, 8th–7th cent. B.C. Blue chalcedony, ht., 1 1/2 in. Boston, Museum of Fine Arts. (Photo from a cast.) *Center*: Head of a wild goat, belt buckle from Mongolia, late 1st millennium B.C. Bronze, ht., 1 1/2 in. Paris, Musée Cernuschi. *Above, right*: Rampant calves flanking a tree of life, the so-called "Malvasia stone," from northern Italy, 6th cent. B.C. Stone. Bologna, Museo Civico. *Below*: Salient ibexes flanking a tree of life, fragment of a frieze from Gordium, Turkey, 6th cent. B.C. Painted terra cotta, 10 1/2 × 17 1/8 in. Ankara, Archaeological Museum.

CC-0. Agamnigam Animal Preservation Foundation, Chandigarh

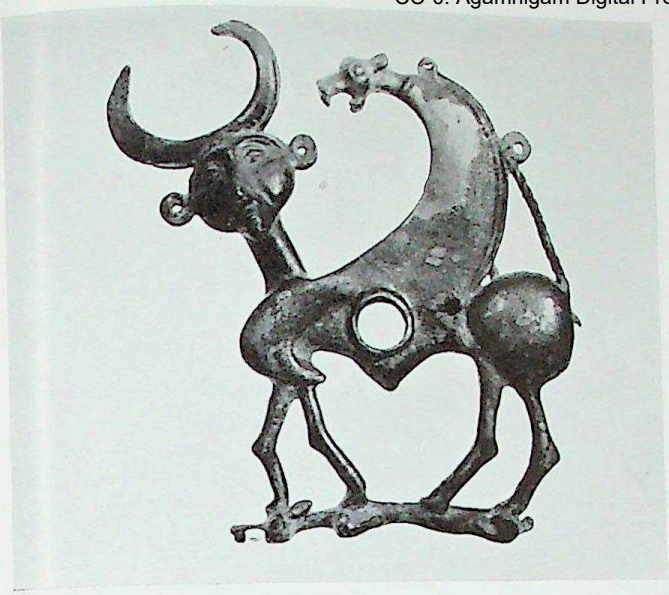
Pl. 461. Heraldic animal motifs. *Above, left*: Rampant addorsed lions, decorative panel from the west gate of the Great Stupa (No. 1) in Sanchi, India, ca. 25 B.C. *Center*: Confronted lions in a roundel, detail of a silk twill from eastern Iran, 8th–9th cent. Rome, Vatican Museums. *Right*: Rampant lions flanking a tree of life, slab from a Byzantine iconostasis, 9th cent. Athens, Byzantine Museum. *Center, left*: Confronted peacocks on grapevines, relief of a pluteus, Byzantine style, 6th cent. Marble. Ravenna, Italy, S. Apollinare Nuovo. *Middle*: Confronted peacocks, birds, and wild beasts flanking a tree of life, relief from a pluteus, Ferrara, second half of 8th cent. Ferrara, Italy, Museo dell'Opera del Duomo. *Right*: Confronted griffins, pluteus panel, Byzantium, 11th cent. Venice, Treasury of S. Marco, exterior of south wall. *Below, left*: Confronted griffins, panel of the throne of William II, 12th cent. Monreale, Sicily, Cathedral. *Right*: Bull and panther, from Hamadan, Iran, 11th–12th cent. Paris, Coll. Densmore.

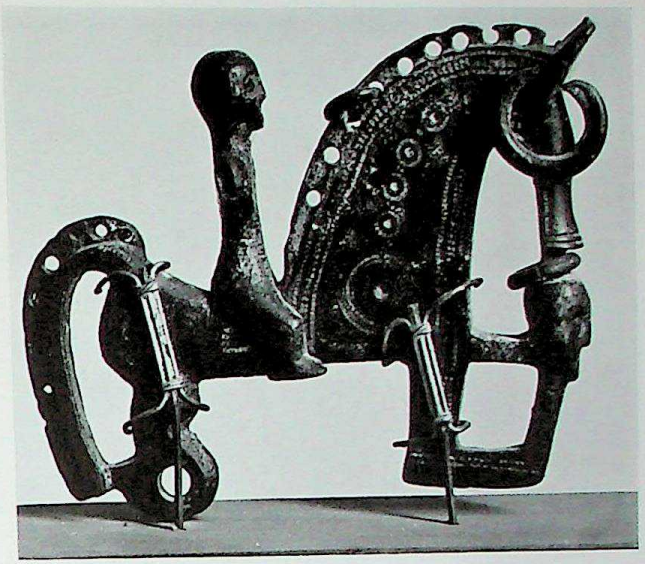
CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

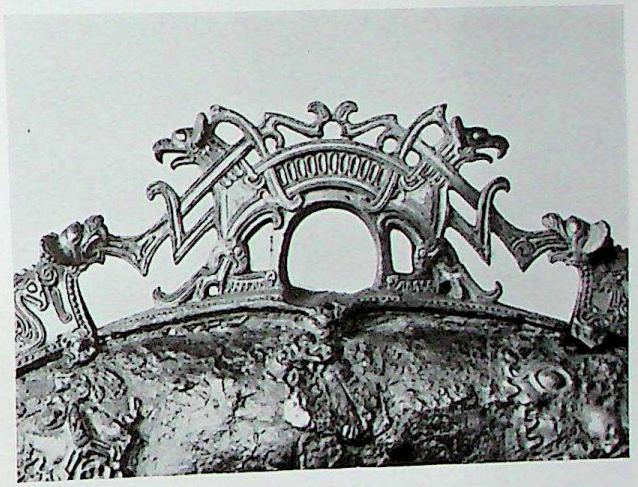


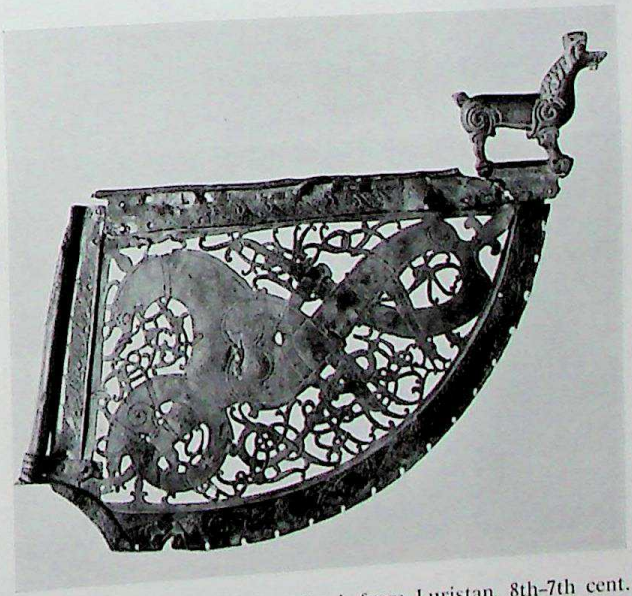
Pl. 462. Rampant winged felines, Luristan, 8th–7th cent. B.C. (?). Bronze, ht., 6¼ in. Boston, Museum of Fine Arts.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



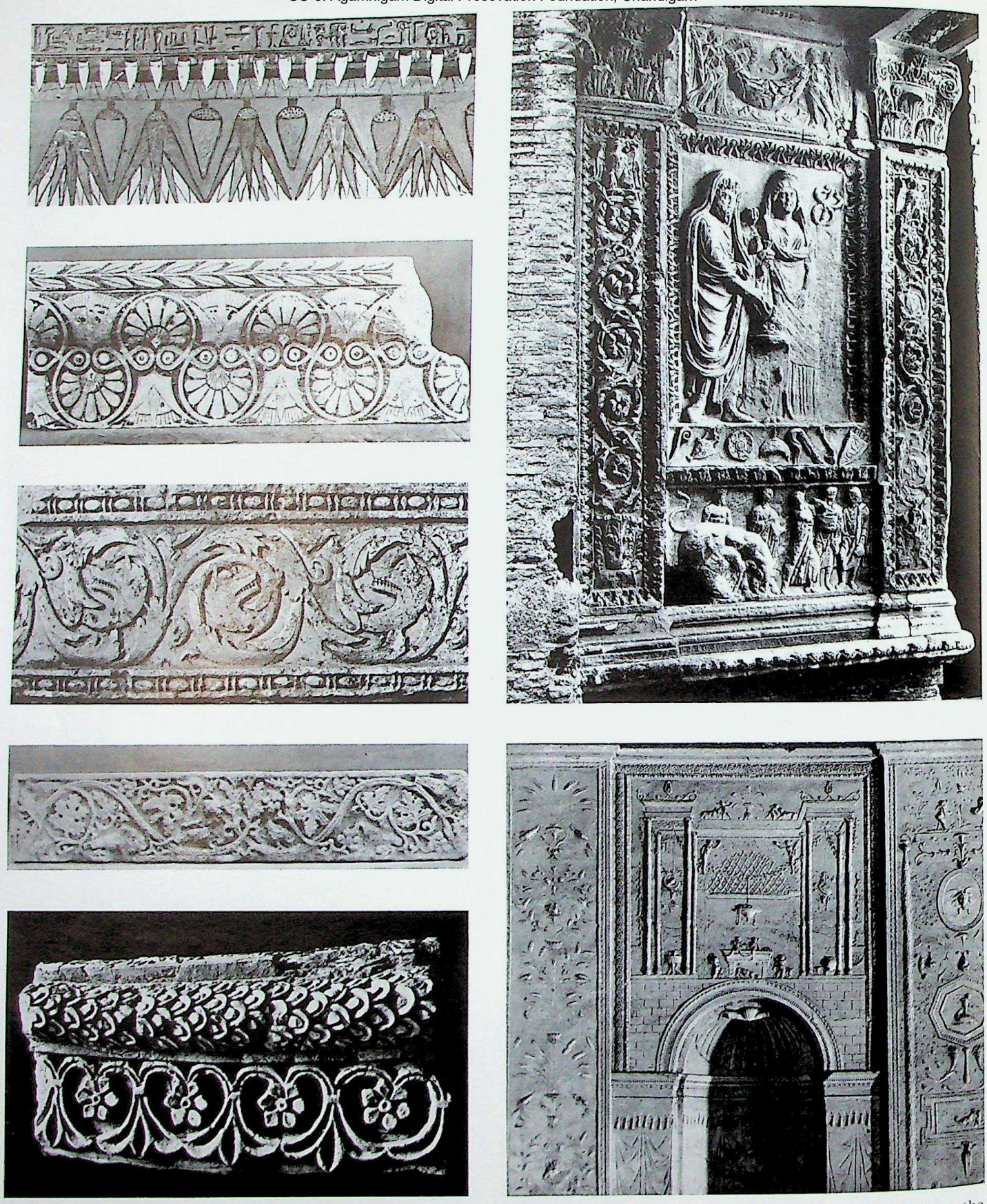






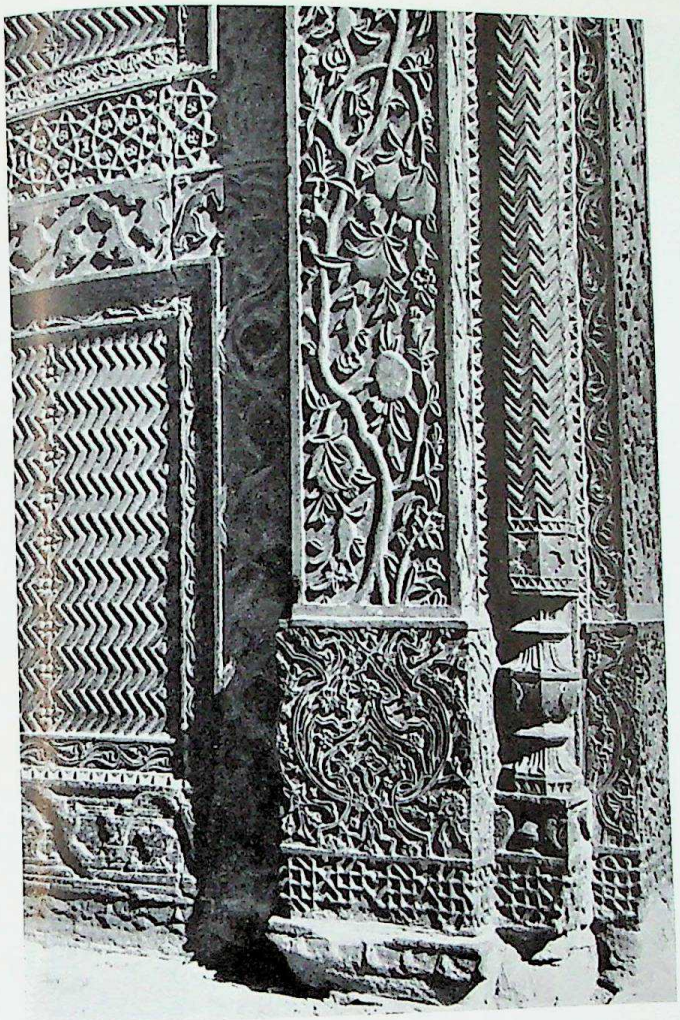
Pl. 463. The animal styles. *Left, above*: Cheekpiece of a votive bit in the form of a fantastic animal, from Luristan, 8th–7th cent. B.C. (?). Bronze. Paris, Louvre. *Center*: Openwork plaque with animal combat, from Ordos, Han dynasty (206 B.C.–A.D. 221). Bronze, l., 5 3/4 in. Paris, C. T. Loo & Cie. *Below*: Bracelet with animal combat, Scythian style, 2d cent. Gold, diam., 2 1/4 in. Peshawar, Pakistan, Museum. *Right, above*: Fibula with horse and rider, Celtiberian, 2d cent. B.C. Bronze, ht., 3 in. Madrid, Museo Arqueológico Nacional. *Center*: Harness mount with interlaced animals, detail, from Søllested, Fyn, Denmark, 10th cent. Gilded bronze and wood. Copenhagen, Nationalmuseet. *Below*: Weather vane with winged dragon and interlaced snakes, from Söderala, Hälsingland, Sweden, 11th cent. Gilded bronze, ca. 14 × 10 in. Stockholm, Statens Historiska Museum.

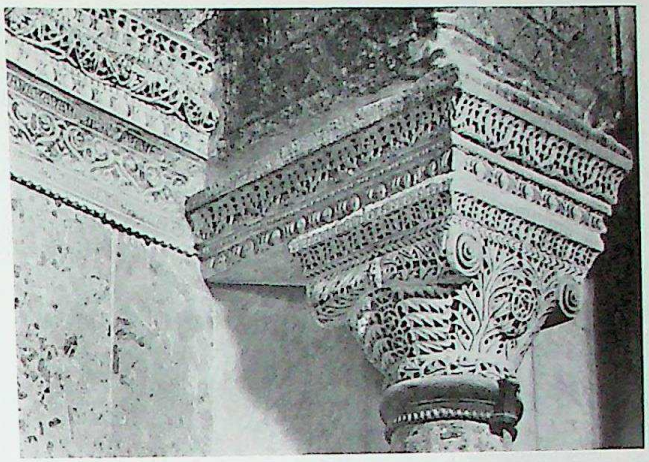
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

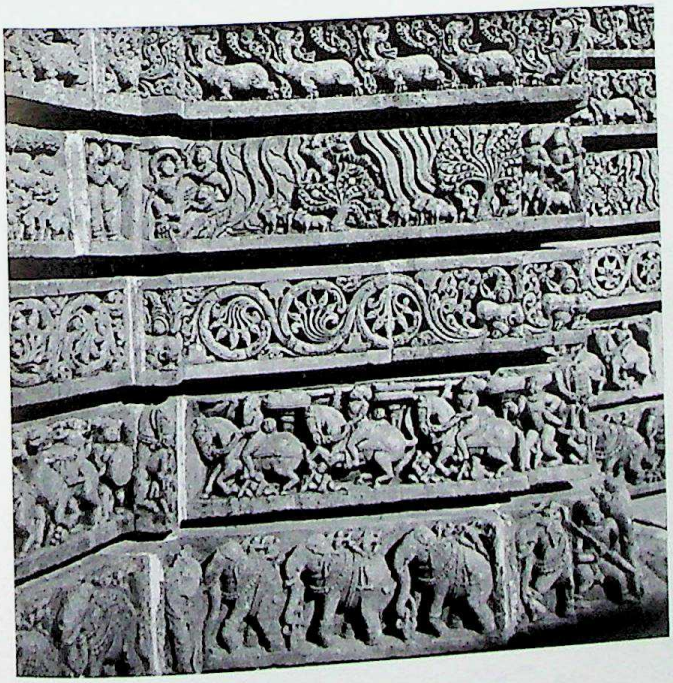


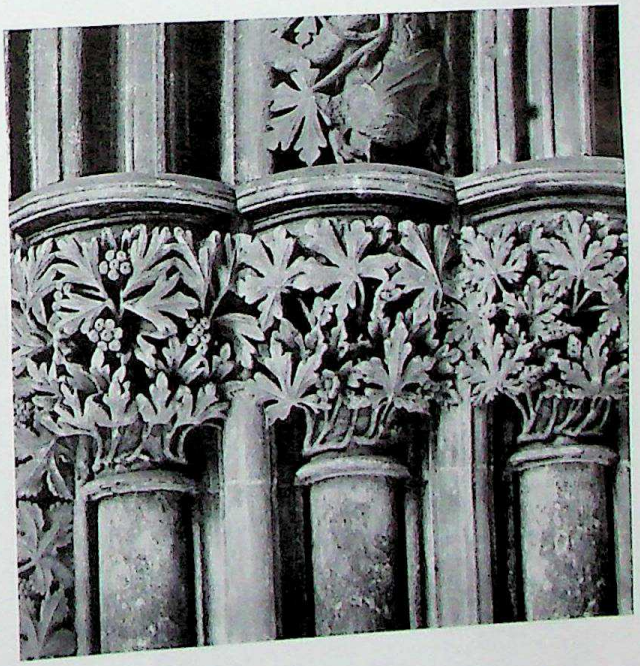
Pl. 464. Plant motifs in architectural decoration. *Left, above*: Lotus buds and flowers on a gabled coffer lid (cf. X, PL. 434), from the tomb of Kha, Thebes, Egypt, 18th dynasty. Painted wood. Turin, Museo Egizio. *Second from top*: Olive leaves, lotus flowers, and palmettes on a cavetto fragment from the Acropolis, 6th cent. B.C. Athens, Acropolis, Museum. *Third from top*: Acanthus spirals terminating in dragon heads, detail of the frieze of Trajan's monument at Adamclisi, Dobruja, Romania, first half of 2d cent. Limestone, Bucharest, National Museum. *Fourth from top*: Rinceau on a Coptic relief from Bawit, Egypt, 5th cent. New York, Metropolitan Museum. *Below*: Leaf garland and palmettes on a section of a Sassanian archivolt from Ctesiphon, Iraq, 6th–7th cent. L., 17½ in. Berlin, Staatliche Museen. *Right, above*: Rinceaux, garland, and acanthus leaves framing the main relief panel in the Arco degli Argentari, Rome, 203–04. *Below*: Floral motifs in the stucco tracery by Giovanni da Udine in the loggia of Villa Madama, Rome, 1525.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

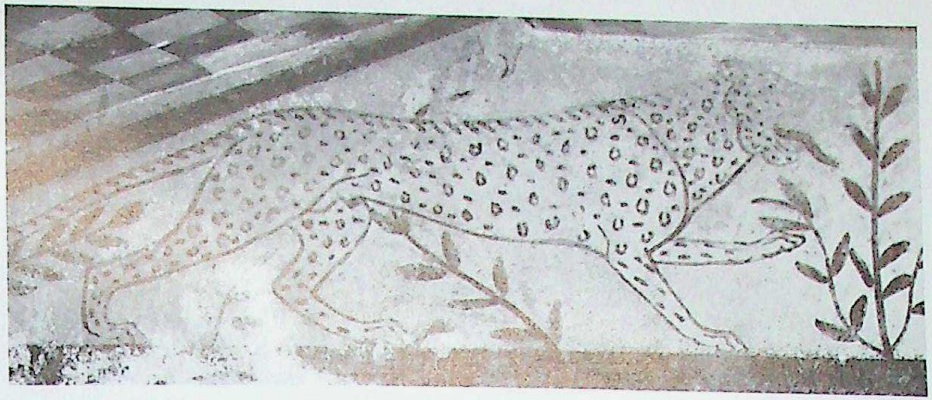


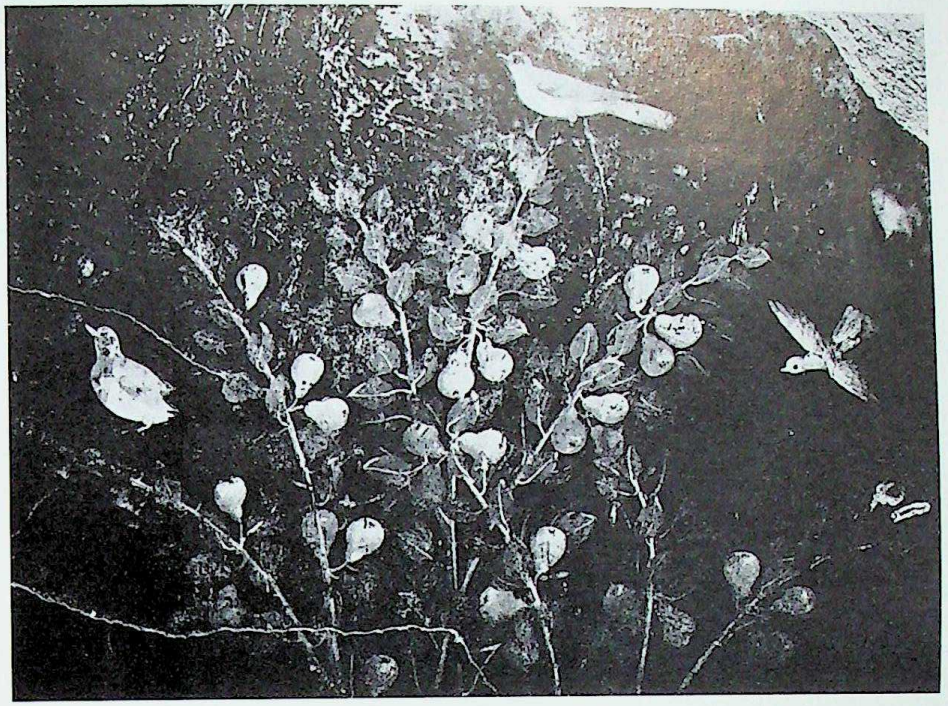






Pl. 465. Plant and animal motifs in architectural decoration. *Left, above*: Pomegranate tree and vine ornamentation on the pavilion of the Turkish sultana, Fatehpur Sikri, Uttar Pradesh, India, 16th cent. Stone. *Below*: Friezes of plant and animal reliefs on Keśava temple, Somnathpur, Mysore, India, second half of 13th cent. *Right, above*: Stylized acanthus leaves on a marble capital in Hagia Sophia, Istanbul, 532–37. *Center*: Fantastic animals with leaf tails and plant scrolls on capitals in the cloister of the Monastery of Santo Domingo de Silos, near Burgos, Spain, 12th cent. *Below*: Hawthorns, ranunculuses, and buttercups on capitals of the Chapter House portal, Southwell Minster, Nottinghamshire, England, late 13th cent.



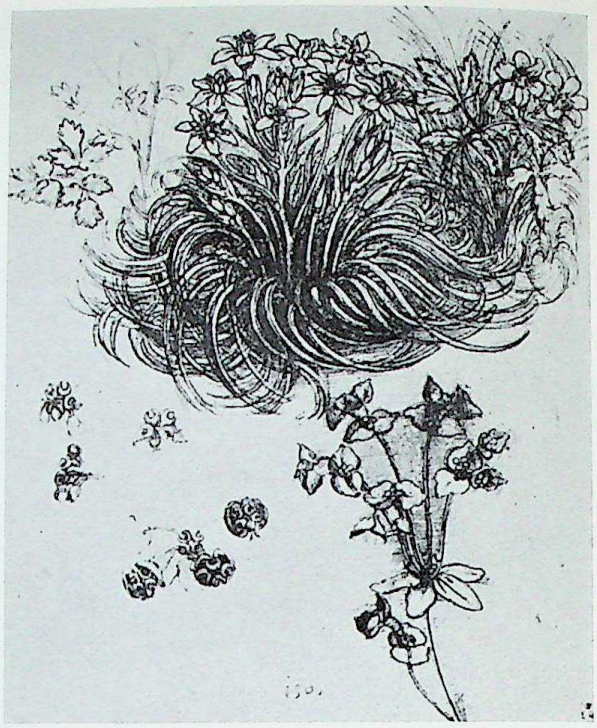


Pl. 466. *Above, left*: Lion attacking an antelope, plaque from Mycenae, 1600–1500 B.C. Gold, l., 3⁵/₈ in. Athens, National Museum. *Right*: Leopard, Etruscan wall painting in the Tomb of the Leopards, Tarquinia, ca. 480–470 B.C. *Below, left*: Ram, from Syracuse, 3d cent. B.C. (?). Bronze, l., 4 ft., 5 in. Palermo, Museo Nazionale Archeologico. *Right*: Pear tree and birds, detail of a Roman wall painting in the House of the Fruit Orchard, Pompeii, ca. mid-1st cent.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

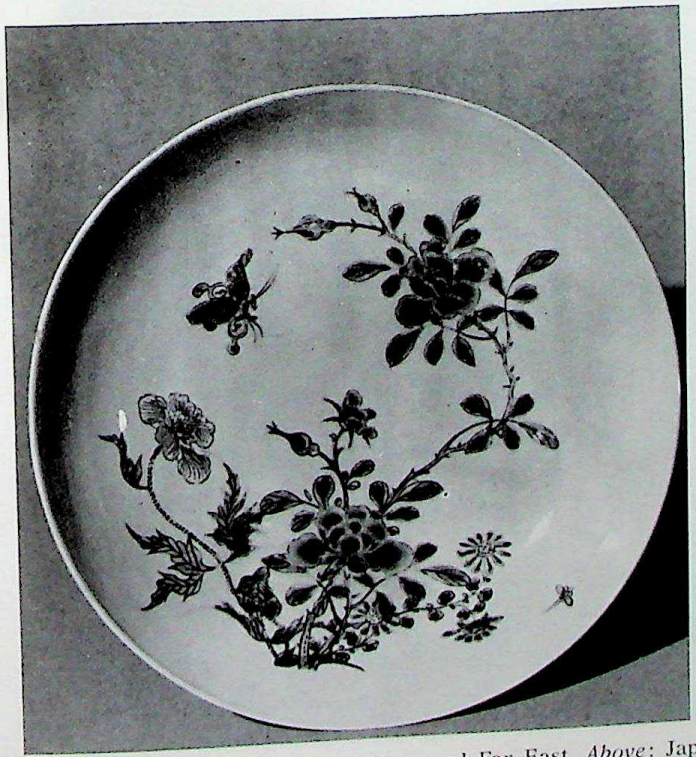
Pl. 467. Head of one of the horses of Selene's quadriga, from the east pediment of the Parthenon, 438–432 B.C. Marble, London, British Museum.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



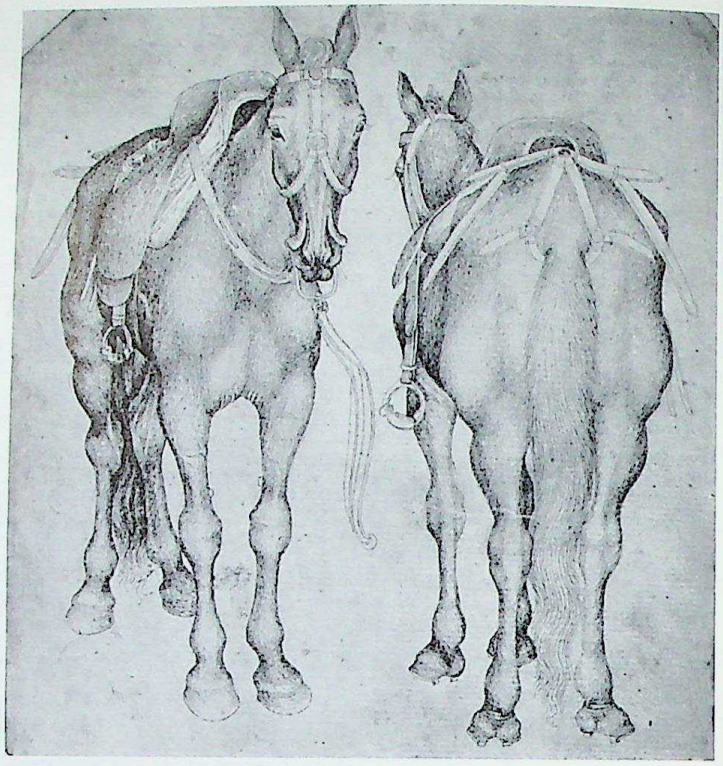
Pl. 468. *Above, left*: Rocket salad and nasturtium in *Theatrum sanitatis*, Lombard school, 14th–15th cent. Illumination. Rome, Biblioteca Casanatense (Cod. 4182, fol. 54). *Right*: Leonardo da Vinci, plant and flower studies, ca. 1506. Red chalk and ink, $7^{3}/_{4} \times 6^{1}/_{4}$ in. Windsor, England, Royal Colls. *Below*: H. van der Goes, Portinari Altarpiece, detail of central panel showing flowers and wheat, ca. 1476–78. Panel. Florence, Uffizi.

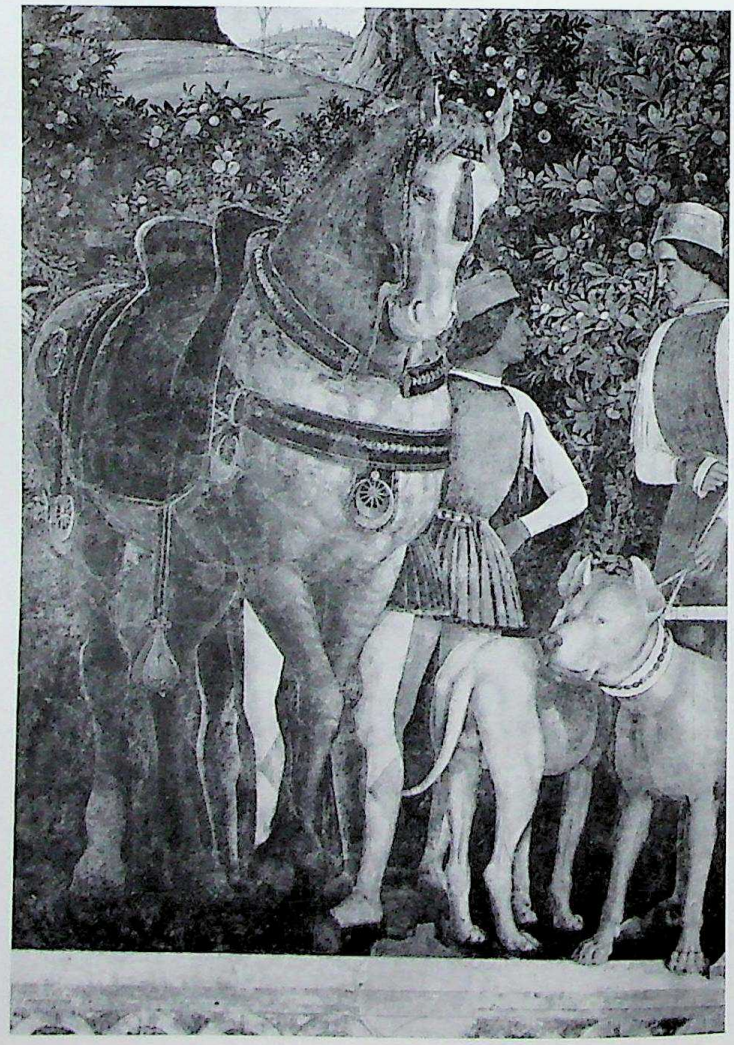
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 469. Floral ornament in the Near and Far East. *Above*: Japan. Blooming irises by a bridge, on a writing box by Ogata Kōrin, second half of 17th cent. Wood with lacquer and inlay, ht., 4 3/8 in. Tokyo, National Museum. *Below, left*: China. Flowers and insects, on a *famille-rose* plate, Yung-chêng period (1723–35). Diam., 7 1/2 in. Paris, Musée Guimet. *Right*: Turkey. Flowers and a peacock, on a faïence plate from Damascus, 16th cent. Paris, Louvre.

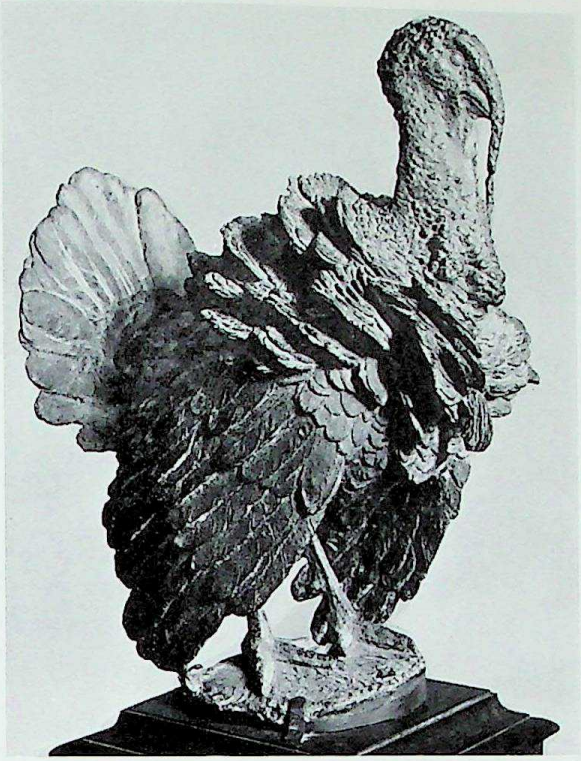
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

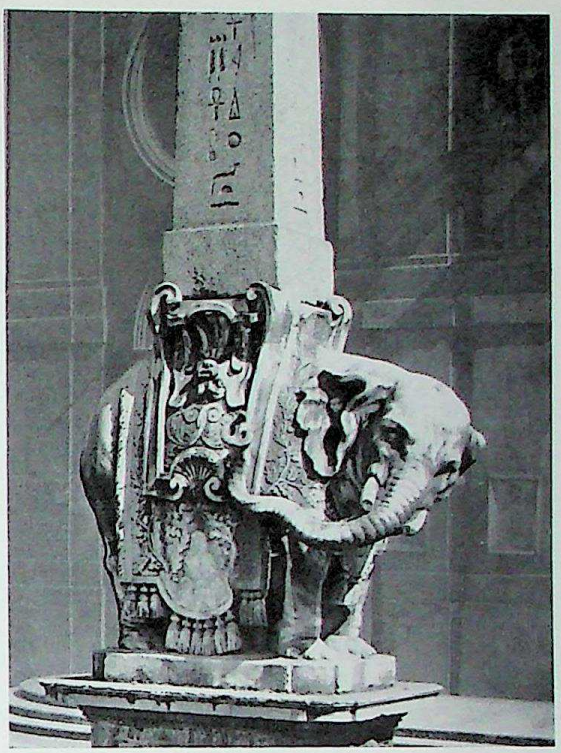




Pl. 470. *Left*: Studio of H. Memling, cranes depicted on the reverse of an altarpiece wing, ca. 1485. Panel, $22^1/_2 \times 6^3/_4$ in. London, National Gallery. *Right, above*: Pisanello, horses, ca. 1433–38. Pen drawing, $7^7/_8 \times 6^1/_2$ in. Paris, Louvre. *Below*: A. Mantegna, horse, hounds, and huntsmen, detail of a fresco in the Camera degli Sposi, Palazzo Ducale, Mantua, completed 1477.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh



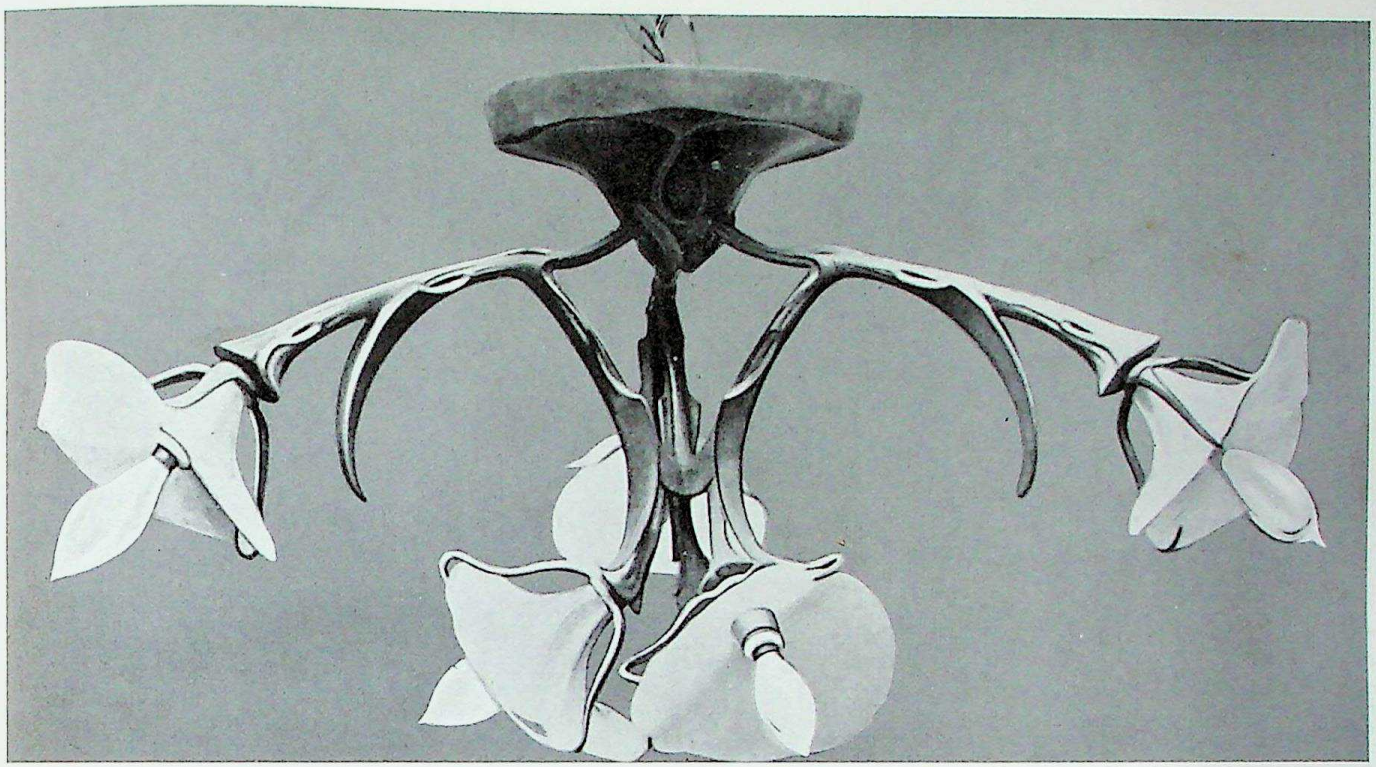


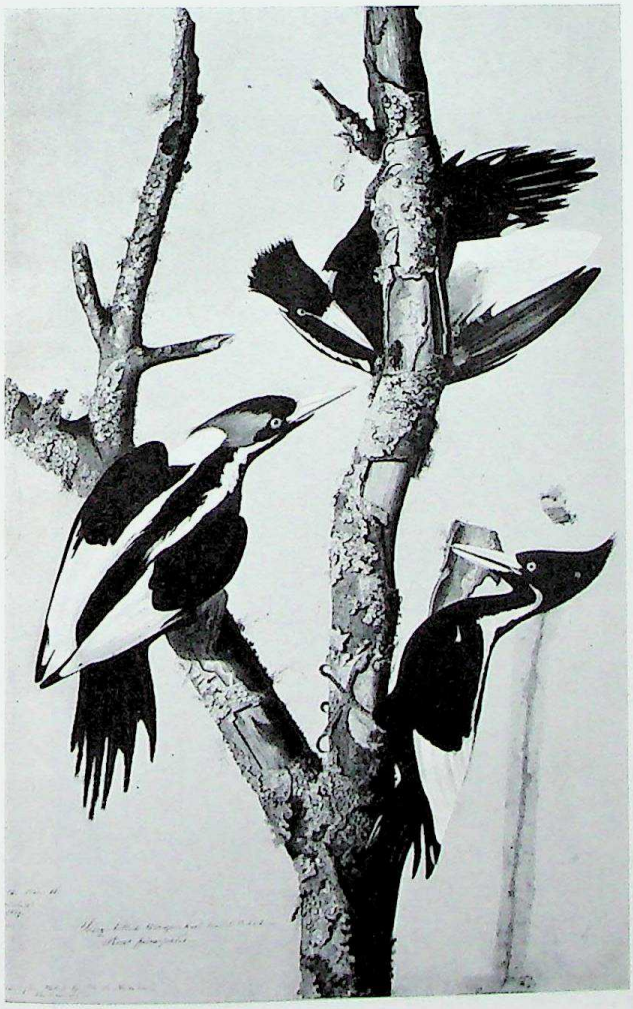
Pl. 471. *Above, left*: Giambologna, Turkey, ca. 1567. Bronze, ht., 24 3/8 in. Florence, Museo Nazionale. *Right*: G. L. Bernini, elephant bearing an obelisk, 1666–67. Marble. Rome, Piazza della Minerva. *Below*: J. Asselyn (1610–52), The Threatened Swan. Canvas, 4 ft., 8 3/4 in. × 5 ft., 7 3/8 in. Amsterdam, Rijksmuseum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 472. *Above*: D. Teniers the Younger (1610–90), Costumed Monkeys at an Inn. Panel, $10^5/_8 \times 14^1/_8$ in. Munich, Bayerische Staatsgemäldesammlungen. *Below*: J. Ward, The Deer Stealer, ca. 1823. Canvas, 7 ft., 6 in. × 12 ft. London, Tate Gallery.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 473. *Above*: M. Dufrène, floral ceiling lamp, exhibited in the Exposition of Modern Decorative Arts, Turin, 1902. Glass and metal. *Below, left*: J. J. Audubon, Ivory-billed Woodpecker, for *Birds of America*, published 1829. Water color, 38×25 in. New York, New-York Historical Society. *Right*: P. Picasso, Le Grand Coq, 1932. Bronze, ht., 26 in. Paris, Galerie Leiris.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 474. Tan-an, Heron, Muromachi period (1334–1573). Ink on paper, 12¾ × 19½ in. Tokyo, National Museum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 475. A. F. Desportes, Still Life, with a dog and dead game by a rosebush, 1724. Canvas, 3 ft., 6½ in. × 4 ft., 7½ in. Paris, Louvre.

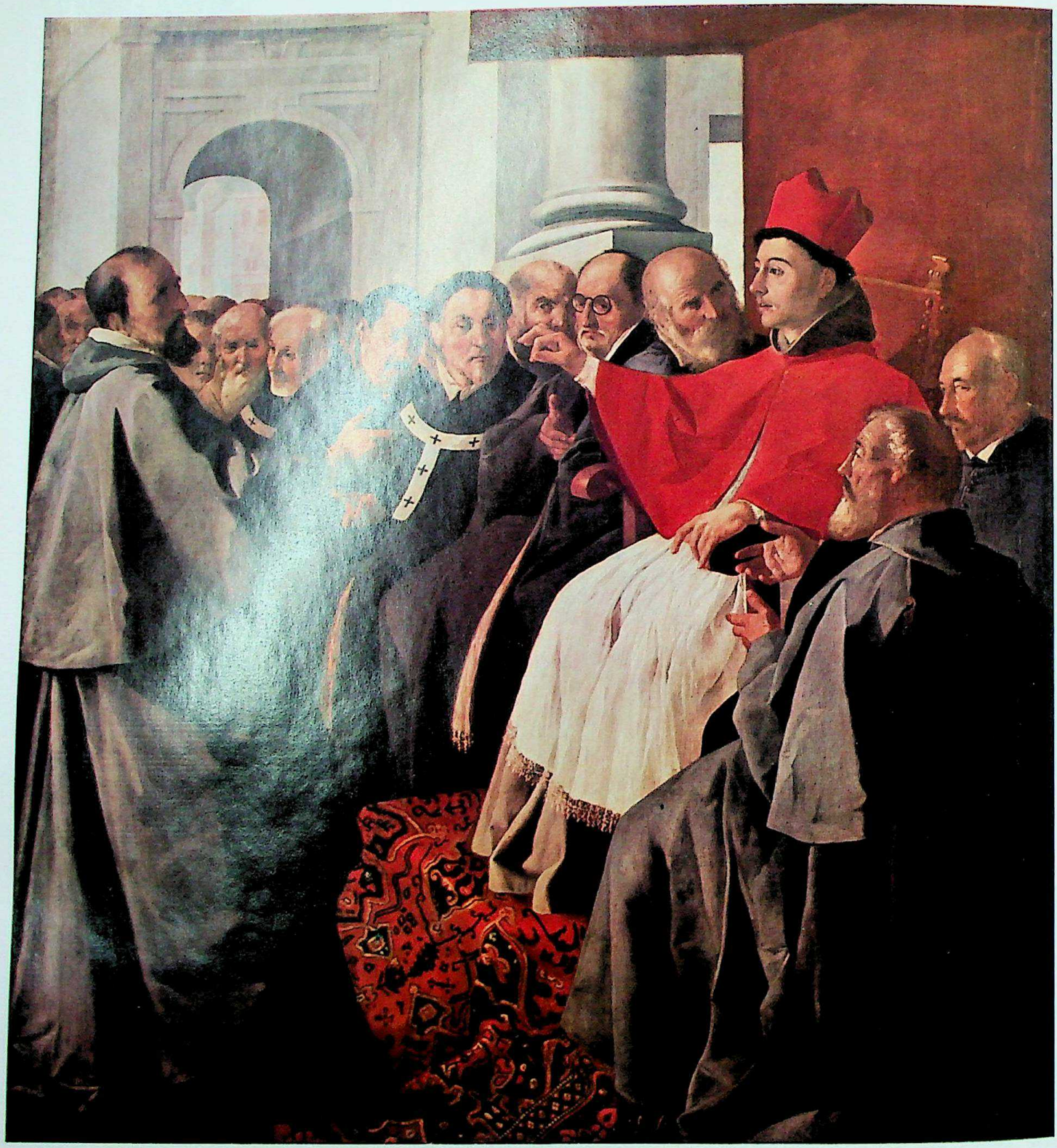
Pl. 476. *Left*: Pasargadae, Fars, Iran, ruins, presumably of a fire temple, Achaemenid period. *Right*: Magian priests presiding at a sacrifice, shown with barsom and mouth cover, Achaemenid period. Stone relief, ht., 26 3/8 in. Istanbul, Archaeological Museums.

CC-0. Agamnigarh Digital Preservation Foundation, Chandigarh

Pl. 477. Sassanian coins showing the fire altar flanked by royal personages. Diam., ca. 26 mm. *Left*: Coin of Shāpur I (241–72), reverse. *Right*: Coin of Bahrām II (276–93), reverse. Both, Leningrad, The Hermitage.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh
https://eGangotri.in

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh



Pl. 478. St. Bonaventura at the Council of Lyons. Canvas, 8 ft., 2½ in. × 7 ft., 4½ in. Paris, Louvre.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 479. The Adoration of the Shepherds. Canvas, 8 ft., 6¾ in. × 5 ft., 9 in. Grenoble, France, Musée de Peinture et Sculpture.

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh

Pl. 480. *Left*: The Crucifixion. Canvas, 9 ft., 6½ in. × 5 ft., 5¼ in. Chicago, Art Institute. *Right*: St. Serapion. Canvas, 47½ × 40¾ in. Hartford, Conn., Wadsworth Atheneum.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 481. Recovery of the Image of the Virgin of El Puig. Canvas, 5 ft., 4½ in. × 6 ft., 10 in. Cincinnati, Art Museum.

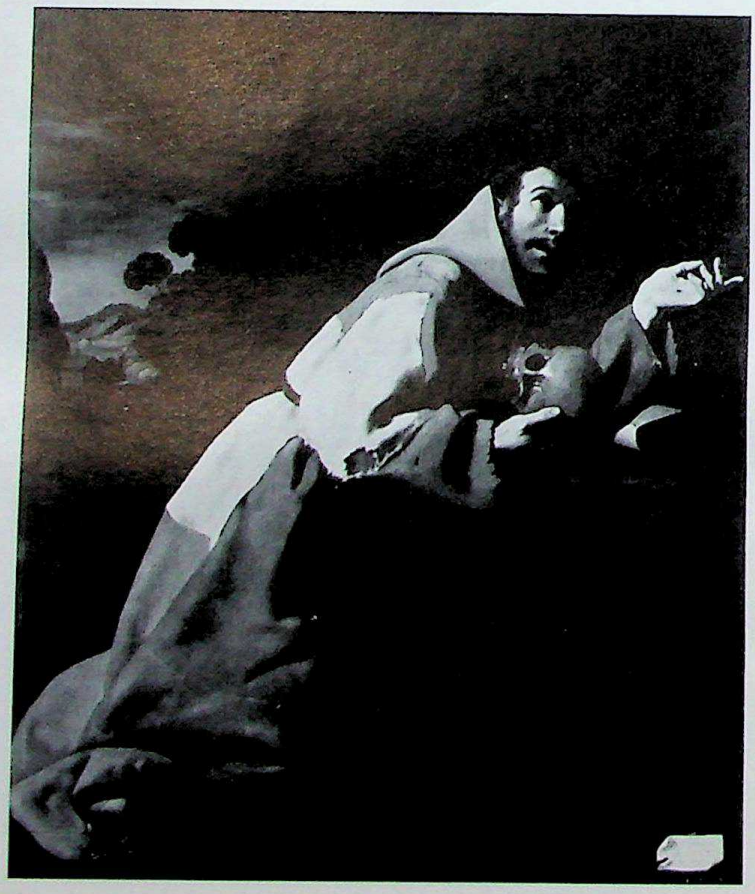
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

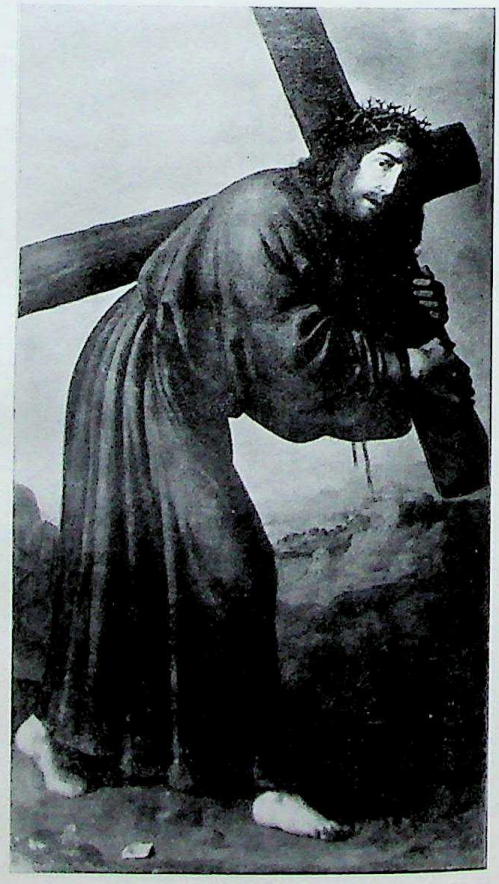
Pl. 482. St. Margaret. Canvas, 6 ft., 4¼ in. × 3 ft., 8¼ in. London, National Gallery. (Photographed prior to restoration.)

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Pl. 483. The Temptation of St. Jerome. Canvas, 7 ft., 8½ in. × 9 ft., 6 in. Guadalupe, Spain, S. Jerónimo.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh





Pl. 484. *Above*: St. John the Baptist. Canvas, $23^{5}/_{8} \times 31^{1}/_{8}$ in. Cádiz, Spain, Museo Provincial de Bellas Artes. *Below, left*: St. Francis in Meditation. Canvas, 5 ft., $3^{3}/_{4}$ in. × 4 ft., 6 in. London, National Gallery. *Right*: Christ Carrying the Cross. Canvas, 6 ft., $4^{3}/_{4}$ in. × 3 ft., $6^{1}/_{2}$ in. Orléans, France, Cathedral of Ste-Croix, sacristy.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Preservation Foundation, Chandigarh